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# SMITHSONIAN INSTITUTION

Budget Justifications for Fiscal Year 1990



Submitted to the Committees on Appropriations  
Congress of the United States

January 1989



Smithsonian Institution  
 "Salaries and Expenses"  
 Summary of the 1987 Appropriation and the 1988 and 1989 Estimates

ACTIVITY, UNIT/ITEM	*FY 87 Actual*			***** FY 1988 BASE *****			***** FY 1989 EST *****			*****ANALYSIS OF INCREASE*****						
	FTE	AMOUNT	FTP	FTE	AMOUNT	FTP	Round	FTE	AMOUNT	FTP	FTE UNCONTROL	PROGRAM				
RESEARCH																
Assistant Secretary for Research	20	1,374	31	29.00	29	1,205	14	1,219	31	29.00	29	1,229	0	0	10	0
--Immediate Office	15	1,167	26	24.00	24	996	10	1,006	26	24.00	24	1,014	0	0	8	0
--Joseph Henry Papers	5	207	5	5.00	5	209	4	213	5	5.00	5	215	0	0	2	0
Astrophysical Observatory	108	9,920	96	104.50	105	9,892	92	9,984	99	107.50	108	10,416	3	3	113	319
Smithsonian Tropical Research Institute	93	4,198	122	109.30	109	5,231	51	5,282	124	125.30	125	5,816	2	16	278	256
Smithsonian Environmental Research Ctr.	28	1,960	27	28.00	28	1,373	13	1,386	27	28.00	28	1,397	0	0	11	0
--Rockville	4	576	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0
--Edgewater	24	1,384	27	28.00	28	1,373	13	1,386	27	28.00	28	1,397	0	0	11	0
National Zoological Park	314	12,372	338	329.25	329	12,979	164	13,143	348	342.25	342	13,890	10	13	226	521
Smithsonian Institution Archives	14	591	13	15.00	15	577	8	585	13	15.00	15	644	0	0	8	51
Smithsonian Institution Libraries	104	5,115	105	97.50	97	5,070	49	5,119	106	99.50	99	5,079	1	2	55	(95)
Major Scientific Instrumentation	0	0	0	0.00	0	525	0	525	0	0.00	0	1,206	0	0	0	681
Subtotal	681	35,530	732	712.55	712	36,852	391	37,243	748	746.55	746	39,677	16	34	701	1,733
MUSEUMS																
Assistant Secretary for Museums	23	1,048	21	24.00	24	1,083	13	1,096	21	24.00	24	1,111	0	0	15	0
--Immediate Office	8	487	9	9.00	9	551	5	556	9	9.00	9	562	0	0	6	0
--Office of Museum Programs	12	428	9	12.00	12	400	6	406	9	12.00	12	412	0	0	6	0
--Office of the Registrar	3	133	3	3.00	3	132	2	134	3	3.00	3	137	0	0	3	0
National Museum of Natural History	496	22,673	531	549.75	550	23,762	291	24,053	552	576.75	577	26,209	21	27	436	1,720
National Air and Space Museum	218	8,940	221	211.75	212	9,005	113	9,118	225	215.75	216	9,497	4	4	118	261
National Museum of American History	318	13,363	307	326.50	326	13,500	176	13,676	313	336.50	336	14,462	6	10	242	544
National Museum of American Art	115	5,105	107	118.00	118	5,036	57	5,093	108	119.00	119	5,297	1	1	56	148
--American Art	99	4,618	88	101.00	101	4,541	51	4,592	89	102.00	102	4,789	1	1	49	148
--1/2 Bldg. Mgr.	16	487	19	17.00	17	495	6	501	19	17.00	17	508	0	0	7	0
National Portrait Gallery	84	3,879	78	85.25	85	4,038	44	4,082	79	87.25	87	4,068	1	2	60	(74)
--Portrait Gallery	68	3,392	60	69.25	69	3,542	38	3,580	61	71.25	71	3,559	1	2	53	(74)
--1/2 Bldg. Mgr.	16	487	18	16.00	16	496	6	502	18	16.00	16	509	0	0	7	0
Hirshhorn Museum and Sculpture Garden	71	3,282	80	77.38	78	3,335	36	3,371	80	77.38	78	3,409	0	0	38	0
Center for Asian Art	57	3,941	67	66.75	67	3,899	33	3,932	67	67.75	68	4,292	0	1	60	300
--Freer Gallery of Art	33	1,225	30	30.00	30	1,328	16	1,344	30	30.00	30	1,658	0	0	14	300
--Sackler Gallery	24	2,716	37	36.75	37	2,571	17	2,588	37	37.75	38	2,634	0	1	46	0
Archives of American Art	31	1,057	19	19.00	19	1,038	12	1,050	20	20.00	20	1,100	1	1	11	39
Cooper-Hewitt Museum	32	1,077	23	30.00	30	1,074	15	1,089	24	31.00	31	1,193	1	1	15	89
National Museum of African Art	44	3,025	56	55.50	55	3,385	26	3,411	58	58.50	58	3,535	2	3	40	84
Anacostia Museum	14	868	19	19.00	19	929	9	938	21	21.00	21	1,016	2	2	8	70
Conservation Analytical Laboratory	34	2,402	44	41.00	41	2,409	23	2,432	44	41.00	41	2,456	0	0	24	0
Office Exhibits Central	45	1,700	49	45.75	46	1,830	23	1,853	49	45.75	46	1,892	0	0	29	0
Smithsonian Traveling Exhibition Service	11	635	14	14.75	15	620	7	627	14	14.75	15	667	0	0	10	30
Subtotal	1,583	72,995	1,636	1,684.38	1,685	74,943	878	75,821	1,675	1,736.38	1,737	80,194	39	52	1,162	3,211





Smithsonian Institution  
 "Salaries and Expenses"

Summary of the 1987 Appropriation and the 1988 and 1989 Estimates

ACTIVITY, UNIT/ITEM	*FY 87 Actual*		***** FY 1988 BASE *****		***** FY 1989 EST *****		*****ANALYSIS OF INCREASE*****	
	FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
<b>PUBLIC SERVICE</b>								
Assistant Secretary for Public Service	25	1,326	24	1,267	14	1,281	24	1,294
--Immediate Office	4	259	4	235	3	238	4	241
--Telecommunications	4	268	5	230	3	233	5	236
--VIARC	4	192	2	177	1	178	2	179
--Public Affairs	13	607	13	625	7	632	13	638
SI Press	25	1,110	30	1,192	17	1,209	30	1,226
Subtotal	50	2,436	54	2,459	31	2,490	54	2,520
<b>OFFICE OF INTERNATIONAL ACTIVITIES</b>								
--Immediate Office	2	96	0	96	2	98	0	99
--Division of Programs	0	34	0	50	0	50	0	50
--International Center	0	180	2	312	0	312	2	312
--Service and Protocol	5	206	5	215	3	218	5	221
--Publications Exchange	2	39	2	42	1	43	2	44
--Special Foreign Currency Admin.	2	67	2	72	1	73	2	73
Subtotal	11	622	11	787	7	794	11	799
<b>SPECIAL PROGRAMS</b>								
American and Folklife Programs	12	764	5	794	7	801	7	912
--American Studies	2	108	2	104	2	106	2	107
--Folklife Programs	10	656	3	690	5	695	5	805
IESP	10	714	2	750	4	754	2	757
Academic & Educational Programs	16	854	20	976	11	987	21	1,093
--Office of Fellowships and Grants	7	289	7	343	4	347	7	351
--Office of Interdisciplinary Studies	1	182	3	101	1	102	3	118
--Elementary and Secondary Education	8	383	7	350	4	354	7	396
--National Science Resource Center	0	0	3	182	2	184	4	228
Museum Support Center	40	4,475	36	4,475	16	4,491	36	4,659
--Equipment	0	3,165	0	3,058	0	3,058	0	3,058
--Operations	25	897	36	969	11	980	36	992
--Move	15	413	0	448	5	453	0	609
Subtotal	78	6,807	63	6,995	38	7,033	66	7,421
Subtotal	129	10,863	128	10,944	76	10,997	126	11,241



Smithsonian Institution  
 "Salaries and Expenses"  
 Summary of the 1987 Appropriation and the 1988 and 1989 Estimates

ACTIVITY, UNIT/ITEM	*FY 87 Actual*			***** FY 1988 BASE *****			***** FY 1989 EST *****			*****ANALYSIS OF INCREASE*****					
	FTE	AMOUNT		Round	Revsd.	Supp.	Round	FTE	AMOUNT	FTP	FTE	AMOUNT	FTP	FTE	AMOUNT
ADMINISTRATION															
--Office of the Secretary	4	215	6	6.00	300	4	304	6	6.00	6	307	0	0	3	0
--Secretary's Files	4	104	4	4.00	114	2	116	4	4.00	4	119	0	0	3	0
--Office of the Secretary Emeritus	1	48	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0
--Office of the Under Secretary	1	47	1	1.00	63	1.0	64	1	1.00	1	65	0	0	1	0
--Office of Audits and Investigations	11	634	13	12.00	534	8	542	14	13.00	13	629	1	1	11	76
--Office of the General Counsel	10	575	10	10.00	588	8	596	10	10.00	10	604	0	0	8	0
--Office of the Treasurer	1	31	1	1.00	32	1	33	1	1.00	1	34	0	0	1	0
--Financial Management and Planning	5	254	4	4.00	212	3.0	215	5	5.00	5	718	1	1	3	500
--Accounting and Financial Services	26	1,259	29	26.75	1,590	13	1,603	35	32.75	33	1,856	6	6	139	114
--Asst. Secty. for Administration	2	218	2	2.00	195	2	197	2	2.00	2	198	0	0	1	0
--Office of Equal Opportunity	6	309	7	7.00	340	4	344	7	7.00	7	348	0	0	4	0
--Office of Special Events	2	51	2	2.00	66	1	67	2	2.00	2	68	0	0	1	0
--Office of the Congressional Liaison	3	152	3	3.00	157	2	159	3	3.00	3	161	0	0	2	0
--Office of Personnel Administration	47	1,751	48	49.50	1,850	38	1,888	53	54.50	55	2,113	5	5	57	168
--Management Analysis Office	11	491	11	10.00	503	7	510	11	10.00	10	516	0	0	6	0
--Travel Services Office	1	39	2	2.00	69	0	69	2	2.00	2	70	0	0	1	0
--Office of Procurement and Property Mgmt	23	1,154	29	25.75	1,178	15	1,193	39	35.75	36	1,773	10	10	29	551
--Printing and Photographic Services	39	1,693	42	39.00	1,735	19	1,754	42	39.00	39	1,773	0	0	19	0
--Office of Programming and Budget	5	376	9	11.00	415	5	420	9	11.00	11	425	0	0	5	0
--Office of Information Resources Mgmt.	27	2,465	47	44.00	2,581	27	2,608	49	46.00	46	2,805	2	2	29	168
--Workers' Compensation	0	746	0	0.00	838	0	838	0	0.00	0	881	0	0	43	0
--Unemployment Compensation	0	172	0	0.00	398	0	398	0	0.00	0	398	0	0	0	0
--Director, Ofc. of Facilities Services	5	272	7	7.50	389	5	394	8	9.50	9	485	1	2	25	66
--Architect. Hist. and Hist. Preservation	5	220	4	4.00	186	3	189	5	5.00	5	220	1	1	2	29
--Environmental Mgmt and Safety Programs	17	728	21	22.50	1,237	14	1,251	29	32.50	32	1,751	8	10	64	436
--FERS (Thrift Plan)	0	243	0	0.00	6,181	0	6,181	0	0.00	0	6,181	0	0	0	0
--Grade Target Reduction	0	0	0	0.00	0	0	0	0	0.00	0	(186)	0	0	(186)	0
Subtotal	256	14,247	302	294.00	21,751	182	21,933	337	332.00	332	24,312	35	38	271	2,108









# SMITHSONIAN INSTITUTION

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## GENERAL COUNSEL

## TREASURER

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 and Safety  
 Office of Environmental Management  
 Office of Plant Services  
 Office of Protection Services  
 Office of Information Resource  
 Management  
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## Assistant Secretary for RESEARCH

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 Program  
 Joseph Henry Papers  
 National Zoological Park  
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 Office of Quinquenary Programs  
 Smithsonian Astrophysical Observatory  
 Smithsonian Environmental Research Center  
 Smithsonian Institution Archives  
 Smithsonian Institution Libraries  
 Smithsonian Tropical Research Institute

## Assistant Secretary for MUSEUMS

Anacostia Museum  
 Archives of American Art  
 Arthur M. Sackler Gallery and  
 Freer Gallery of Art  
 Conservation Analytical Laboratory  
 Cooper-Hewitt Museum  
 Hirshhorn Museum and Sculpture Garden  
 International Gallery  
 National Air and Space Museum  
 National Museum of African Art  
 National Museum of American Art  
 Renwick Gallery  
 National Museum of American History/  
 National Museum of Man  
 Museum Support Center  
 National Portrait Gallery  
 Office of Exhibits Central  
 Office of Horticulture  
 Office of Museum Programs  
 Office of the Registrar  
 Smithsonian Institution Traveling  
 Exhibition Service

## Assistant Secretary for PUBLIC SERVICE

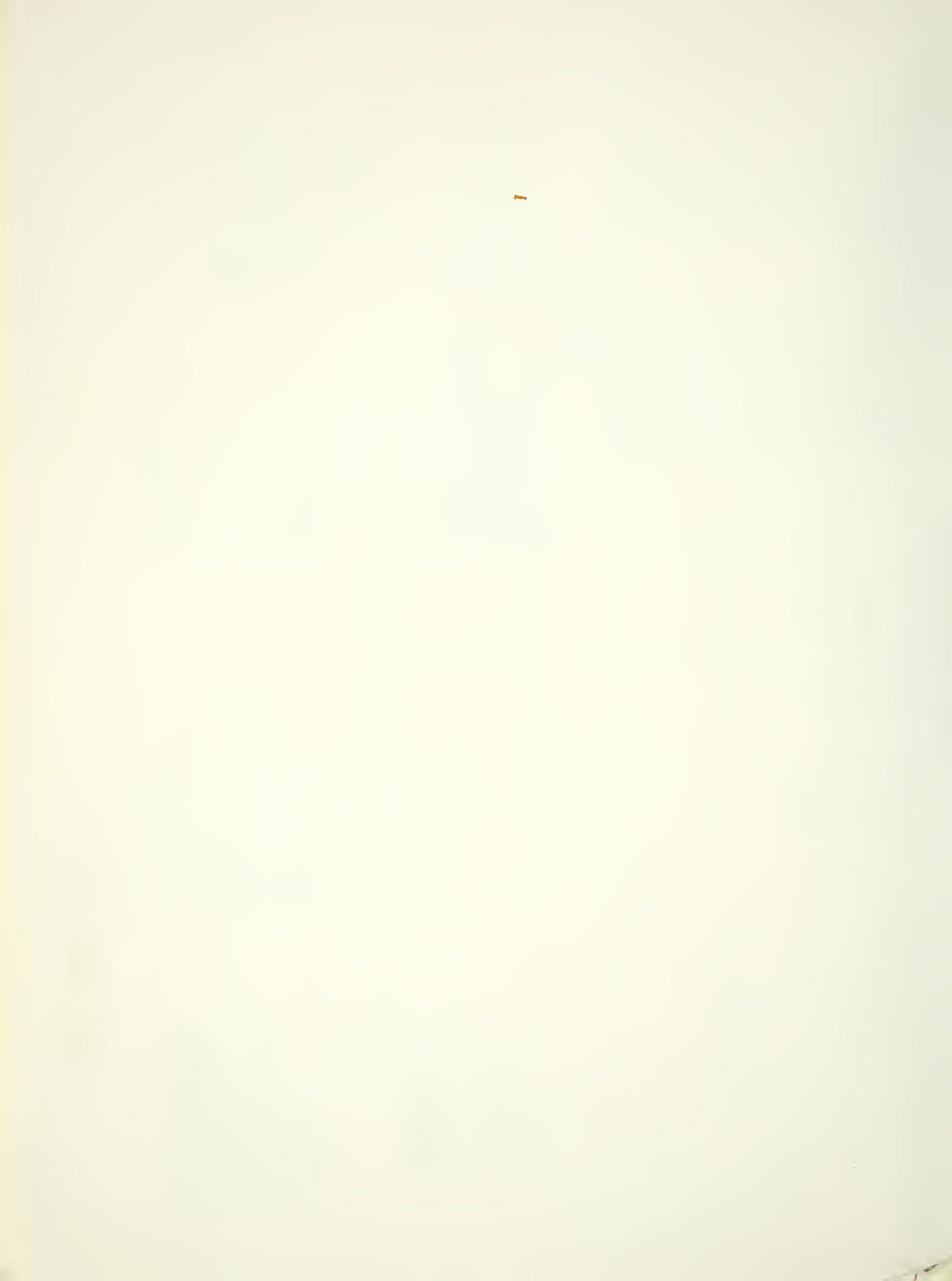
National Science Resources Center  
 Office of the Committee for a  
 Wider Audience  
 Office of Conference Services  
 Office of Elementary and Secondary  
 Education  
 Office of Folklife Programs  
 Office of Interdisciplinary  
 Studies  
 Office of Public Affairs  
 Office of Telecommunications  
 Smithsonian Institution Press  
 Smithsonian Magazine  
 Air and Space Magazine  
 Visitors Information and Associates  
 Reception Center

## Assistant Secretary for EXTERNAL AFFAIRS

Office of Membership and  
 Development  
 Institutional Advancement  
 Office of Congressional Relations  
 Office of International Relations  
 Office of Special Events  
 Smithsonian National Associate  
 Program  
 Smithsonian Resident Associate  
 Program

• Secretary's Management Committee  
 •• The assistant secretaries for research and museums collaborate in the  
 oversight of scholarly and preservation activities in these bureaus and offices.





SMITHSONIAN INSTITUTION

FISCAL YEAR 1990 ESTIMATES OF APPROPRIATIONS

TABLE OF CONTENTS

	<u>PAGE</u>
ORGANIZATION OF THE SMITHSONIAN INSTITUTION	
INTRODUCTION . . . . .	1
FY 1990 BUDGET HIGHLIGHTS. . . . .	2
MANAGEMENT IMPROVEMENT ACTIVITIES. . . . .	12
NONAPPROPRIATED SOURCES OF FUNDING . . . . .	15
SALARIES AND EXPENSES	
Summary Tables. . . . .	19
Special Employment Initiatives. . . . .	23
Uncontrollable Increases. . . . .	26
<u>Research</u>	
Office of the Assistant Secretary. . . . .	33
Smithsonian Astrophysical Observatory. . . . .	36
Smithsonian Tropical Research Institute. . . . .	45
Smithsonian Environmental Research Center. . . . .	51
National Zoological Park . . . . .	55
Smithsonian Institution Archives . . . . .	64
Smithsonian Institution Libraries. . . . .	66
Major Scientific Instrumentation . . . . .	72
<u>Museums</u>	
Office of the Assistant Secretary. . . . .	79
National Museum of Natural History/Museum of Man . . . . .	82
National Air and Space Museum. . . . .	88
National Museum of American History. . . . .	97
National Museum of American Art. . . . .	104
National Portrait Gallery. . . . .	110
Hirshhorn Museum and Sculpture Garden. . . . .	118
Arthur M. Sackler Gallery/Freer Gallery of Art . . . . .	122
Archives of American Art . . . . .	130
Cooper-Hewitt Museum . . . . .	133
National Museum of African Art . . . . .	138
Anacostia Museum . . . . .	144
Conservation Analytical Laboratory . . . . .	150
Office of Exhibits Central . . . . .	156
Smithsonian Traveling Exhibition Service . . . . .	159

Public Service

Office of the Assistant Secretary. . . . .	163
Smithsonian Institution Press. . . . .	169

<u>International Activities</u> . . . . .	173
---	-----

Special Programs

American Studies and Folklife Programs . . . . .	179
International Environmental Science Program. . . . .	183
Academic and Educational Programs. . . . .	190
Museum Support Center. . . . .	197

<u>Administration</u> . . . . .	203
---------------------------------	-----

Facilities Services

Office of Design and Construction. . . . .	213
Office of Protection Services. . . . .	216
Office of Plant Services . . . . .	220

## FACILITIES PLANNING, RENOVATION, RESTORATION, AND CONSTRUCTION

Construction and Improvements, National Zoological Park . . . . .	225
Repair and Restoration of Building. . . . .	229
--Major Capital Renewal . . . . .	231
--Repairs, Restoration and Code Compliance. . . . .	233
--Administration of Repair and Restoration Program. . . . .	236
--Detail of FY 1990 Request by Building . . . . .	238
Construction. . . . .	243
--General Post Office Building. . . . .	243
--Smithsonian Tropical Research Institute . . . . .	244
--Construction Planning . . . . .	248
--Minor Construction, Alterations and Modifications . . . . .	249

## APPENDIX

Visitors to Smithsonian, FY 1984 - FY 1988. . . . .	255
Columbus Quincentenary. . . . .	256
Special Foreign Currency Program. . . . .	259
Smithsonian Institution, Financial Summary, FY 1988 - FY 1990 . . . . .	262
Smithsonian Institution Authorization Citations . . . . .	263
Adjustments to FY 1989 Appropriation. . . . .	270





SMITHSONIAN INSTITUTION  
FY 1990 BUDGET REQUEST  
(\$000's)

<u>APPROPRIATION</u> <u>ACCOUNT</u>	<u>FY 1989</u> <u>APPROPRIATION</u>	<u>FY 1990</u> <u>REQUEST</u>
Salaries and Expenses	\$ 210,034	\$ 225,561
Instrumentation	1,206	2,176
Repair and Restoration	20,735	26,653
Construction	8,655	10,000
Zoo Construction	<u>5,305</u>	<u>6,500</u>
 TOTAL	 \$ 245,935	 \$ 270,890

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INTRODUCTION

Centered on the Mall in Washington, D.C., the Smithsonian Institution operates major facilities and activities throughout the country and overseas. It is one of the world's leading research centers and encompasses the world's largest museum complex. Each year it attracts millions of visitors to its museums, galleries, and zoological park. Many others also view the annual Folklife Festival and Smithsonian traveling exhibitions, which appear across the United States and abroad. As custodian of the National Collections, the Smithsonian possesses more than 134 million art objects, natural history specimens, and artifacts. The Institution displays many of the items in these collections for the enjoyment and education of visitors. These items are also available for research by the staff of the Institution and by hundreds of visiting students, scientists, and historians each year. Other significant study efforts draw their data and results directly from terrestrial, marine, and astrophysical observations at various Smithsonian installations.

The Smithsonian complex presently consists of 13 exhibition buildings on and near the Mall in Washington, D.C. and in New York City in the fields of science, history, technology, and art; a zoological park in Washington, D.C. and an animal conservation and research center near Front Royal, Virginia; the Anacostia Museum, which performs research and exhibit activities in a low income area of the city in cooperation with the community; a preservation, storage, and air and spacecraft display facility at Suitland, Maryland; two natural preserves, in Panama and on the Chesapeake Bay; an oceanographic research facility at Link Port, Florida; astrophysical stations in Massachusetts and Arizona; and supporting administrative, laboratory, and storage areas.

## FY 1990 BUDGET HIGHLIGHTS

Changes to budget formulation procedures adopted last year integrated and strengthened the Institution's internal planning and budgeting processes. The Smithsonian's better coordinated, more comprehensive planning and budget process should lead to greater efficiency and effectiveness of resource allocation decisions. The following principal steps of this process preceded decisions on the Institution's FY 1990 planning and budget priorities:

- Bureau and office directors submitted to members of the Secretary's Management Committee their operational plans and priorities for the next five years;
- Management Committee members assessed these plans relative to Institutional priorities and held meetings with bureau and office directors to explore pertinent management and resource issues arising from these plans;
- Management Committee members provided written feedback to bureaus and offices on plans and priorities and further planning guidance;
- The Management Committee reoriented the Institution's "Statement of Purpose and Goals" (Exhibit 1) and refined its management and program "Areas of Emphasis" (Exhibit 2) and reissued them to bureaus and offices to guide FY 1990 budget formulation;
- Bureaus and offices prepared FY 1990 budget requests; and
- The Secretary's Management Committee determined funding priorities based on the "Areas of Emphasis."

### FY 1990 Budget Overview

The Smithsonian Institution's FY 1990 budget request for all accounts totals \$270.9 million. The Institution's request is essentially a "current service" budget, extending baseline costs for existing programs with technical adjustments for increased operating costs. In addition, as in the FY 1989 budget, the Smithsonian's FY 1990 budget again places emphasis on elevating the appropriation for the Repair and Restoration of Buildings account. The Institution must continue to eliminate the substantial backlog of deferred maintenance and repairs in its various facilities. Following are more specific highlights of the FY 1990 budget request for each of the Institution's four appropriation accounts.

### Salaries and Expenses

The Salaries and Expenses (S&E) request totals \$227.7 million and 4,330 work-years. This represents an increase of \$16.5 million and 98 workyears over the FY 1989 appropriation.

The S&E request includes funds to cover basic "uncontrollable" cost increases for health insurance; Federal Employee Retirement System (FERS); the full-year cost of new FY 1989 positions and the new pay scale for guards; rent; and water and sewer payments to the District of Columbia.

The Smithsonian Institution's FY 1990 budget also allocates a portion of its "current services" funding to cover the annualized January, 1989, pay raise. Unlike budgetary allowances in prior years, which have directly funded the full-year cost of



the previous year's pay raise as a technical adjustment to baseline costs, the FY 1990 allowance did not cover the cost of the January, 1989, pay raise. Executive budget formulation policy mandated that all federal agencies absorb this cost permanently. The Institution elected to apply the additional dollars in the FY 1990 allowance for inflation of non-personnel objects to cover fully the cost of the pay raise. In the absence of this reallocation, bureaus would have to hold extended personnel vacancies or in any case otherwise curtail expenditures for nonpersonnel items. Moreover, the impact of absorbing the cost of the pay raise would have been disproportionate among bureaus, depending upon the extent to which their operating budgets are personnel intensive.

Consistent with the "current services" budget philosophy, the FY 1990 request will enable the Astrophysical Observatory to continue two major scientific instrumentation projects initiated in FY 1988 and 1989. The Smithsonian Astrophysical Observatory is constructing a submillimeter telescope array. This instrument will allow scientists to study more effectively the formation of stars and planetary systems and the puzzling processes taking place in the cores of galaxies and quasars. SAO is also converting its Multiple Mirror Telescope to a telescope with a single 6.5-meter diameter mirror. This instrument will enable scientists to gather data on objects much fainter than is currently possible and study more than twice as much of the universe than with the present instrument.

Smithsonian management has also expanded efforts to achieve cultural and ethnic diversity in its professional staff. A more diverse professional staff will shape future Smithsonian programs and exhibitions to reflect more accurately the Nation's cultural and ethnic composition. The Institution has identified 22 qualified candidates and has already appointed some of them to temporary positions. The budget includes additional resources for the full-year costs of these appointees in new permanent positions. These new staff members will represent a significant new cadre of ethnically and culturally diverse professional staff members within the Institution.

Finally, the Smithsonian requests funds to strengthen financial management. A proposed new accounting system will replace the current 20-year-old-system. The requested funding will pay costs to install new general ledger and accounts payable programs in FY 1990. The Institution will be able to provide more reliable financial reports for internal and external audits, thus improving financial accountability.

### Repair and Restoration

The Smithsonian Institution is requesting \$26,653,000 for its Repair and Restoration of Buildings (R&R) account. First, \$13,625,000 is for the Major Capital Renewal program to replace major building systems that are approaching the end of their useful lives. In addition, the Institution requests \$13,028,000 for Repair, Restoration and Code Compliance projects. Requested amounts for these two subaccounts will allow the Smithsonian to continue major restoration work and to reduce the backlog of deferred maintenance and repair projects that have accumulated in recent years as the result of inadequate levels of funding. In acknowledgement of this need, Congress substantially increased the Institution's funding for the Restoration and Renovation of buildings account in the last few years. The Institution is seeking a further expansion of this program in FY 1990. Inspections thus far completed by the Institution of its various facilities indicate that the cost of required repair and restoration work totals approximately \$197 million. The Institution will complete its annual update of the backlog estimate in February, 1989.

## Construction

For the Construction account, the Institution requests a total of \$10,000,000. This request includes funds for the design of renovations of the historic Old General Post Office Building (\$1,750,000) and for the Galeta/Atlantic laboratories and dormitory at the Tropical Research Institute (\$3,480,000). The Smithsonian seeks funds totaling \$4,040,000 for Alterations and Modifications to facilities, work that is required to increase the functionality of these facilities based on new or different program use. Finally, the Institution requests \$730,000 for construction planning for future projects.

## Construction and Improvements, National Zoological Park

The request for the Construction and Improvements, National Zoological Park account is \$6,500,000. This amount includes \$1,400,000 for the highest priority repair and renovation projects at Rock Creek Park and \$600,000 for the highest priority projects at Front Royal. The remaining \$4,500,000 requested is for the Amazonia exhibit.

## EXHIBIT 1

### SMITHSONIAN INSTITUTION

#### Statement of Purpose

The Smithsonian Institution was created by Act of Congress in 1846 to carry out the terms of the will of James Smithson of England, who bequeathed his entire estate in 1826 to the United States of America "to found at Washington, under the name of Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men."

Joseph Henry, the first Secretary, in his efforts to give direction to activities of the fledgling Institution, commented on Smithson's will in his annual report for 1864:

"He evidently did not intend by these precise terms to found a library or a mere museum for the diffusion of popular information to a limited community, but a cosmopolitan establishment, to increase the Sum of human knowledge and to diffuse this to every part of the civilized world. No other interpretation of the will is either in accordance with the terms employed or with the character and habits of the founder. The Increase of human knowledge, by which we must understand additions to its sum, would be of little value without its diffusion, and to limit the latter to one city, or even to one country, would be an invidious restriction of the term Men."

Over the course of its 142-year history, and under the direction of succeeding Secretaries, the Institution has evolved into an eminent research center and the world's largest museum complex. In service to all mankind, its activities span the globe and are devoted to research, museology, and public education in the arts, sciences, and history.

The Smithsonian is a unique establishment which is both publicly supported and privately endowed, and whose governance is vested in an independent Board of Regents composed of federal officials, members of Congress, and private citizens. Donations from both the public and private sector increase its collections, and continuing additions to its trust funds expand and nourish the Institution's usefulness. Appropriations by Congress provide federal support for the Smithsonian's far-reaching services to the public. Annually hundreds of thousands of service hours are provided to the Institution by dedicated volunteers.

The Smithsonian conducts a wide range of programs in carrying out its broad goal of increasing and diffusing knowledge. One of its basic commitments is the conduct of original research in many fields. Another is the selective acquisition, management, care, exhibition, and security of collections that are also among the primary objects of its research. The Institution's holdings are a trust responsibility and serve as important assets for future generations. Related responsibilities include the maintenance of its buildings, facilities, and natural areas in Washington and other locations around the world.

In seeking to study and understand subjects of world importance, the Smithsonian participates in joint ventures with other organizations in the United States and on every continent. Fundamental data are assembled for use by planners and research workers in other organizations, both government and private, national and international in scope. Scientific, historical and art studies, which enhance human knowledge of the natural and cultural worlds and contribute to societal growth, are major endeavors. The results of the Institution's varied activities are disseminated to racially, ethnically, culturally, and economically diverse audiences through exhibitions, publications and other public media programs.

Most important to fulfilling the basic purpose of its founding benefactor, the Institution places the highest priority on achieving quality in the conduct of its activities while making the most effective use of available resources.



## EXHIBIT 2

### SMITHSONIAN INSTITUTION

#### Goals of the Institution

The Institution seeks to achieve its basic mission to Increase and diffuse knowledge in the following ways:

- By pursuing research, collections management, exhibitions, publications, and other program activities devoted to helping explain -- for a wide range of audiences, and through the use of a wide range of media -- the present state of understanding of diverse fields of the arts and sciences as well as related problems or issues of contemporary importance.
- By giving special emphasis to exhibitions and other programs that will increase participation by culturally diverse communities, minorities, handicapped persons, senior citizens, and other specialized groups.
- By providing research, curatorial, and professional leadership and expertise of the highest quality, through emphasis on excellence of the staff and through maintaining and improving technical assistance, fellowship programs, equipment, and facilities.
- By promoting joint research, collections management, museum education, exhibition, and other interpretative programs with other domestic and foreign academic, research, and museum enterprises through a sharing of knowledge, expertise, exhibitions, collections, facilities and other resources.
- For the sake of future generations of scholars and visitors, by careful attention to the acquisition, care and preservation of collections and institutional facilities that house them, especially as related to protection, inventory, storage, building maintenance, equipping activities, and renovation of exhibit and other public areas.

- By dedicating research, exhibition, publication and other programmatic efforts to the long-term need for conservation and improvement of our natural and human resources, and drawing attention to the special responsibility each generation has to its successors.
  
- By maintaining management, administrative, and support services to meet program needs, by fostering strong internal financial and other management information systems and controls, by periodic assessments of current programs and support activities and related operating practices and procedures, and by orderly planning for new and renovated facilities for purposes of conducting research, collections management, education, and public related programs.

## EXHIBIT 3

### SMITHSONIAN INSTITUTION

#### Areas of Emphasis

#### A. Management Priorities.

- Endeavor to maintain effective communications between central and bureau management, encourage Institution-wide communications channels to permit new ideas for program and operating improvements to surface from all staff, and expand cooperative program efforts among bureaus with common interests.
- Continue efforts to improve staff quality, with particular emphasis on equal employment and affirmative action initiatives, by providing new opportunities for cross training among various offices, encouraging completion of high school education and/or advanced degrees, and supporting special training conducted by the bureaus and offices of the Institution.
- Critically evaluate all programs and support activities for purposes of discontinuing those that have outlived their usefulness or divesting them to other institutions, improving the quality of program products and delivery of services, and redirecting resources to more important efforts. Elevate management's use of information on spending and resource distribution patterns to facilitate analysis of relative resource needs.

#### B. Research and Research Support: Collection and Non-Collection Based.

- Enhance the Institution's overall scholarly environment by providing opportunities for scholarship through a variety of internal competitive programs, and encouragement in seeking outside support and joint programs, appointments, and cooperative efforts with other institutions.
- Increase bureau flexibility and responsibility for development efforts directed at museum and research initiatives in art, history and science areas.



- Provide for orderly planning and commitments for research instrumentation and facility development (STRI plan, SAO Whipple base camp, MMT conversion, submillimeter telescope).
- Fortify and balance biological and biodiversity research and associated technical support, especially among taxonomy, systematics, molecular biology, species propagation and other environmental areas of investigation.
- Recognize and promote generic museum issues as appropriate areas of academic pursuit and research, including, but not limited to, definitions of museum learning, advanced techniques in collection management, conservation, evaluation tools and experimentation in exhibition techniques, and the history and philosophy of museums.

C. Museum Management and Public Services.

- Continue to strengthen the physical care and management of collections, and related automated information systems for research and accountability;
- Produce and reinterpret exhibitions so that they appeal, enfranchise, and are understood by the broadest possible audience.
- Re-examine and change the exhibition process so that a team approach is implemented, systems of approval are streamlined and costs of exhibition development and production are reduced.
- Enhance visitor experiences and services based on researched demographics and needs.
- Examine and improve the balance of public programs as they relate to minorities, particularly Blacks, American Indians and peoples of Hispanic, Near Eastern and Far Eastern origins.
- Promote greater public understanding of other cultures, especially through the Columbus Quincentenary program, in order to provide a long term and lasting foundation for encouraging international cooperation and scholarly ex-

change with Latin America. Other areas of particular Institutional interest include the pursuit of international cultural understanding with the Near and Far East and the Soviet Union.

D. Facilities.

- Correct the backlog of deferred building maintenance and strengthen preventive maintenance programs. Accelerate renovation of exhibition space, especially with regard to opportunities for refurbishment of exhibitions in the NMNH. Continue with initial equipping of the Museum Support Center.
- Examine and pursue orderly scheduling and development of major renovations and new construction projects; develop an in-house facilities planning capability and review process that will translate institutional program objectives into a long range plan for major new facility needs, priorities, phasing and their costs, including the impact on annual operating expenses.

E. Administration.

- In order to successfully accomplish institutional program goals, alleviate operating and funding deficiencies in protection and plant services, safety and environmental programs and accounting, personnel and procurement activities.
- Investigate the costs of providing various services through contract arrangements, rather than through in-house channels and continue to undertake other appropriate management improvements studies.

F. General Development.

- Continue to examine and consider various realistic ways to increase basic trust resources of the Institution, including a general capital campaign, cultivation of donors, International markets, alternative investments, and expanded use of volunteers where appropriate.
- Examine and continue to pursue new product development, new auxiliary enterprise opportunities, and opportunities for collaboration that may exist among core revenue-producing programs.

## MANAGEMENT IMPROVEMENT ACTIVITIES

Consistent with the President's Management Improvement Program, the Institution has undertaken a number of activities to increase the efficiency and effectiveness of its operations.

### Credit Management

Debt collection from outside persons or businesses has not been a significant problem at the Institution. In the spirit of the President's goals however, the Institution has taken actions to reduce the level of outstanding travel advances to employees, inasmuch as these constitute interest-free loans to them. Over the past three years the Institution has reduced the level of such advances from \$597,350 (1,722 items; 12 percent under 30 days) to \$366,934 (626 items; 55 percent under 30 days). The Institution has also tightened its procedures for denying further travel advances to those employees who haven't accounted for previous travel funds and to require them to submit accounts within ten working days of their return.

### Financial Management

The Office of Financial Management and Planning (OFMP) has coordinated an effort to comprehensively define the Institution's requirements for a financial information system. These criteria indicate that this system must meet the needs of a decentralized organization with: a centralized support operation; a variety of funding sources; and a high volume procurement/payment process. The system must also allow better access to and delivery of financial information throughout the Institution. OFMP has reviewed several Federal and commercial systems; OFMP has tested a prototype to determine its feasibility for the Institution.

The Office of Planning and Budget (OPB) last year implemented the first phase of a new automated budget process, which it integrated with the planning process. Initial automation efforts have:

- increased efficiency in assembling all of the financial data components of the budget submissions to OMB and the Congress;
- increased the Office's access to program and financial information for analysis and more effective decision-making; and
- strengthened the relationship between the short- and long-term planning processes.

When the Institution implements its new financial information system, it can use OPB's automated budget and planning system as one of its modules.

In FY 1988, OPB expanded its use of automation in the budget formulation process by implementing more decentralized, standard wordprocessing procedures. These new procedures employ a common software for the production and assembly of narrative components of the budget justifications submitted by the Institution's various bureaus and offices. The new procedures reduce duplication of typing effort, minimize error, and save time.

OPB also has completed the initial planning phase for a new Personnel Cost Projection System and expects completion of the system in mid-1989. The new system will be user-friendly, rely on personal computers, have position management features, and be capable of projecting various categories of personnel costs. The new system will facilitate planning and managing this major category of expenses.

Implicit in these improvements is the transition from the obsolete Honeywell mainframe computer. This change will provide access to a wider range of off-the-shelf software packages, reduce the need for costly customizing of software, and thus save programming resources.

The Smithsonian Institution's internal controls program embodies the principles outlined in Office of Management and Budget (OMB) Circular A-123, with an Internal Controls Steering Committee established in 1983 to oversee a formal internal controls and review effort which the Management Analysis Office (MAO) conducts on a cyclical basis. MAO, assisted by the Office of Audits and Investigations, monitors and reports to the Committee. The 1988 review is currently under way.

#### Productivity Improvement

The Office of Protection Services (OPS) annually schedules security surveys of Smithsonian units and activities as part of a planned program, with additional reviews added as the need arises. In FY 1988, OPS conducted a security survey of the National Numismatics Collection in the National Museum of American History. This survey assessed physical security requirements of related storage and exhibit areas along with access procedures for visitors, including researchers, collectors, and other interested people.

The need for cost-effective facilities restoration, renovation, and preservation led to a more comprehensive building inspection program in 1987. The Institution's Office of Plant Services (OPlantS) conducts an annual inspection to identify and document physical plant needs essential for improved facilities planning. As OPlantS further documents existing discrepancies, the inspection program will include the projection of operational life cycles for building equipment systems and other major components, such as roofs and facades. OPlantS will use this information for a scheduled program to meet replacement and maintenance requirements.

An assessment of Smithsonian international programs and activities, including oversight and management, has led the Institution to augment its international efforts. An International Activities Council (IAC) was formed in 1988. The IAC is composed of the assistant secretaries for research, museums, public service, and external affairs. It exercises more comprehensive and coordinated oversight of international programs and provides policy guidance for the Smithsonian's International Center. The IAC also oversees the newly reorganized programs and units of the former Directorate of International Activities.

The Office of Personnel Administration requested and received delegated examining authority from the U.S Office of Personnel Management for 15 core occupations important to the Institution's work. This delegation will enable the Smithsonian to target its recruitment efforts and hire qualified applicants more quickly. Beginning in FY 1989, the National Academy of Public Administration will undertake a review of the Institution's personnel operations.



## Procurement Management

The Office of Procurement and Property Management (OPPM) conducted an initial review of the new, simplified small (under \$1,000) purchasing system to determine propriety, cost-effectiveness, and adherence to regulations and procedures. This review and critique of the exercise of delegated authority covered the major bureaus which account for the bulk of dollar expenditures. The Office of Audits and Investigations determined that overall procedures were proper and that sufficient internal controls exist to preclude waste, fraud, and abuse. The Procurement Executive continued to ensure implementation of the policy directives of the Office of Federal Procurement Policy (OFPP) and to coordinate planning and scheduling of high dollar procurements. OPPM also updated handbooks and other internal publications to ensure proper document flow and full compliance with procedures.

## Privatization

The Institution observes the requirement, outlined in OMB Circular A-76, that agencies rely upon commercial sources to supply needed products and services. Each year the Management Analysis Office undertakes two studies of Smithsonian activities to assess whether the Institution should continue to provide selected services internally or whether it should contract for these services. So far, these studies have covered grounds maintenance, elevator and escalator maintenance, and the activities of the Office of Exhibits Central. This year MAO will complete a review of building custodial services, along with scheduled assessments of the Institution's guard force, paint shop operations, and selected fulfillment operations.

## NONAPPROPRIATED SOURCES OF FUNDING

In addition to the support provided by Federal appropriations, the Institution receives nonappropriated funds to expand and enrich its programs. The Institution presents nonappropriated fund activities (Trust funds) along with the Federal budget request to provide an overview of all uses of funds for each Smithsonian bureau. The Smithsonian must emphasize the estimates for Trust funds are subject to: the uncertainty of donations, grants, and contracts with the Institution; fluctuations in visitor attendance; and the volatility of the economy directly affecting restaurant, mail order and shop revenues, Associates' memberships, and other auxiliary activities. The Institution's gross operating revenue, less the expenses of the auxiliary activities, represents the net operating revenue available for programmatic and other worthwhile purposes.

The FY 1989 Trust budget comprises approximately 26 percent of net operating revenues. These revenues include grants and contracts received from government agencies. The Smithsonian expects grants and contracts will total nearly \$24 million in FY 1989. The Institution anticipates gross Trust fund revenues, excluding government grants and contracts, to exceed \$200 million in FY 1989. However, the Institution projects net income to be in the \$54 million to \$55 million range (including \$19 million for restricted purposes).

Smithsonian Trust funds include unrestricted funds, restricted funds, and government grants and contracts, and the Institution applies them in the following manner:

### Unrestricted Funds

General - The sources of general unrestricted funds are investment income; unrestricted endowment income; net proceeds from museum shops, mail order division and food service concessions; sales of Smithsonian books, records, and other products based on designs and objects in the collections; the Resident Associate and National Associate Programs (including the Smithsonian and Air and Space magazines); and overhead recovery on grants and contracts the Smithsonian receives and from internal administrative fees charged to other Trust-funded activities. Overhead recovery is the principal source of Trust support for central management and administrative service units of the Institution, such as legal counsel, accounting, personnel, procurement, and budget. General funds also support various activities, such as the Visitor Information and Associates' Reception Center, the Cooper-Hewitt Museum, Smithsonian Tropical Research Institute, Office of Telecommunications, Office of Folklife Programs, and a variety of Institutional and bureau-based programs. The Board of Regents approves these allotments.

Special Purpose - These funds arise from revenue-producing activities operated by various bureaus and offices. The two largest of these activities are the Theater and Spacearium operations of the National Air and Space Museum. Special Purpose funds also include: miscellaneous revenues from the sale of posters, exhibit brochures, and publications; tuition reimbursement from universities; the museums' share of sales in the restaurant and museum shops; membership and admission fees; exhibit rental income; and investment income from current fund balances.

In FY 1979, the Board of Regents approved the annual transfer of General funds to Special Purpose funds for certain programs previously financed through Federal appropriations. These include the Institution's various fellowship programs (FY 1989 allotments totaling \$3.4 million). The Institution also uses Special Purpose funds to make awards under its Collections Acquisition, Scholarly Studies, and Educational

Outreach Program. Of the total \$4.75 million approved for the Program in FY 1989, the Smithsonian made \$1.75 million available to purchase exceptional objects important to the collections. In FY 1988, the National Museum of American History acquired the DeVincent sheet music collection, including illustrations that depict cultural and social history. The National Museum of American Art purchased the painting, Yliaster (Paracelsus), by Marsden Hartley. The Hirshhorn Museum and Sculpture Garden acquired Ancient Wall, a Phillip Guston painting. In addition, the Renwick purchased an art deco fire screen, its first acquisition through the Program.

The Program has designated \$2.45 million for innovative scholarly research projects which by definition or because of their schedule do not fit within the Federal budget process. These include multi-disciplinary research projects conducted within and between bureaus and projects that have received external funds requiring matching Trust support. For example, biologists at the National Museum of Natural History and Tropical Research Institute are collaborating to study bee biology in two Mexican biospheres. The study includes the basic biology of the species, as well as its response to the introduction of Africanized honey bees. Results of this study will provide baseline data to determine the impact of the invading species.

The Program awarded grants to the National Museum of American Art and the Conservation Analytical Laboratory to utilize neutron-induced autoradiography to study the history of various paintings. Also, scientists at the Smithsonian Astrophysical Observatory are testing a new technique for faint object astronomy with long baseline stellar interferometers. This technique will make possible ultra-precise optical astronomy of extragalactic objects from ground-based instruments.

The Institution has allocated the remaining \$550,000 of the \$4.75 million available for this Program to conduct a wide range of educational outreach programs of benefit to the public, with special focus on diverse cultural audiences. For example, the Conservation Analytical Laboratory developed a two-year project to provide a course on the analysis of Hopi yellow-firing pottery, created an internship for Hopi students, and produced video documentation on the results of the scientific analysis of the Hopi ceramics. Another grant advanced the use of interactive video technology in public education. Also, grants supported symposia and production of videos and educational materials to accompany exhibitions. In addition, the Program provided funding to prepare a select group of elementary school teachers, principals, curriculum specialists, and superintendents from throughout the U.S. to organize and lead improvement efforts in their local elementary level science programs.

In FY 1985, the Board of Regents approved an annual Trust fund allocation for the Special Exhibition Fund. The Institution has generally met the cost of exhibition programs with Federal funds, which will continue to provide the predominant financing for the Institution's overall exhibition effort. Individuals, foundations, and corporations have provided supplemental donations. Administered in the same way as the Collections Acquisition, Scholarly Studies, and Educational Outreach Program, the Special Exhibition Fund, with \$3.2 million in FY 1989, will provide funds for temporary or permanent exhibitions proposed by Smithsonian bureaus that, regardless of scale, are outstanding in terms of their educational value to the public: This Fund will give special consideration to exhibitions that approach content in imaginative ways; that allow bureaus to explore new or expand current interpretive or exhibition techniques; that are worthy but, by their nature, unlikely to attract private funds; and that are likely to reach previously under-served audiences.



One exhibition supported by this program was "King Herod's Dream: Caesarea on the Sea," which explores architectural evidence of an ancient city on the Mediterranean coast of Israel. Other exhibitions include "Crossroads of Continents," the first Soviet-North American exhibition ever organized; "Frank Lloyd Wright: In the Realm of Ideas," a traveling exhibition that explores the ideas and achievements of Frank Lloyd Wright; "Caribbean Festival Arts," which focuses on the arts of three pan-Caribbean festivals; and "Folk Art in America: Hemphill Collection."

### Restricted Funds

Restricted Trust funds include gifts, grants, and endowments from individuals, foundations, organizations, and corporations that specify the use of the donation or bequest. Generally, these funds provide support for a particular exhibit or research project. The Freer endowment is the largest restricted endowment in the Institution. The terms of the original gift and bequest strictly limit this fund to uses benefiting the Freer Gallery of Art.

### Government Grants and Contracts

Various government agencies and departments provide grants and contracts for special projects which the Smithsonian can conduct because of its expertise in a particular area of science, history, art, or education and because of its ability to respond quickly to certain needs.







SMITHSONIAN INSTITUTION

SALARIES AND EXPENSES

Summary of FY 1990 Increases

FY 1989 Appropriation	\$211,240,000
Legislated Pay Requirements	<u>5,606,000</u>
FY 1989 Base	\$216,846,000
FY 1990 Requested Increases	
Uncontrollable Increases	7,419,000
Program Increases	<u>3,472,000</u>
FY 1990 Request	\$227,737,000

SMITHSONIAN INSTITUTION  
 "SALARIES AND EXPENSES"  
 SUMMARY OF THE 1988 APPROPRIATION AND THE 1989 AND 1990 ESTIMATES

(Dollars in Thousands)  
 FTE = Full-Time Equivalent

PAGE NO.	UNIT	FY 1988 ACTUAL			FY 1989 BASE			FY 1990 ESTIMATE			ANALYSIS OF INCREASE				
		FTE	AMOUNT	APPROPRIATION*	FTE	PAY REQUIREMENT	TOTAL	FTE	AMOUNT	UNCONTROL-	FTE	LABORABLE	PROGRAM		
RESEARCH															
33	Assistant Secretary for Research	13	1,179	1,205	29	28	1,233	29	1,242	0	9	0			
36	Astrophysical Observatory	107	10,931	10,721	107	195	10,916	111	11,172	4	114	142			
45	Smithsonian Tropical Research Institute	95	5,395	5,738	125	110	5,848	127	5,664	2	47	(231)			
51	Smithsonian Environmental Research Center	30	1,491	1,418	29	24	1,442	31	1,532	2	13	77			
55	National Zoological Park	330	13,660	14,048	343	350	14,398	346	14,638	3	196	44			
64	Smithsonian Institution Archives	14	573	600	15	16	616	15	621	0	5	0			
66	Smithsonian Institution Libraries	93	5,343	5,161	101	102	5,263	102	5,338	1	39	36			
72	Major Scientific Instrumentation	0	0	1,206	0	0	1,206	0	2,176	0	0	970			
	Subtotal	682	38,572	40,097	749	825	40,922	761	42,383	12	423	1,038			
MUSEUMS															
79	Assistant Secretary for Museums	22	1,023	1,633	24	26	1,659	24	1,168	0	9	(500)			
82	National Museum of Natural History	504	24,375	26,292	570	621	26,913	584	27,573	14	334	326			
88	National Air and Space Museum	217	9,308	9,552	215	235	9,787	216	9,904	1	117	0			
97	National Museum of American History	316	14,044	14,502	334	365	14,867	340	15,666	6	157	642			
104	National Museum of American Art	117	5,229	5,464	119	121	5,585	121	5,714	2	49	80			
110	National Portrait Gallery	84	4,159	4,131	87	93	4,224	88	4,304	1	40	40			
118	Hirshhorn Museum and Sculpture Garden	72	3,443	3,457	78	74	3,531	78	3,556	0	25	0			
122	Arthur M. Sackler Gallery/Freer Gallery of Art	63	4,001	4,300	68	67	4,367	68	4,390	0	23	0			
130	Archives of American Art	19	1,099	1,101	20	25	1,126	20	1,141	0	15	0			
133	Cooper-Hewitt Museum	28	1,142	1,245	32	32	1,277	32	1,297	0	20	0			
138	National Museum of African Art	46	3,456	3,568	57	56	3,624	58	3,659	1	35	0			
144	Anacostia Museum	15	919	1,010	20	20	1,030	21	1,050	1	20	0			
150	Conservation Analytical Laboratory	37	2,533	2,519	41	49	2,568	42	2,628	1	16	44			
156	Office of Exhibits Central	47	1,880	1,900	46	47	1,947	46	1,963	0	16	0			
159	Smithsonian Traveling Exhibition Service	13	660	688	15	15	703	15	708	0	5	0			
	Subtotal	1,600	77,271	81,362	1,726	1,846	83,208	1,753	84,721	27	881	632			



PAGE NO.	UNIT	FY 1988 ACTUAL				FY 1989 BASE				FY 1990 ESTIMATE				ANALYSIS OF INCREASE			
		FTE	AMOUNT	FTE	APPROPRIATION*	LEGISLATED PAY REQUIREMENT	TOTAL	FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT	UNCONTROL-	PROGRAM		
	<b>PUBLIC SERVICE</b>																
163	Assistant Secretary for Public Service	23	1,261	23	1,298	31	1,329	25	1,450	2	10	111					
169	Smithsonian Institution Press	26	1,234	29	1,239	35	1,274	29	1,286	0	12	0					
	Subtotal	49	2,495	52	2,537	66	2,603	54	2,736	2	22	111					
173	<b>INTERNATIONAL ACTIVITIES</b>																
		7	637	7	791	9	800	8	839	1	3	36					
	<b>SPECIAL PROGRAMS</b>																
179	American Studies and Folklife Programs	10	790	9	908	15	923	10	937	1	14	0					
183	International Environmental Science Program	10	785	13	770	8	778	13	781	0	3	0					
190	Academic and Educational Programs	18	1,039	24	1,170	27	1,197	25	1,266	1	16	53					
197	Museum Support Center	32	4,426	41	4,419	36	4,455	42	4,491	1	36	0					
	Subtotal	70	7,040	87	7,267	86	7,353	90	7,475	3	69	53					
203	<b>ADMINISTRATION</b>																
		272	16,140	320	18,098	409	18,507	356	21,187	36	1,360	1,320					
	<b>FACILITIES SERVICES</b>																
213	Office of Design and Construction	37	2,165	40	2,504	63	2,567	48	2,933	8	84	282					
216	Office of Protection Services	704	20,127	751	21,088	1,836	22,924	757	23,641	6	717	0					
220	Office of Plant Services	454	36,867	500	37,496	466	37,962	503	41,822	3	3,860	0					
	Subtotal	1,195	59,159	1,291	61,088	2,365	63,453	1,308	68,396	17	4,661	282					
	<b>GRAND TOTAL</b>	3,875	201,314	4,232	211,240	5,606	216,846	4,330	227,737	98	7,419	3,472					

Note: Workyear estimates are rounded to whole workyears on all tables.

\*Reflects the distribution of centrally appropriated funds, lapse, and permanent reprogrammings. (See crosswalk on page 270.)

\*\*OMB full-time equivalent ceiling is 4,247.

SMITHSONIAN INSTITUTION

"Salaries and Expenses"

Report of Appropriation by Objects of Expense

(Dollars in thousands)

	1988 Actual	1989 BASE	FY 90 ESTIMATE	Increase 1990 over 1989
11 Personnel Compensation . . . . .	112508	124635	128406	3771
12 Personnel Benefits . . . . .	18280	21609	24292	2683
13 Benefits to Former Employees . . . . .	114	398	148	-250
21 Travel and Transportation of Persons. . . . .	1762	1892	1909	17
22 Transportation of Things . . . . .	1055	885	885	0
23 Rent, Communications, and Utilities . . . . .	18241	20366	24733	4367
24 Printing and Reproduction . . . . .	2020	1916	1946	30
25 Other Services . . . . .	23828	22119	22565	446
26 Supplies and Materials . . . . .	10469	10701	10734	33
31 Equipment . . . . .	11207	11067	10861	-206
Acquisition for Collections . . . . .	1384	1222	1222	0
32 Land and Structures . . . . .	428	11	11	0
41 Grants . . . . .	12	14	14	0
42 Insurance Claims and Indemnities . . . . .	6	11	11	0
T O T A L . . . . .	201314	216846	227737	10891

SPECIAL EMPLOYMENT INITIATIVES

Cultural And Ethnic Diversity In Professional Staff

A significant goal of the Smithsonian's research, exhibitions, and public programs is to reflect the Nation's rich cultural and ethnic diversity. A professional staff at the Institution that is itself culturally and ethnically diverse will be more sensitive to a range of viewpoints and enhance the scope and depth of the Institution's programs. To that end, the Smithsonian has periodically reviewed its staff composition to determine if it does reflect the varied work force of the Nation, and it has structured its recruitment efforts accordingly. Unfortunately, the Institution has repeatedly found that, because of slow turnover, the staff has not gained the desired diversity, particularly in the research and curatorial areas. Therefore, the Institution recently undertook initiatives to recruit individuals from a wide variety of culturally significant minority groups, either not previously represented or underrepresented in the Institution's work force.

As a result, 11 bureaus and offices have identified 22 qualified candidates, and they have already appointed some of them to temporary positions. In each instance, the Institution has acquired these new staff under competitive merit procedures. The FY 1990 budget includes a request for 21 workyears and \$884,000 for the full year costs of these appointees in new permanent positions along with 6 workyears and \$220,000 for their technical staff assistants and support costs. These new staff members will represent a significant new cadre of ethnically and culturally diverse employees within the Institution. The presence of this cadre should stimulate interest in Smithsonian employment by others and will significantly affect the context and presentation of the Institution's programs and exhibitions.

The resources to support each of these positions appear in the program segments of the budget. Each position is fully justifiable from a programmatic stand point in its own right. The Institution anticipates that this will be the only year that it will make such a special request.

<u>Unit</u>	<u>Position Title</u>	<u>FTE</u>	<u>Cost</u>
Smithsonian Tropical Research Institute	2 half-time Staff Scientists and support costs	1	\$45,000
Smithsonian Environmental Research Center	Biologist	1	52,000
	Support Staff	1	25,000
National Zoological Park	Conservation Biologist	1	44,000
Smithsonian Libraries	Reference Librarian	1	36,000
Natural History Museum	Botanists	2	72,000
	Marine Biologist	1	36,000
	Anthropologist	1	36,000
	Geologist	1	36,000
	Archeologist	1	44,000
	Support Staff	3	102,000

American History Museum	Curators	3	142,000
	Support Staff	2	70,000
National Museum of American Art	Education Specialist	1	36,000
	Curator	1	44,000
National Portrait Gallery	Public Program Coordinator and support costs	1	40,000
Conservation Analytical Laboratory	Art Historian	1	44,000
Interdisciplinary Studies	Program Specialist and support costs	1	53,000
International Center	Program Specialist	1	36,000
Assistant Secretary for Public Service	Media Specialist and support costs	1	67,000
	Director, Committee for a Wider Audience	1	44,000
	Total Professional Staff	21	\$884,000
	Total Technical Staff and Support Costs	6	220,000

### Upward Mobility

To complement the above initiative, the Institution also plans to offer a professional development program for current junior Smithsonian staff. Under this program, bureaus and offices will identify staffing needs at the professional levels in areas which are underrepresented by minorities and women. The Institution will advertise approved positions as competitive "upward mobility" opportunities for Smithsonian staff.

Successful candidates will enter a career track position at a lower grade than the targeted senior professional level. The bureau or office will receive the full personnel compensation allotment for the eventual targeted grade. The difference in salary levels will cover the cost of technical training or formal education. For example, in the case of a grade 7 (\$25,000) targeted for an eventual grade 11 (\$38,000) position, there would be \$13,000 available for training or formal education in the first year. As the trainee advances, the training fund amount available through the bureau/office decreases.

The Institution will initiate this companion program with a total of ten targeted positions - five targeted at grade 11 and five at grade 12. The total requirement for salary/benefit funds under this arrangement is \$415,000. The Institution is also requesting a small central training fund of \$35,000, for a total of \$450,000. This central fund will supplement the various training plans if training funds for

particular targeted positions are inadequate. The Office of Equal Opportunity will oversee allocations from the central fund. As the Institution gains experience with the program, this \$35,000 will offer a small source of central supplemental funding for other upward mobility training opportunities and/or needs.



FY 1990 UNCONTROLLABLE INCREASES

The Institution seeks funds to pay costs that are beyond its control. These costs result from: annualizing of the cost of the following--January 1989 legislative pay raise, special salary rates for guards, and the cost of new FY 1989 positions; higher rental costs; and other factors. A \$250,000 reduction in the amount contained in the FY 1989 budget for unemployment compensation offsets a portion of these costs. The Institution requests \$7,419,000 for the following uncontrollable costs:

Salary and Related Costs

--Annualization of Pay Raises	\$1,869,000
--Annualization of New FY 1989 Positions	981,000
--Health Insurance Benefits	476,000
--Federal Employees Retirement System	730,000
--Unemployment Compensation	<u>(250,000)</u>
Total, Salary and Related Costs	\$3,806,000
Utilities, Postage and Communications	\$3,347,000
Rental Space	<u>\$ 266,000</u>
Grand Total, Uncontrollable Increases	<u>\$7,419,000</u>

SALARY AND RELATED COSTS - The Institution requests a net amount of \$3,806,000 for the projected higher salary and benefits costs in FY 1990 for FY 1989 staff. The Smithsonian requires funds in FY 1990 to cover the annualization of: the January, 1989 legislated pay raise (\$1,438,000); the special salary increase for guards (\$431,000); and partial-year funding of new positions approved in FY 1989 (\$981,000). In FY 1990, the Institution also requires funds to cover the increased costs for employee health insurance (\$476,000) and increased costs for Federal Employees Retirement. These requested increases are partially offset by a reduction of \$250,000 which reflects base funds exceeding the projected cost of unemployment compensation.

Annualization of Pay Raises - The Smithsonian requests \$1,869,000 to annualize the cost of General Schedule, Merit Pay, and Wage Pay increases effective in FY 1989; and also to annualize the proposed special rate increase for guards. The Institution will absorb the partial-year costs associated with these raises in FY 1989.

-- General Schedule, Merit Pay, Executive Schedule and Wage Board - In accordance with the pay plan established by the President under Section 5305 of Title 5, United States Code, annual salaries for Smithsonian General Schedule, Merit Pay and Executive level employees increased on January 1, 1989. Prevailing practices required a Wage Finding authority to review Wage Pay scales in each geographic area. The pay plan also provides that Wage Board employees receive the same pay increases as General Schedule employees. The Institution requires an amount of \$1,438,000 to provide full-year funding in FY 1990 for these legislated pay increases granted in FY 1989.

-- Special Salary Rates for Guards - The National Gallery of Art, Department of Defense and Smithsonian Institution have requested the United States Office of Personnel Management to approve special salary rates for security guards

in grades 3, 4, 5 and 6 in the Washington, D.C. metropolitan area. For FY 1990, the Smithsonian requests \$431,000 to annualize the cost of upgrading these positions.

Annualization of New FY 1989 Positions - The Institution requires an amount of 34 workyears and \$981,000 to annualize the partial-year funding of new positions approved in the FY 1989 budget. This amount represents the restoration of the funding reduced by Congress in applying a 25 percent salary lapse rate to all new FY 1989 positions.

Health Insurance Benefits - The Institution requests additional funds to cover its increased cost of employee health insurance. The cost of health benefit plans rose an average of 31 percent effective January 1988 and will rise an additional 26 percent in January 1989. In FY 1989 Congress provided the Institution \$1,673,000 to help defray these increased costs. For FY 1990, the Institution requests an additional \$476,000 to cover the full cost of health insurance increases.

Federal Employees Retirement System - The Federal Employees Retirement System (FERS) Act of 1986 (Public Law 99-335) established a new basic pension plan and a savings plan for Federal civilian employees. The Institution's FY 1989 appropriation from Congress provides a funding base of \$3,688,000 to cover the increased costs of this plan. The latest guidance from the Office of Management and Budget Bulletin 88-6 has resulted in revised estimates for FERS costs for FY 1990 and following years. Based on the revised FY 1990 estimates, the Institution requests \$730,000 for projected increased costs of FERS.

UTILITIES, POSTAGE AND COMMUNICATIONS - An FY 1989 base of \$16,756,000 is available to fund the costs of electricity, steam, gas, fuel oil, postage, and communications for nearly all Institution facilities. The Smithsonian needs an increase of \$3,347,000 in FY 1990 to cover:

- increased natural gas costs associated with an estimated 15 percent rate increase currently requested by the Washington Gas Company;
- rising costs for telephone services; and
- projected costs of direct payments to the D.C. Government for water and sewer services, to become effective in FY 1990.

The Smithsonian's projections of future utilities costs consider a variety of factors. These include:

- comparative data on actual energy consumption in previous years for each facility;
- adjustments for normal weather conditions for this geographic region based on information provided by the National Weather Service;
- actual and projected rates charged by utility companies;
- actual and projected reimbursements for utility costs from concessions, museum shops, and the Friends of the National Zoo;
- modifications to work and public spaces within facilities;
- continued energy conservation efforts in all Smithsonian buildings;
- improvements installed to heating, ventilating, and air conditioning systems and components throughout the physical plant;
- the design of new facilities; and
- projected increases in consumption caused by expanded use of computers and other equipment throughout the Institution.

The following table shows the costs and base funds available to cover the components of the Utilities account between FY 1988 and FY 1990.

ANALYSIS OF UTILITIES AND COMMUNICATIONS COSTS  
FY 1988 - FY 1990

	<u>FY 1988</u> <u>Actual</u>	<u>FY 1989</u> <u>Estimate</u>	<u>FY 1990</u> <u>Estimate</u>
<u>ELECTRICITY</u>			
<u>Use</u> - Millions of KWH	108.9	108.0	108.0
<u>Unit Cost</u> - Average per KWH	.060	.062	.065
<u>Cost</u> - \$000's	\$6,515	\$6,696	\$6,967
FY 1990 Estimated Cost			\$6,967
FY 1989 Base			\$7,274 <sup>1</sup>
Base Surplus, Electricity			\$ 307
<u>STEAM</u>			
<u>Use</u> - Millions of Pounds	208.3	209.0	209.0
<u>Unit Cost</u> - Avg. per 1,000 lbs	15.50	15.50	15.50
<u>Cost</u> - \$000's	\$3,229	\$3,239	\$3,239
FY 1990 Estimated Cost			\$3,239
FY 1989 Base			\$3,472
Base Surplus, Steam			\$ 233
<u>GAS</u>			
<u>Use</u> - Millions of Cubic Feet	1.276	1.247	1.247
<u>Unit Cost</u> - Avg. per cubic Ft.	.6017	.6415	.6415
<u>Cost</u> - \$000's	\$ 768	\$ 800	\$ 800
FY 1990 Estimated Cost			\$ 800
FY 1989 Base			\$ 713
Base Shortage, Gas			\$ 87
<u>FUEL OIL/WATER</u>			
<u>Cost</u> - \$000's	\$ 252	\$ 150	\$ 150
FY 1990 Estimated Cost			\$ 150
FY 1989 Base			\$ 150
Base Shortage, Fuel Oil/Water			\$ -0-
<u>D.C. GOVT. WATER/SEWER</u>			
<u>Cost</u> - \$000's	\$ 0	\$ 0	\$3,675
FY 1990 Estimated Cost			\$3,675
FY 1989 Base			\$ -0-
Base Shortage, D.C. Water/Sewer			\$3,675
<u>TELEPHONE</u>			
	\$3,500	\$3,700	\$3,900
FY 1990 Estimated Cost			\$3,900
FY 1989 Base			\$3,597
Base Shortage, Telephone			\$ 303



<u>POSTAGE</u>	\$1,925	\$2,000	\$1,722/2
FY 1990 Estimated Cost			\$1,722/2
FY 1989 Base			\$1,900
	Base Surplus, Postage		\$ 178
<u>TOTALS</u>	FY 1990 Estimated Cost		\$20,453
	FY 1989 Base		\$17,106/1
	FY 1990 Requested Increase		\$ 3,347

1/Reflects FY 1989 Federal base plus anticipated reimbursements in FY 1990 of \$350,000.

2/FY 1990 estimated cost of \$2,050,000 reduced by 16% (\$328,000) as directed by OMB due to proposed legislation to create a separate rate class for government mail.

Electricity - The major component of the Utilities account is electricity. Estimates consider increases in electrical consumption associated with the conversion of the former National Air and Space Museum (NASM) cafeteria to museum use, the new Mathias wing at the Smithsonian Environmental Research Center (SERC), and the new Tupper facility and dormitory under construction at the Smithsonian Tropical Research Institute (STRI). Relinquishing the Radiation Biology Laboratory (RBL) building in Rockville, Maryland and the old African Art Museum complex on Capitol Hill has offset these consumption increases for the Institution. While the Institution expects a net decrease in electrical consumption for FY 1989 and FY 1990 over FY 1988, PEPCO has requested a rate increase from the D.C. Public Service Commission for FY 1989. The FY 1990 estimates have annualized this projected rate increase. Additionally, the cost of utilities in Panama continues to rise, and this inflation accounts for part of the projected increase. However, current base funds plus anticipated reimbursements are sufficient to cover these cost increases and will result in an estimated surplus of \$307,000.

Steam - Because the actual costs of full occupancy of the Quadrangle are significantly less than previously anticipated, the Smithsonian projects a \$233,000 surplus in steam costs.

Gas - The reduced consumption projections reflect the release of the RBL facility in Rockville, Maryland and the African Art Museum Complex on Capitol Hill. However, an expected 15 percent rate increase would increase costs in FY 1989. The Washington Gas Company requested an increase from the Public Service Commission in January 1988. As a result of this anticipated rate increase, an additional \$87,000 is necessary to cover estimated gas costs in FY 1990.

Telephones - Telephone costs at the Smithsonian Tropical Research Institute continue to rise. Expanded use of automation in research and administration accounts for this increase. With the introduction of new Institutional payroll, personnel, and accounting systems planned for FY 1989 and FY 1990, the Smithsonian expects telephone costs to continue to increase as STRI ties into these systems. Additionally, costs

associated with new facilities at STRI and SERC and increased use of the FTS system also account for rising communications costs. The Institution will continue efforts to limit communications costs through increased monitoring and review of long distance calls, limited access to long distance lines to reduce the potential for abuse, and increased monitoring of telephone charges to reduce billing errors. Despite these measures, the Smithsonian will require an additional \$303,000 to enable it to meet projected communications costs in FY 1990.

Postage - Ongoing efforts to control postage costs have curtailed the cost of postage services to the Institution. Postage costs for domestic mailings are lower due to a halt in first-class package service and reduced express mail services. Also, management monitors the use of the postage indicia on Smithsonian mail. Despite these steps, postage costs continue to rise. The Institution originally projected a deficit of \$150,000 for FY 1990. The projected deficit relates in part to increased mailings for program activities and responses to public information requests, but primarily to the postal rate increases effective May 1988 for all mail classes. However, the Office of Management and Budget has advised that proposed FY 1990 legislation to create a separate rate class for government mail should reduce overall costs by 16 percent. This measure will result in an anticipated base surplus of \$178,000.

Fuel Oil/Water - The Smithsonian estimates base funds to be adequate to cover anticipated costs for FY 1990.

D.C. Government, Water/Sewer - The Institution understands that in FY 1990 the D.C. Government will begin to bill Federal agencies directly for the cost of water and sewer services. In the past, the D.C. Government's Federal appropriation covered this cost. Using cost estimates provided by the D.C. Government, the Smithsonian will need \$3,675,000 in FY 1990 to cover the cost of this service.

Energy Conservation - The Institution continues to monitor and limit all forms of energy consumption. An automated energy management system reduces peak energy demand by selectively shutting down equipment when necessary. This system, when fully installed, will monitor equipment in all buildings for fluctuations or malfunctions and alert staff to inspect for problems. Ongoing efforts also include:

- continuing the phased program of performing comprehensive building energy audits;
- renovating heating, ventilating and air conditioning, plumbing and electrical systems;
- reducing lighting levels in work and nonpublic areas;
- installing more efficient lighting fixtures;
- operating heating and air conditioning systems at the minimum level necessary to prevent damage to the collections;
- curtailing electrical consumption during nonpublic hours; and
- increasing attention to energy conservation when determining space use, modifying space, and designing new facilities.

Through the use of the Facilities Management computer system, the Smithsonian will eventually control all building lighting systems. This system turns lights on and off as use fluctuates. Automated lighting controls are now in place at the Museum of Natural History, the National Air and Space Museum, and the Quadrangle. The Smithsonian plans to install such a system for the Museum of American History in FY 1989 and in later years in other major buildings.



RENTAL SPACE - For FY 1990, the central rental account, managed by the Office of Plant Services, requires \$266,000 for uncontrollable expenses. This account provides for the Federal portion of the rental expenses for administrative and program activities located at L'Enfant Plaza, the Smithsonian Institution Service Center at 1111 North Capitol Street, the research bureaus of the Archives of American Art in New York City and Boston, Massachusetts, and storage space at the Fullerton Industrial Park in Springfield, Virginia. The amounts below reflect projected costs for rental space at these sites:

FEDERAL RENTAL PROGRAM ADMINISTERED BY THE OFFICE OF PLANT SERVICES

FY 1988 - FY 1990

(\$000's)

	FY 1988		FY 1989		FY 1990	
	Actual Cost		Estimated Cost		Estimated Cost	
	<u>Federal</u>	<u>Trust</u>	<u>Federal</u>	<u>Trust</u>	<u>Federal</u>	<u>Trust</u>
L'Enfant Plaza	\$ 396	\$959	\$ 901	\$951	\$1,029	\$994
North Capitol St.	1,005	--	950	139	1,045	125
Archives of American Art:						
- New York	81	--	155	--	160	--
- Boston	7	--	13	--	15	--
Fullerton	<u>--</u>	<u>--</u>	<u>51</u>	<u>--</u>	<u>51</u>	<u>--</u>
Total Costs	\$1,489	\$959	\$2,070	\$1,090	\$2,300	\$1,119
Base	<u>\$1,583</u>	<u>\$959</u>	<u>\$2,034</u>	<u>\$1,090</u>	<u>\$2,034</u>	<u>\$1,119</u>
Surplus/(Deficit)	\$ 94	\$ --	\$ (36)	\$ --	\$(266)	\$ --

The FY 1990 estimate for Federal rental costs for L'Enfant Plaza reflects annual cost increases specified in the lease agreement. Appropriated funds support all program space, such as the Office of Folklife Programs and the Office of Fellowships and Grants. The ratio of Federal and Trust program salary expenses determines the rental expense allocation for administrative space. The Smithsonian Institution Press also pays rent costs based on the ratio of Federal to Trust salaries, which recognizes the dual nonprofit/for-profit function of the Press, such as production of research and educational materials, government forms, manuals and reports as well as marketing books and recordings. The Institution charges "equivalent rent" to auxiliary activities, specifically Smithsonian National Associate Program, Resident Associate Program, and the Smithsonian magazine. These activities pay for the space that they occupy in non-rented Institution buildings based on the number of square feet occupied times the cost per square foot of space at L'Enfant Plaza. Payments by the auxiliary activities, including the Smithsonian Institution Press, partially offset the total rent costs for L'Enfant Plaza.

The projected rental expense for space at 1111 North Capitol Street includes the annual cost increase specified in the current lease. The aforementioned cost allocation policy on administrative and programmatic space also governs Federal/Trust apportionment of rent for this location.

The projected rental expense for the Archives of American Art represents funding requirements for its new space located in the area with a concentration of New York's

art museums and galleries. The surplus reflected for the FY 1988 Federal rent account is the result of delays in acquiring the new space.

Finally, the projected rental expense for Fullerton reflects the continuing cost of storage space approved for the Smithsonian Archives in the Institution's FY 1989 appropriation.

For FY 1990, the projected Federal share of the Central rental account is \$2,300,000. The Institution's base is \$2,034,000 in FY 1989. Therefore, the Smithsonian requires an additional amount of \$266,000 to defray space rental costs at these locations in FY 1990.

RESEARCH



OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	13	1,179	2	216	-	64	-	45	2	231
FY 1989 -Estimate	29	1,205	2	256	-	111	-	483	2	303
-Base	29	1,233								
FY 1990 Estimate	29	1,242	2	544	-	110	-	485	2	243

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	29	-	29
11 Personnel Compensation.....	666	7	673
12 Personnel Benefits.....	119	2	121
21 Travel.....	21	-	21
24 Printing & Reproduction.....	12	-	12
25 Other Services.....	319	-	319
26 Supplies & Materials.....	80	-	80
31 Equipment.....	16	-	16
<b>Total</b>	<b>1,233</b>	<b>9</b>	<b>1,242</b>

Analysis of Increase

Necessary Pay..... 9

ABSTRACT - The Office of the Assistant Secretary for Research (OAS/R) provides guidance, planning and overall policy direction to the Institution's research efforts and to research support activities. The Office is responsible for tracking research trends both internally and externally in the arts, humanities and sciences. Also included in this line-item is the Joseph Henry Papers, dedicated to collecting, transcribing, researching, editing, annotating, and publishing the manuscripts of Joseph Henry, a pioneer American physicist and first Secretary of the Smithsonian Institution. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Office of the Assistant Secretary for Research. The Institution requires \$9,000 for Necessary Pay for existing staff funded in this line-item.



PROGRAM - I. The Office of the Assistant Secretary for Research: The Office, in concert with the Secretary and other appropriate management staff, supervises the research activities of the Institution. The Office serves as the major institutional liaison for research centers in the United States and abroad. Also, the OAS/R is responsible for oversight and coordination of diving activities.

A fundamental responsibility of this Office is to develop guidelines to ensure the superior quality of research conducted at the Institution. This entails providing guidance on shifts of emphasis, suggestions for new areas of research, access to state-of-the-art facilities and equipment, and advising on the selection and promotion of scholarly staff. In addition, the Office strives to better disseminate Smithsonian research findings to the general public and to specialized audiences.

Carbon Dating Services - Contract services for dating, cleaning, and conserving objects are significant to Smithsonian research in such areas as history, art, and science. In FY 1987, the Institution established a competitive fund to support carbon dating. This fund allows for contracting of analyses which lead to the acquisition of valuable data for a wide range of research projects.

II. The Joseph Henry Papers: The Joseph Henry Papers collects, transcribes, researches, edits, annotates, and publishes the manuscripts of Joseph Henry. Publication objectives are a 15-volume letterpress series, an indexed 90,000-item microform edition, and special publications aimed at a more general audience. The Papers of Joseph Henry is a source of unpublished and unknown letters and papers. The documents and commentary provided by the editors give insight into the history of science, the development of Federal policy towards the sciences, the institutional and social structure of the scientific community of the 19th Century, and the history of the Smithsonian Institution.

The Henry Papers staff will complete work on the sixth volume of the series in FY 1989. This volume covers the years 1844-1846 and details Joseph Henry's work at the College of New Jersey (now Princeton University). Henry describes his extensive experimentation in electricity and magnetism in laboratory notebooks. Letters, notes, and newspaper articles trace the establishment of the Smithsonian Institution and Joseph Henry's election as the first Secretary. The staff will complete in FY 1989 the preliminary selection of 300 manuscripts from the 3,720 available for publication in Volume Seven. The transcription, research, and annotation of these manuscripts began in FY 1989 and will continue through FY 1990. This book will focus on Henry's efforts to establish the Smithsonian Institution as a center for the support of original research.

The Henry Papers project is a centralized source of Henry correspondence collected from 30 foreign countries and 328 depositories in the United States. Major Henry Papers resources are their automated 60,000-item document index and the Alexander Graham Bell-Joseph Henry Library. Both are essential for research in the history of science and the cultural history of the United States. Students, interns, scholars, genealogists, and the general public use this material. Examples of topics studied are the history of acoustics, electricity, magnetism, meteorology, museums, and photography.

## NONAPPROPRIATED SOURCES OF FUNDING:

I. The Office of the Assistant Secretary for Research: Unrestricted General and Special Purpose Funds - Annual allotments provide these funds which support the salary, benefits, and expenses of the Assistant Secretary for Research. An allotment also supports three significant international foundations. The foundations operate field research stations used by Smithsonian staff members as well as by the world scientific community. The Seychelles Islands Foundation operates the former Royal Society station on the Island of Aldabra, located in the Indian Ocean, where biological research occurs. The Charles Darwin Foundation operates a biological research station in the Galapagos Islands. The King Mahendra Trust for Nature Conservation provides scholars with access to unique environments on the Indian subcontinent by operating a field station in the terai region (a lowland plain) of Nepal where significant ecosystem research is in progress. Smithsonian support facilitates the continued accessibility of these areas for the research community at large. The Smithsonian provides support for the exchange of scholars and scientific information between the Smithsonian and a number of nations, principally, the People's Republic of China and Cuba. A Special Purpose fund provides for the Research Opportunities Fund, which supports unanticipated general research. While projected expenditures for FY 1989 and FY 1990 are reflected under this Office, the actual expenditures for FY 1988 are reflected by the recipient organizations.

Restricted Funds - These consist of restricted endowments, gifts, and grants from individuals, foundations, and corporations that specify the use of the donation or bequest. Smithsonian units receive competitive awards from the Seidell Endowment Fund, which this Office administers and which provides for dissemination of scientific information. The expenditures of the recipient organizations reflect the FY 1988 awards from the Seidell Endowment.

Government Grants and Contracts - The Office of Naval Research has provided contract funds for the continuation of studies in the area of manpower research and development.

II. The Joseph Henry Papers: Unrestricted General and Special Purpose Funds These funds are received from the Institution to support research projects.

Restricted Funds - A gift from the Richard Lounsbery Foundation in FY 1987 supports the temporary appointment of a research assistant in FY 1989. The Smith College Tuition Fund defrays travel and auxiliary support costs for staff, interns, and volunteers. In FY 1989, the Joseph Henry Papers will use the funds from the National Academy of Sciences for consultants on automation and computer training.

Government Grants and Contracts - Funds received in FY 1988 from the National Science Foundation support a joint seminar on nationalism and internationalism in science held in conjunction with the Australian bicentennial. The organizers will publish the proceeding in FY 1990.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS/1		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	107	10,931	51	2,760	48	2,525	-	115	108	13,464
FY 1989 -Estimate	107	10,721	51	3,078	45	4,076	-	30	112	18,000
-Base	107	10,916								
FY 1990 Estimate	111	11,172	51	3,866	46	4,454	-	30	114	29,000

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

/1 FY 1988 expenditures include \$525 thousand for Major Scientific Instrumentation.

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	107	4	111
11 Personnel Compensation.....	5,482	174	5,656
12 Personnel Benefits.....	920	62	982
21 Travel.....	85	-	85
22 Transportation of Things.....	54	-	54
23 Rent, Communications & Utilities.....	631	20	651
24 Printing & Reproduction.....	95	-	95
25 Other Services.....	2,285	-	2,285
26 Supplies & Materials.....	210	-	210
31 Equipment.....	1,154	-	1,154
Total	<u>10,916</u>	<u>256</u>	<u>11,172</u>

Analysis of Increase

Necessary Pay.....	114
Program Funds.....	142

ABSTRACT - On the eve of its centennial year, the Smithsonian Astrophysical Observatory (SAO) enjoys recognition as a world leader for basic research in astronomy, astrophysics, and space science. SAO coordinates its scientific programs with the Harvard College Observatory, and together, the two observatories form the Center for Astrophysics in Cambridge, Massachusetts. In addition, SAO operates the Oak Ridge Observatory in Massachusetts and the Fred Lawrence Whipple Observatory in



Arizona; the latter is the site of the Multiple Mirror Telescope, a joint project with the University of Arizona.

Ground-based telescopes; instruments aboard rockets, balloons, and space satellites; and laboratory experiments provide scientific data. The Observatory's computers assist in the analysis of these data, with results and scientific interpretations published in scientific journals and reports. SAO also disseminates information to a wider audience through lectures, books, and the popular media.

For FY 1990, the Institution requests no-year funding in the Major Scientific Instrumentation line-item for the non-personnel support to complete the design of the submillimeter telescope array and to continue the program for the conversion of the Multiple Mirror Telescope to a single-mirror instrument, 6.5 meters in diameter. In addition, the FY 1990 request for SAO reflects an increase of 3 workyears and \$142,000 for personnel costs and rent associated with the submillimeter telescope array. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of this budget. The Institution requires \$65,000 for Necessary Pay for existing staff funded in this line-item, along with .75 workyears and \$49,000 to annualize the partial year funding of three new positions approved in the FY 1989 budget.

PROGRAM - Founded in 1890 by the Institution's third secretary Samuel Pierpont Langley for studies of "the new astronomy," the Smithsonian Astrophysical Observatory (SAO) today prepares to celebrate its centennial as one of the world's premier centers for astrophysical research. From its pioneering studies of solar-terrestrial relationships and its establishment of a worldwide satellite tracking network, SAO has been a leader in fields as diverse as the application of new technology to telescope design, the observation of cosmic X-rays, and the survey of large-scale structure in the universe. Since its move to Cambridge, Massachusetts, in 1956, SAO has closely associated with the Harvard College Observatory (HCO). The partnership of the two observatories in the Center for Astrophysics (CFA) created in 1973, has allowed a broad interdisciplinary approach to research that combines observations across the entire electromagnetic spectrum with theoretical studies to provide a deeper understanding of the basic physical processes shaping the cosmos.

Research programs fall into seven divisions, with efforts coordinated to complement each other: atomic and molecular physics, high-energy astrophysics, optical and infrared astronomy, planetary sciences, radio and geoastronomy, solar and stellar physics, and theoretical astrophysics. Data-gathering facilities include telescopes at the Fred Lawrence Whipple Observatory in Arizona and the Oak Ridge Observatory in Massachusetts. In addition, SAO scientists have access to data provided by instruments aboard rockets, balloons, and space satellites, as well as by laboratory experiments conducted in Cambridge. In support of this research, SAO maintains engineering and publications departments, a computation facility, an image-processing laboratory, and an extensive astronomical library. Because it is located outside of the Washington metropolitan area, SAO has its own administrative structure funded by both Federal funds and indirect charges to contracts and grants.

On behalf of the International Astronomical Union, SAO operates two global science information services: the Central Bureau for Astronomical Telegrams and the Minor Planet Center. The first is responsible for receiving, verifying, recording, and disseminating information about transient astronomical phenomena, such as comets and supernovae. The second center computes orbits and provides observational

information on asteroids, as well as serving as the official arbiter of minor planet nomenclature.

The results of SAO research appear in established scientific journals, and in the CFA Preprint Series, SAO Special Reports, and other technical papers, distributed to scientific and educational institutions worldwide. SAO also disseminates information intended for wider, more general audiences through lectures, books, and the popular media. An extensive program of public information and education includes monthly "Observatory Nights" in Cambridge and regularly scheduled tours of the Arizona facility. SAO also conceived and, with HCO, is now conducting an innovative program to develop secondary school curriculum materials that use examples from astronomy to teach basic principles of physics and mathematics.

Among the significant scientific accomplishments of FY 1988 were:

-- SAO scientists obtained the first convincing evidence for a planet circling a star other than our own Sun, by using a painstaking technique designed to detect minute variations in a star's motion caused by the gravitational attraction of a companion body. SAO astronomers found that the faint star HD 114762, one very much like our Sun, at a distance of some 90 light years from Earth, had a slight periodic wobble due to a large planet in orbit about it. Because our viewing angle of the orbit is still unknown, scientists cannot calculate the size of the planet with any certainty, but it is most likely a giant body some 10 to 20 times more massive than Jupiter. Since the planet's distance from HD 114762 is about the same as that of Mercury from the Sun, it would have oven-like temperatures and, thus, not be a suitable habitat for life. However, this discovery supports the popular speculation that other stars in our galaxy have planetary companions--and that some of them may even have conditions conducive to the development of life and the evolution of intelligence.

-- Ironically, scientists believe they know more about what happened in the first three minutes after the Big Bang that started the universe than about many events occurring much later, including the formation of our own Milky Way galaxy. Although scientists have found some stars that date back 15 billion years to the time when the galaxy presumably first collapsed out of a primordial dust cloud, these stars are very rare--only about one in every thousand in the neighborhood of our Sun. Working with colleagues at the University of North Carolina, SAO astronomers have now identified and studied several hundred of these "first generation" stars. The survey suggests that the creation of the Milky Way was a most sedate affair, perhaps taking more than a billion years to complete.

-- Scientists are able to probe and map the large-scale structure of the Milky Way by measuring the distribution of carbon monoxide gas, a molecule that emits strong radio signals at millimeter wavelengths. In FY 1988, SAO scientists completed the first complete survey of clouds of carbon monoxide, which has led to the discovery that the inner part of the Milky Way may contain as much matter in molecular form as previously seen in the form of atomic gas.

-- Although the Sun is not a particularly copious emitter of X-rays, its two-million-degree-Centigrade gaseous outer atmosphere, or corona, does radiate strongly in this wavelength. In one very successful experiment in FY 1988, culminating many years of development, a novel SAO-built X-ray telescope equipped with a modified Hasselblad camera and special high-sensitivity film flew aboard a



suborbital sounding rocket to make extremely high spatial resolution images of the hot corona. The analysis of these data is currently under way.

A brief summary of the research conducted in each of SAO's seven divisions follows. In each section, the first paragraph describes the research in general terms and the subsequent paragraphs describe recent accomplishments, in addition to those highlighted above.

Atomic and Molecular Physics - Almost all the information coming from astronomical objects is in the form of light. To understand the physical conditions within those objects, as well as the intervening medium through which the light travels, one must first understand the complex atomic and molecular processes that both create the light and alter it during its long journey to Earth. Through a combination of theoretical studies and laboratory experiments, SAO scientists in this division attempt to describe these interactions of light with atoms and molecules.

In one such project, SAO scientists have studied how the presence of unusually large molecules in space may change our understanding of interstellar cloud chemistry. Increasing evidence suggests giant molecules, ranging in sizes between 30 to 1000 atoms each, may lace the interstellar medium. These molecules may be the source of infrared radiation seen near many astronomical bodies. Moreover, the presence of such molecules, known to researchers as polycyclic aromatic hydrocarbons, could also account for scientists' failure to observe certain atoms predicted (previously) by standard astrophysical models.

Inside very hot astronomical bodies, a process known as dielectronic recombination causes electrons to collide with positively charged atoms to form atoms with lower charges. This process is particularly prevalent in high-temperature, low-density gaseous plasmas, such as those in the outer atmospheres of the Sun and other stars. SAO scientists have developed an extremely sensitive ion beam experiment which can duplicate conditions similar to those in the solar corona and can measure the rates of dielectronic recombination.

High Energy Astrophysics - High-energy, X-ray radiation accompanies some of the most energetic--and violent--processes in the universe. Fortunately for humans, the Earth's atmosphere absorbs these X-rays, but this absorption also means that scientists must make all observations from balloons, rockets, or space vehicles. SAO scientists are currently analyzing X-ray data from several past missions and are preparing instrumentation intended for future space flight.

The reduction and analysis of data obtained by spacecraft, such as the Einstein Observatory, continues at SAO. The goal is the cataloguing of all observed X-ray sources and the mapping of the distribution of sources of cosmic X-rays. Such maps are already providing the basis for systematic studies of stars, galaxies, clusters of galaxies, and quasars.

Scientists can study clusters of galaxies, the largest aggregations of matter yet recognized in the universe, by observing the X-ray emissions from the very hot gas filling the space between individual galaxies. One project during FY 1988 involved using both X-ray images from the Einstein satellite and visible light observations of both large clusters and smaller groups of galaxies to compare the amount of matter found in the galaxies with that seen in the medium between them. The study found a much larger percentage of gas in the large clusters, thus suggesting that galaxy formation (by condensation out of the gaseous medium) may be more efficient in smaller



clusters. Further studies will seek to determine how much of the intercluster gas is primordial--left over from the early formation of the universe--and how much originated more recently as a result of processes inside the stars. Indeed, SAO scientists examining images of nearby galaxies have already found some evidence that explosive forces in galactic centers may be driving gas out into the surrounding space.

Other galaxy studies have suggested a connection between hot X-ray halos of elliptical galaxies and the radio sources often found at their centers. As the hot gas in an X-ray halo cools, some falls toward the center of a galaxy, perhaps serving to power the radio source there. In other less powerful radio galaxies, the falling gas may actually disrupt the extended structure of radio emission. This hypothesis would explain why only relatively bright radio galaxies have extended radio lobes.

SAO scientists and technicians are also working on the design of a High Resolution Imaging Telescope to fly aboard the Advanced X-ray Astrophysics Facility (AXAF), one of the major space observatories planned for launch by the United States in the next decade.

Optical and Infrared Astronomy - Optical and infrared astronomy research at SAO ranges from studies of the large-scale structure of the universe to the formation and evolution of stars. In support of this research, SAO operates the Fred Lawrence Whipple Observatory (FLWO) in Arizona, site of the Multiple Mirror Telescope (MMT), the world's third largest optical telescope, jointly run with the University of Arizona. Other optical telescopes at the FLWO undertake the large-scale surveys and other observations; and a 10-meter-diameter light collector, the most sensitive of its type, conducts ground-based searches for high-energy gamma rays. In collaboration with Harvard, SAO also operates the Oak Ridge Observatory in Massachusetts and there employs a variety of instruments for research ranging from asteroid orbital determinations through galactic studies to the search for extraterrestrial intelligence. The long-term program using a 1.5-meter telescope at the FLWO to survey the distribution of more than 10,000 galaxies within 200 million light years of Earth has produced a striking three-dimensional map that suggests the galaxies deploy on flattened sheets surrounding vast, bubble-like voids, some more than 100 million light years in diameter. During FY 1988, SAO extended the survey to the Southern Hemisphere through collaborative programs with observatories in Brazil and Argentina. The initial results indicate the large-scale structures seen in the northern sky prevail throughout the universe. The discovery of these structures poses serious challenges to all existing models for the evolution of the universe.

A significant milestone in ground-based gamma-ray astronomy was the detection by SAO scientists and their collaborators of gamma rays coming from the Crab Nebula. The observation using the 10-meter-diameter light collector establishes a "standard candle," i.e., a steady source of gamma-ray emission at a known level against which to search for and measure other, weaker sources in the sky. The result of a five-year project to develop an imaging technique, the Crab observation also offers new clues to the physical processes at work within the expanding shell of that exploded star and provides a measure of its magnetic field.

Planetary Sciences - Research in planetary sciences at SAO strives to understand the planets, satellites, and other small bodies of the solar system, as well as the processes that created them presumably out of a great, whirling, primordial cloud of gas and dust billions of years ago. Research continued during FY 1988 also on the

wealth of data provided by the European Space Agency's Giotto mission to Comet Halley in 1986, and a new study is under way on the likely mode and place of comet birth.

As part of investigations on the mineral composition of meteorites, SAO scientists have calculated that the original solar nebula must have been rich in oxygen, suggesting that icy, comet-like, pre-solar material may have vaporized and then recondensed without ever mixing with the nebula's gases.

Worldwide interest in Supernova 1987A continued to play a major role in the record-breaking activity of the Central Bureau for Astronomical Telegrams. An unprecedented number of reports on comets--16 new discoveries and 17 recoveries--added to the total of messages received and transmitted this year. A similar increase in the international effort to find and observe minor planets led to the establishment of new guidelines for defining discoveries and communicating data to the Minor Planet Center. The Oak Ridge Observatory closely coordinates its regular observations of newly discovered, unusual, or faint minor planets and comets with these two astronomical information services.

Radio and Geoastronomy - Research in radio astronomy attempts to understand the structure, evolution, energy sources, and ultimate fate of those astronomical objects throughout the universe that emit radio waves. As pioneers in very long baseline interferometry (VLBI), SAO scientists use this radio observing technique to measure directly drifts among the continents, to probe the interior of the Earth, to determine the distances to cosmic sources, and to study their structures.

One major effort has been to measure the size of our own galaxy and the distance to neighboring galaxies. By charting the relative motions of water-vapor masers surrounding a newly formed massive star, SAO scientists can determine the distance to that star with high precision. Scientists used this technique to measure the distance to the center of the Milky Way, and this year, new data improved the accuracy of that measurement. SAO astrophysicists carried out similar measurements of maser complexes in the neighboring galaxy M33; these measurements may make possible the first direct determination of this galaxy's rotation.

SAO scientists developed a simple model of the energy balance in interstellar clouds, and this model explains the size, density, and internal motions in 100 such clouds. Many scientists think these massive structures are the birthplace of stars.

SAO continued its leadership in the development of instruments for astronomical research, including highly stable atomic clocks built to support programs of VLBI, deep space tracking efforts, and national time-keeping programs. Most novel, an optical interferometer, constructed on Mt. Wilson by SAO in collaboration with several other institutions, began daily observations to determine the position of stars with an accuracy 10 to 100 times greater than is possible with conventional telescopes.

Solar and Stellar Physics - Research in solar and stellar physics is concerned with understanding the physical processes underlying the behavior of the Sun and other stars. Scientists study stars like the Sun to understand the dependence of observed properties on factors such as their age, composition, and physical association with others in pairs and groups. Of particular interest to SAO scientists is the behavior of hot gas under varied conditions--in the Sun's interior, in the outer atmospheres of stars, in the space between the stars, and in the material ejected by young stars and supernovae.



For example, one of the major unknowns of solar physics is the process that heats the Sun's outer atmosphere, or corona, and creates the powerful flow of gas and supercharged particles called the solar wind that sweeps over all the planets. An SAO-conceived instrument called an Ultraviolet Coronagraph Spectrometer (UVCS), designed to create artificial eclipses, will address this problem by allowing continuous observation of the solar corona and study of the solar wind; SAO hopes the UVCS will be one of the experiments aboard the international Solar Heliospheric Observatory (SOHO), scheduled for launch in the mid-1990s.

SAO scientists have shown that almost all stars seem to form disks of gas and dust around them early in their life cycles and, thus, have the potential for developing planetary systems. Both observational and theoretical studies continued during FY 1988 on the properties of these circumstellar accretion disks and their role in stellar evolution. For one such star, infrared and optical observations showed material in the disk spiralling inward and falling onto the star's surface at a rate sufficient to power its extraordinarily strong stellar wind.

To study magnetic activity cycles in other stars, SAO scientists observe the relationship between this activity--as evidenced by "spottedness" on a star's surface--and stellar rotation. For example, since dark regions, or "starspots," cover one hemisphere of the giant star Delta Coronae Borealis, scientists have determined its exact period of rotation from accurate measurements of the star's periodic dimming. A new research tool used for these observations is the Automatic Photoelectric Telescope (APT), a relatively low-cost, fully automated, instrument, ideal for long-term monitoring of such cyclic stellar brightness variations. SAO has established two such telescopes at the FLWO in Arizona, and is developing plans to coordinate a worldwide network.

Theoretical Astrophysics - Theoretical astrophysicists study the objects and systems of the universe by means of mathematical analysis and computer simulations. Although usually intended to provide interpretations of observed phenomena, this research often results in the prediction of new phenomena not yet seen. Among other investigations in FY 1988, SAO scientists studied the processes that destroy globular clusters, possible explanations for the cosmic background radiation thought to be a remnant of the Big Bang, the manner in which large gas clouds collapse to form galaxies, the properties of the material spiralling into black holes, and the instabilities in the powerful winds expelled from stars.

Globular clusters are dense, spherical congregations of several million stars, usually found on the periphery of the Milky Way. Among the oldest objects in the galaxy, globular clusters may hold clues to understanding its formation. The manner in which destruction of globular clusters occurs becomes important in accounting for observed differences between the orbits of globular clusters and halo stars, also found outside the main disk of our galaxy. In their investigations, SAO theorists found that tidal disruption had destroyed most of the initial population of clusters and those remaining have generally been distributed in orbits aligned along the plane of the galaxy.

Scientific Equipment Replacement and Improvement Program - Since FY 1984, SAO has undertaken a comprehensive long-term program to replace and improve obsolete laboratory and computer equipment. Additional program funding received in FY 1987 and FY 1988 offsets the cumulative erosion of the base for computer equipment that resulted from across-the-board reductions since FY 1985. (In accordance with the FY 1988 conference report for the omnibus continuing resolution, the Institution has provided an

additional \$250,000 for this purpose from within available Smithsonian funds, yielding a total yearly addition of \$500,000.) SAO has made significant progress in developing a network for computers distributed throughout SAO. An Observatory-wide Ethernet system now links together new computer workstations and their associated disk- and tape-drives. This system is allowing significant easing of the pressures on SAO's still fully overloaded central computers. In addition, microprocessor-controlled data acquisition and data presentation capabilities have substantially enhanced the effectiveness of existing laboratory equipment.

Development of Scientific Instrumentation - Beginning in FY 1989, the Institution requested support for the non-personnel costs for two projects for the Smithsonian Astrophysical Observatory as no-year funding under the Major Scientific Instrumentation line-item: (I) the development of an array of submillimeter telescopes; and (II) the conversion of the Multiple Mirror Telescope. Both of these cutting edge scientific projects involve the fabrication of major new instrumentation that will take a number of years to plan, design, and complete. The Institution anticipates the development of the submillimeter array to continue through the mid-1990s, and the development will require total funding currently estimated at \$30 million (1987) for construction on a continental U.S. site; the cost would be about 25 percent higher if the Institution locates the array on a prime mountain site in Hawaii. The conversion of the Multiple Mirror Telescope, which SAO expects to complete by FY 1994, will require total estimated funding from the Smithsonian of \$10 million (1987).

Facilities Development - With funding provided in FY 1988 and FY 1989 as part of the Construction appropriation, SAO is designing and will construct a new base camp for the Whipple Observatory. Its facilities will include the Administrative Building and Visitor Center, with space for purchasing, fiscal, engineering and secretarial support, and for displays and briefings about the activities conducted at the Observatory; a vehicle maintenance shop, with service and storage space to accommodate more than 60 vehicles, primarily buses and heavy machinery used for road maintenance; and a warehouse facility.

EXPLANATION OF PROGRAM INCREASE - For FY 1990, the Institution requests no-year funding in the Major Scientific Instrumentation line-item for the non-personnel support to complete the design of the submillimeter telescope array and to continue the program for the conversion of the Multiple Mirror Telescope to a single-mirror instrument, 6.5 meters in diameter. In addition, the FY 1990 request for SAO reflects an increase of 3 workyears and \$142,000 for personnel costs and rent associated with the submillimeter telescope array design study. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of this budget.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted general funds come primarily from overhead charged on contracts and grants. SAO uses these funds to support administrative positions and some other administrative costs of SAO. Special purpose funds come mainly from two sources: external users of SAO's Computer Center and the Institution's Trust Funds, with the latter providing by far the larger share. SAO may use the former for research and computer-related purposes in future years. Trust funds provide direct support for certain research projects and, mostly, for the Fellowship and Visiting Scientist programs.

Restricted Funds - Restricted funds consist of specific endowments, as well as gifts from individuals, foundations, or corporations earmarked for particular purposes.

Government Grants and Contracts - SAO receives the majority of its funds through government agency contracts and grants for research in areas of SAO's expertise. SAO conducts this research often in cooperation with both governmental and academic institutions in the United States and abroad. In FY 1990, expectations are for increased funding through contracts from NASA to SAO for development of instrumentation for both the Advanced X-Ray Astrophysics Facility (AXAF) and the Solar Heliospheric Observatory (SOHO).



SMITHSONIAN TROPICAL RESEARCH INSTITUTE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	95	5,395	3	202	-	609	-	207	9	656
FY 1989 -Estimate	125	5,738	3	211	-	333	-	444	9	578
-Base	125	5,848								
FY 1990 Estimate	127	5,664	3	222	-	338	-	125	9	587

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	125	2	127
11 Personnel Compensation.....	3,100	64	3,164
12 Personnel Benefits.....	692	23	715
21 Travel.....	160	-	160
22 Transportation of Things.....	63	-	63
23 Rent, Communications & Utilities.....	41	-	41
24 Printing & Reproduction.....	37	-	37
25 Other Services.....	656	-	656
26 Supplies & Materials.....	538	5	543
31 Equipment.....	561	-276	285
Total	<u>5,848</u>	<u>(184)</u>	<u>5,664</u>

Analysis of Increase

Necessary Pay.....	47
Program Funds.....	-231

Abstract - The Smithsonian Tropical Research Institute (STRI) is the Nation's premier center for basic research on the ecology, behavior, and evolution of tropical organisms. Located in the Republic of Panama, STRI conducts collaborative research throughout the New and Old World Tropics. STRI applies results of this basic research to carefully selected conservation and resource management problems, seeking viable alternatives to traditional agricultural and forestry practices which contribute to the massive deforestation of the world's tropical forests. In addition to STRI scientific staff, scientists throughout the world who conduct research in tropical

biology use STRI facilities for their fieldwork. The terms of the Panama Canal Treaties of 1979 designate STRI as the custodian of the Barro Colorado Nature Monument, a 12,000-acre tropical nature preserve located in the Panama Canal consisting of Barro Colorado Island (BCI) and five adjacent mainland peninsulas. Other STRI research facilities include a marine laboratory at Naos Island (on the Pacific Ocean); a marine laboratory at Galeta Point and a field station in the San Blas Islands (both on the Atlantic Ocean); and a research library, laboratories, conference and study facilities, and administrative headquarters in Panama City. STRI scientists also engage in collaborative research with colleagues in U.S. universities and in other tropical countries including Malaysia, India, Madagascar, Kenya, Senegal, Costa Rica, and Venezuela.

The Institution requires \$37,000 for Necessary Pay for existing staff funded in this line-item, along with .50 workyear and \$10,000 to annualize the partial year funding of two new positions approved in the FY 1989 budget. The resources contained in this line-item also reflect 1 workyear and \$45,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget. A reduction of \$276,000 in STRI's base funding offsets these increases. (This reduction reflects the second portion of the one-time costs of equipping the Tupper Center).

PROGRAM - The Smithsonian Tropical Research Institute is the Nation's leading international center for the advancement of basic research in tropical biology. STRI performs four major functions: 1) conducts fundamental research on the ecology, evolution, and behavior of tropical plants and animals, including mankind; 2) provides major facilities and logistical support for the international scientific community to study both terrestrial and marine tropical biology; 3) is deeply committed to environmental education and to conservation and management of tropical ecosystems; and 4) has the treaty-assigned responsibility to protect and manage the Barro Colorado Nature Monument.

There is a compelling need for improved understanding and conservation of tropical ecosystems. Conversion of tropical forest to scrub and grassland appears to affect global, as well as regional, climatic patterns and may adversely affect the North America environment. Species loss eliminates potential sources of medically and commercially important natural products. STRI's basic research provides the essential framework for effective management and conservation plans. STRI's annual report and STRI Contributions to Research, an annual offprint of 200 STRI publications, summarizes current research projects.

Descriptions of STRI's most significant accomplishments and major program activities during FY 1988 follow:

Experimental Analysis of Forest Dynamics - Barro Colorado Island is unique among tropical field stations with respect to the amount and quality of logistical and technical support provided to STRI staff and distinguished visitors from numerous universities and research institutes. This makes it possible to conduct large, long-term experiments normally impossible in a tropical forest. Such experiments are necessary to determine the effects of environmental factors on forest dynamics.

STRI is in the fourth year of a major experiment examining the effects of seasonal drought on growth and reproduction of forest trees and understory plants. Researchers have irrigated two tracts of forest during the annual dry season to maintain wet-season soil-moisture levels and have compared these tracts with

non-irrigated controls. A major finding is that, contrary to expectation, many species do not respond significantly to increased soil moisture during the dry season.

STRI scientists and collaborators are using new techniques and instruments in the field to study physiological adaptation to drought. They have shown, for the first time, that individual plants are capable of increasing their tolerance to drought over periods of days and even hours. This plasticity results in improved carbon gain and reduced water loss during periods of low rainfall and helps explain why irrigation does not dramatically alter growth and reproduction. This finding offers guidelines for development of tropical agro-forestry schemes using native species.

On Barro Colorado Island, STRI personnel initiated a pioneering study into the responses of tropical tree roots to soil fertility. Tropical forest soils are often deficient in nutrients, such as phosphorus, and can have toxic levels of others, such as aluminum. As much as 50 percent of the total annual biomass production of some tropical forest plants may go into root growth, yet little information exists on the factors controlling this pattern.

STRI researchers experimentally manipulated nutrient levels on large forest plots in order to determine the effects upon growth of tree roots and shoots. Infrequent, inexpensive fertilizer treatments may increase the proportion of total plant growth manifested as above ground wood, a result of great potential economic importance for continuous-yield agro-forestry projects.

Biological Diversity - The origin and maintenance of the great species richness in the tropics is a fundamental research interest at STRI. One important, long-term component of this program is the 124 acre forest census on Barro Colorado Island. STRI researchers supervise the mapping and measurement of over 250,000 trees on the site every five years. Analyses completed during FY 1988 suggest that juvenile trees located near adult trees of the same species have lower growth rates and survivorship than juveniles located near unrelated adults. This finding implies that dense aggregations of a single species will be less successful than mixed stands--a result with economic implications for tropical forestry, which traditionally has favored monocultures. This study has also identified native species that grow rapidly and may replace exotic species such as Eucalyptus and pines in plantation forestry.

Biological Catastrophes - STRI's long-term basic research programs provide a context for evaluating environmental catastrophes. A major oil spill occurred in April 1986 near STRI's Galeta Marine Lab on the Atlantic coast of Panama, significantly affecting marine and intertidal communities. STRI is currently conducting a five-year study of the impact of the oil spill on biological communities for the Minerals Management Service of the United States Department of the Interior. STRI is coordinating an international team of over a dozen scientists to compare the recovery of biological communities in spill-affected areas to natural population variation prior to the spill. Damage to coral, seagrass, and mangrove communities has proven to be more severe, and more enduring than suggested by less rigorous studies elsewhere. This work is providing invaluable guidelines for management of oil spills in tropical and semi-tropical marine habitats. The findings are possible only because of the rigorous pre-spill research STRI conducted in the area.

Conservation Research - STRI scientists are developing agro-forestry techniques to produce a sustained-yield, economically viable buffer zone for the Barro Colorado Nature Monument. This will provide added protection against traditional agriculture, regional climatic change, hunting, and forestry harvests. These scientists have



planted many native and introduced species of trees and crops together in a 2.5 acre "Forest Garden." All foliage in the plot is palatable to livestock. Many species fix nitrogen and improve soil fertility. Researchers can use the project as a model for expanded agro-forestry in the deforested areas within the Panama Canal watershed. It is also a model for buffer zone projects elsewhere in the tropics.

Molecular Evolution and Plant Physiology Initiative - With funding provided in FY 1988 and FY 1989, STRI has established a research program in molecular evolution and plant physiology. While STRI scientists have always made some use of molecular and physiological techniques, this support significantly enhanced their ability to undertake major research in these fields. Studies of molecular evolution now permit STRI scientists to address basic questions concerning the processes of speciation, maintenance of genetic variation in populations, and the nature of population differentiation. Studies of tropical plant physiology are providing essential insights into the nature of plant adaptation to environment, information necessary to apply basic knowledge to the urgent problems of forest conservation and management.

Visiting Scientists - STRI promotes additional basic research in tropical biology by hosting several hundred students who work in association with the staff and visiting scientists from many countries. These scientists can pursue research in biologically rich environments without being intellectually isolated. Hundreds of scientists from major universities and research institutions from most of the United States and from all over the world ensure a continuing infusion of new ideas leavened by the long experience in the tropics of STRI's permanent staff.

During FY 1988, scientists from Princeton University and the United States Geological Survey continued research on the role of tropical forests and wetlands in the production of "greenhouse gases," including methane and carbon dioxide. These gases have significant effects on regional and global climatic patterns. Deforestation and agriculture are likely to alter the dynamics of gas production and circulation, further complicating predictions about the future of tropical and extra-tropical climates.

Publications - Work at STRI resulted in the publication of over 200 scientific papers and books during calendar year 1987. Staff and visiting scientists are currently involved in over 150 research projects which will produce at least the same number of publications.

Facilities - STRI's research facilities in Panama include the Barro Colorado Nature Monument, marine laboratories at Naos Island and Galeta Point, a small field station in the San Blas Islands, and a cloud forest station at an elevation of 6,500 feet in western Panama. STRI also operates a 63-foot research vessel for studies in both the Atlantic and Pacific Oceans. Since STRI's research programs include both comparative studies among habitats and geographic regions and numerous carefully organized experimental studies, these facilities also serve as the home base for research at numerous other sites throughout Panama.

The new Tupper Laboratory and Conference Center will become operational during FY 1989. This facility will provide modern office, laboratory, and conference facilities for STRI scientific staff and visiting scientists, similar to those at major research universities. It will support development of plant physiology and molecular evolution programs at STRI. During FY 1989, STRI will also complete construction of the new dormitory, kitchen, and dining hall on Barro Colorado Island,

which will provide modest living facilities for the large number of researchers who use BCI.

The Institution received as part of its FY 1989 Construction appropriation funding to build a new laboratory facility, a vivarium, an insectary, and a growing house on BCI. In addition, part of the FY 1990 Construction appropriation is a request for funding to construct Galeta/Atlantic laboratories and dormitory.

Fellowships, Conservation and Environmental Education - Because of its location in the Republic of Panama, STRI is in an excellent position to play two significant roles in the study and conservation of tropical environments. First, STRI actively engages in the education of creative scientists from tropical and nontropical nations. Second, STRI is aware that the survival of tropical ecosystems depends on the combined efforts of international organizations, governments, the private sector, and people in the tropical countries themselves, and STRI is both a committed leader and participant in tropical conservation efforts.

Approximately 80 men and women (38 from Latin America) representing a dozen nations participated in STRI's academic programs in FY 1988. Also, STRI and the University of Panama organized a graduate-level course in bryophyte ecology and systematics for a second year.

STRI's premier reference library for tropical studies enhances its educational function in tropical biology by serving STRI's staff, visiting scientists, and students from universities and secondary schools in Panama. Currently, the library has over 1,000 patrons per month.

STRI is deeply involved in conservation activities in the Republic of Panama. STRI works actively with Asociacion Nacional para la Conservacion y la Naturaleza, a newly formed local affiliate of the Nature Conservancy, in its efforts to purchase and protect endangered natural areas. STRI also provided financial and logistical support for the planning of the major new Darien National Park. Intensive studies of green iguana and paca management are providing protocols for the eventual domestication and use of these species as a standard component of Panamanian agriculture. Studies of fast-growing plantation trees and new crop plants are in progress on the mainland west of Barro Colorado Island. The results of these studies will provide local farmers with sustained-yield agricultural techniques that eliminate the need to continually remove forest to provide new crop land.

Because the primary emphasis of STRI continues to be basic research, its understanding of tropical organisms and environments deepens and broadens over time. As a result, STRI is better capable of applying this knowledge to the increasingly serious environmental and economic problems confronting the Republic of Panama and other tropical countries. STRI's educational programs are producing both greater interest and expertise among students in the tropics in the application of basic knowledge to practical problems.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These derive from a variety of sources including annual allotments. Such funds support, in part, the salaries and related costs of the fellowship program, the senior sabbatical program, insurance, supplies, and a long-term collaborative research program with the Forest Research Institute in Malaysia. Funds also support a short-term fellowship program in tropical



biology; visiting scientists and students; field research; seminars and lectures; environmental, conservation, and education activities in Panama and defray expenses of international scientific colloquia and ceremonial occasions.

In addition, funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, Research Opportunities Fund, Smithsonian Society, and the Special Exhibition Fund support research, education and exhibition projects.

Restricted Funds - Funds are in the form of restricted endowments which specify the use of the donation or bequest and gifts and grants from individuals, foundations, organizations, or corporations for specific purposes. These funds further scientific research related to the biological, ecological, and behavioral processes which serve as the basis of tropical ecosystems; research related to geophysical events; publication and distribution of research results; and studies relating to endangered tropical environments.

Continuing support from the Exxon Corporation provides short-term tropical biology fellowships and assistance to 30 students from developing Latin American countries.

Government Grants and Contracts - Beginning in FY 1987, a \$3 million contract with the Minerals Management Service of the United States Department of the Interior funded a five-year study of the catastrophic oil spill at the Galeta Field Station.

SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	30	1,491	2	85	-	101	-	23	2	519
FY 1989 -Estimate	29	1,418	2	100	-	105	-	10	2	213
-Base	29	1,442								
FY 1990 Estimate	31	1,532	2	100	-	105	-	7	2	200

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	29	2	31
11 Personnel Compensation.....	894	64	958
12 Personnel Benefits.....	128	26	154
21 Travel.....	10	-	10
22 Transportation of Things.....	2	-	2
23 Rent, Communications & Utilities.....	10	-	10
24 Printing & Reproduction.....	5	-	5
25 Other Services.....	132	-	132
26 Supplies & Materials.....	133	-	133
31 Equipment.....	128	-	128
Total	<u>1,442</u>	<u>90</u>	<u>1,532</u>

Analysis of Increase

Necessary Pay.....	13
Program Funds.....	77

ABSTRACT - The Smithsonian Environmental Research Center (SERC) performs basic scientific research on coastal land/water systems. SERC currently occupies 35,000 square feet of laboratory, office, educational, and support space and 2,600 acres of land on a tidal river system. The interdisciplinary staff, visiting scientists, and students study how land use, air quality, and weather variations affect (a) the movement of nutrients, eroded soil, and other materials through the system; (b) the dynamics of plant and animal populations; and (c) the overall health of the system. The Institution requires \$8,000 for Necessary Pay for existing staff funded in this

line-item, along with .25 workyears and \$5,000 to annualize the partial year funding of one new position approved in the FY 1989 budget.

Also contained in this line-item is an amount of 2 workyears and \$77,000 associated with the Institution's special employment initiative. Justification of these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - SERC research has the goal of attaining a better overall understanding of how coastal land/water environmental systems function. Research staff address a wide variety of ecological questions while conducting a long-term interdisciplinary study of a tidal subestuary of the Chesapeake Bay (Rhode River) and its watershed. This watershed contains a mosaic of upland and floodplain forests, marshlands, cropland, pasture, abandoned fields, and residential areas typical of the mid-Atlantic Coastal Plain. The Center has already studied such problems as the effects of herbicides on plants in Chesapeake Bay, acid rain's effects upon deciduous forest and fish reproduction, and the role of riparian forests in alleviating pollution from agriculture.

Research Results - SERC compiled research findings on 15 years of nutrient dynamics at its site on the Chesapeake Bay and at other research centers. Excessive nutrient enrichment is a serious problem in Chesapeake Bay. The present overall nutrient input of nitrogen and phosphorus have an atomic ratio of about 15, the ideal ratio to foster high algal growth. Of these inputs, land runoff provides 66 percent of this nitrogen, mostly from the piedmont and mountain regions of the watershed, and 22 percent of the phosphorus, mostly from the coastal plain watersheds. Seventy-three percent of the phosphorus comes from point sources. Direct atmospheric deposition on tidal waters accounts for 10 percent of nitrogen inputs. A regional landscape perspective will be necessary for efficient control of nutrient inputs to Chesapeake Bay.

The blue crab is a species with major economic and ecological importance to the Chesapeake Bay. Most crabs in any given population are missing at least one limb which they normally regenerate. Laboratory experiments conducted showed the impact of limb loss and regeneration upon growth rates and molting frequency. Loss of a single limb, including claws, had no significant effect. Multiple losses significantly reduced both growth and molt increment. Crabs regained normal growth after regeneration.

SERC studied the effects of competition within monocultures of wild rice in tidal marshes. As plant density increased and self-thinning mortality occurred, the surviving plants became more uniform or equal in size as a result of competition for light. These results were similar to those from studies of other populations such as forest trees and old field weeds. These results have important implications to plant evolution since only the survivors of this self-thinning process will complete sexual reproduction.

SERC also conducted experiments continuously exposing various tidal marsh plant communities to roughly double the current ambient atmospheric carbon dioxide concentrations. This experiment simulated atmospheric compositions predicted for early in the next century. SERC developed and tested open top chambers on three different plant communities. Results showed increased growth and shoot densities and delayed fall senescence in sedge communities and no observed growth effects for a *Spartina patens* community. Sedge shoot nitrogen content also decreased as a result of



the increased growth rates. This decrease could have long-term effects on nutrient cycling within this community.

SERC continued research on the ecology of bird species which nest in the Atlantic coastal plain but winter in the tropics. In the Yucatan peninsula of Mexico, there are 42 such species. Most of these prefer tropical forest during the winter, but species which utilize forest edges during the breeding season prefer similar habitat in the tropics. Thus, the impact of forest fragmentation and clearing is equally important in both breeding and wintering grounds for these species.

Solar Research Studies - The Smithsonian pioneered studies in the collections of data on the intensity and spectral distribution of solar radiation on the earth's surface. For the past several years, these efforts have been enhanced by a cooperative arrangement with the National Oceanic and Atmospheric Administration (NOAA). NOAA has provided office and laboratory space and utilities and has helped operate Smithsonian ultraviolet spectral radiometers at NOAA stations for Global Monitoring of Climatic Change (GMCC). These measurements allow us to calculate the concentration of ozone in the atmosphere and the dose of harmful ultraviolet (UV) radiation at the earth's surface. When ozone concentrations declines, UV doses on earth increase with potentially serious consequences. These Smithsonian UV measurements span a complete sun spot cycle, which average 11 months. These data are unique and demonstrate the strong interaction of the solar sun spot cycle with the dynamics of ozone concentration changes in the stratosphere. In FY 1989, a major data editing effort began with the initial focus on the ultraviolet data. These data are now edited, are now being archived on stable computer media and will soon be available for use by any interested party. In FY 1990, these data will be extensively analyzed and published. A new generation of spectral radiometer, under development at the Smithsonian, is expected to be completed and placed into operation in the GMCC network in FY 1990. It will allow more refined analyses of the atmospheric dynamics of ozone as well as applications in other regions of the solar spectrum.

Educational Activities - SERC provides a broad range of educational activities, including teacher-led field trips, self-guided nature trails, and guided tours. Groups of students and the general public observe firsthand a variety of natural habitats. A work/learn program enables students to work with scientists, both in the field and in the laboratory. Predoctoral, postdoctoral, and sabbatical programs for professionals at all levels enable visiting researchers to carry out collaborative or independent research at SERC. The results of SERC's research disseminate through the publication of findings in scientific journals, the presentation of research findings at national and international scientific meetings and seminars, the training of scientists, and public education activities.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Allotments provide support for special events, work/learn and fellowship programs, and the salary costs of a docent coordinator and a public program director.

Restricted Funds - Donations, bequests, and foundation grants designated for specific subjects of investigation provide these funds. For FY 1989, a grant from the World Wildlife Fund continues to support investigation of the effects of land use changes in the Yucatan peninsula upon migratory bird populations which nest in the Chesapeake region and winter in Mexico.

Government Grants and Contracts - Various Federal and State agencies supply funds for special projects conducted at SERC, utilizing the expertise of the staff and the unique physical site characteristics. A grant from the Chesapeake Research Consortium supports research on the nutrient dynamics of the Rhode River system while a grant from the U.S. Department of Energy furthers the study of greenhouse effects on marshes. A contract from the Maryland Department of Natural Resources supports a study of the efficiency of a low cost method of stream liming to neutralize fish spawning grounds.



NATIONAL ZOOLOGICAL PARK

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	330	13,660	1	131	-	500	1	227	-	147
FY 1989 -Estimate	343	14,048	1	134	3	381	1	461	-	134
-Base	343	14,398								
FY 1990 Estimate	346	14,638	1	134	3	614	1	568	-	203

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	343	3	346
11 Personnel Compensation.....	10,026	168	10,194
12 Personnel Benefits.....	1,503	72	1,575
21 Travel.....	70	-	70
22 Transportation of Things.....	11	-	11
23 Rent, Communications & Utilities.....	50	-	50
24 Printing & Reproduction.....	15	-	15
25 Other Services.....	480	-	480
26 Supplies & Materials.....	1,568	-	1,568
31 Equipment.....	655	-	655
Collections Acquisition.....	15	-	15
42 Insurance Claims & Indemnities.....	5	-	5
Total	<u>14,398</u>	<u>240</u>	<u>14,638</u>

Analysis of Increase

Necessary Pay.....	196
Program Funds.....	44

ABSTRACT - Since 1889, the National Zoological Park's (NZP) primary mission has been the advancement of science and the instruction and recreation of the people. The Zoo's live collection, open to the public, occupies 163 acres at Rock Creek Park in Washington, D. C. The Zoo also maintains a major conservation, animal breeding, and research center on 3,150 acres in Front Royal, Virginia. Through its programs in research, conservation, animal health and education, NZP serves both the public and

specialized audiences and promotes understanding of evolution, animal adaptations and the interaction of wildlife with the environment. The Institution requires \$117,000 for Necessary Pay for existing staff funded in this line-item, along with 2.5 workyears and \$79,000 to annualize the partial year funding of 10 new positions approved in the FY 1989 budget. The resources contained in the line-item reflect 1 workyear and \$44,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - At its Rock Creek site, NZP is responsible for the maintenance and welfare of over 6,200 animals comprising 470 species. The large increase in the animal population over past years results from the new Invertebrate Exhibit which houses approximately 4,000 animals. The Zoo chooses its species primarily for their interest to the public and their contribution to research and conservation. The Zoo keeps nearly 800 animals representing 38 species, whose status in the wild is precarious, at the Front Royal Conservation and Research Center (CRC). These animals form the basis for the Center's long-term breeding and research potential.

The major programs of the National Zoo are animal exhibition; animal management; animal conservation and propagation; research; and public education. In addition to its leadership in animal management practices, the Zoo plays a major role in developing new techniques for long-term sperm and embryo storage and embryo transplantation. These techniques are, potentially, of crucial importance for conservation. Many species, particularly in the tropics, become endangered because of man's disturbance of their natural habitats. Because species are dwindling in numbers, the Zoo has an energetic program of conservation research on endangered species' natural habitats. NZP also conducts pioneering studies in the reintroduction of zoo-bred animals to their native habitat. The Zoo also is developing programs on the roles the public and zoos can play in animal conservation.

Animal Exhibition - The Park exhibits animals primarily to excite the Zoo visitor about biology and the natural world. The National Zoo is rapidly transforming its principal focus to a "biopark" by shedding traditional distinctions between plants and animals, aquatic and terrestrial life, vertebrates and invertebrates, and even science and art. Instead of housing exhibits of living things in separate aquariums, botanical gardens, natural history and art museums, the biopark will emphasize the interrelationships between plants and animals, living and extinct organisms, water and land, form and function. This will show the influence of man on nature, including domestication, agriculture, hunting, art, and environmental impact.

A new exhibit for gibbons, located on a wooded ridge in Rock Creek, opened in the summer of 1988. This is an appropriate stage for their spectacular locomotion and territorial calling. The graphics and plantings are restful, understated, and organic reminders of the Asian origins of these very endangered forest apes.

The newly renovated waterfowl wetlands in front of the Bird House, completed in August 1988, include a variety of waterfowl and wading birds. This naturalistic, contemplative setting, surrounded by aquatic plants, will come alive each spring with the elaborate courtship rituals of a wide variety of ducks, geese, and swans.

Spectacled bears, golden-headed tamarins, prairie dogs, king vultures, and snake-necked turtles were among the nearly 1,000 births and hatchings that in 1988 bolstered stocks of threatened species and delighted visitors. The addition of a male gorilla from the Boston Zoo increased the possibility of a gorilla birth at the zoo. Japanese

spider crabs are on exhibit in a specially designed 3,500 gallon tank in the invertebrate exhibit. This crab is the largest crustacean in the world with an adult leg span of approximately nine feet. The Government of Indonesia presented two young Komodo dragons to the National Zoo. These lizards live in a renovated exhibit in the reptile complex. The Zoo hopes that they will eventually form the core of a breeding program for this rare and interesting species. Asiatic lions, sloth bears, tiger quolls, white storks, curly tailed lizards, and blue ringed octopus were significant additions to the exhibit program.

Animal Management - Of prime importance is the health and well-being of the animals under the Zoo's care. The Zoo strives to provide the animals with natural and congenial conditions which contribute to good health and diminish stress. In addition, the National Zoo provides the most advanced techniques in health care, preventive medicine, emergency treatment, surgery, dentistry, and neonatal medicine. As part of the medical program, the Zoo has a pathology staff that provides in-house diagnostic services and engages in research related to disease prevention. The staff maintains a scientifically based nutrition program, with the highest standard of food preparation to supplement the best available medical care. The staff maintains comprehensive medical and general records for all animals.

The medical case load is about 3,000 cases per year with approximately 700 hospitalized patients. With the new hospital at the Conservation and Research Center now functional, two hospitals are available. The Front Royal hospital houses quarantine facilities and a suite for major surgical procedures. The staff uses hospital laboratories for urinary hormone analysis, semen freezing, antibiotic assays, and clinical pathological studies.

The completion of the new Rock Creek hospital provides a state-of-the-art medical facility for the Zoo's collection. The new laboratory space will enable studies of clinical medicine, pathology, and reproductive physiology studies to expand. Clinical studies include improving anesthetic techniques in mammals, birds, reptiles, and invertebrates, and using and modifying newer tools, such as ultrasound, endoscopy, and Nuclear Magnetic Resonance, to aid in their specialized diagnostic problems.

Staff of the Department of Pathology, in a collaborative study with area medical institutions and the San Diego Zoo, identified a new viral hepatitis of marmosets and tamarins. The disease, which has occurred in ten zoos over the past seven years, has been particularly prevalent in the golden lion tamarin and poses a further threat to this already endangered species. The Zoo is establishing an infectious disease laboratory in the new pathology facilities to study further this virus with the intent of developing preventive methods. Researchers also defined a new chronic debilitating kidney disease, renal medullary amyloidosis, in dorcas gazelles. They began a study of an iron storage disease in the Bali mynah collection which resembles hemochromatosis in humans. Published reports describing the results of the completed projects will provide useful information for other zoological collections. Once fully equipped, this facility will help the Zoo provide the best of care for its animals, particularly through groundbreaking research resulting from cooperative efforts with other research organizations.

During 1988, the Zoo made major advances in its research on reproductive physiology and endocrinology. The Endocrinology Research Laboratory in the veterinary hospital complex at the Conservation and Research Center continues its research to monitor hormonal metabolites in voided urine. This is an ideal, non-invasive approach to study the endocrinology of wildlife species in zoos. Researchers are using this



technique to diagnose pregnancy and predict parturition in Eld's deer and the Przewalski's horse. Studies are now in progress involving Pere David's deer, muntjac, golden lion tamarins, and the dwarf mongoose. The laboratory also monitors the reproductive cycle of the Zoo's giant panda, Ling-Ling.

Research continued on the domestic ferret as a model for the highly endangered black-footed ferret. During the past year, successful methods accounted for atraumatically artificially inseminated ferrets by laparoscopy using frozen-thawed spermatozoa. Researchers use this fiber-optic system to deposit sperm directly into the uterus through the abdominal wall. To date, the procedure has resulted in a conception rate of more than 70 percent and the births of over 200 domestic ferret offspring. Female ferrets, inseminated with sperm frozen-stored as long as one year, gave birth to 31 kits.

The Zoo advanced further in the fields of gamete research and embryo technology. Of particular significance was collaborative research with the Dallas Zoological Park which resulted in the birth of a suni antelope after embryo transfer. The Zoo became the first research laboratory to produce carnivore offspring (domestic cat kittens) from in-vitro fertilized embryos. NZP researchers have since improved laboratory procedures for producing embryos. At present, approximately 80 percent of all cat eggs fertilized in-vitro result in embryos. The Zoo has recently collaborated with State of Florida officials who manage the highly endangered Florida panther. NZP researchers used technology developed for the domestic cat, to recover puma eggs and achieved a 45 percent fertilization rate which included the production of 10 cleaved embryos.

The Department continued its studies on the effects of inbreeding on the reproductive function of free-ranging species. Two field studies compared the amount of genetic diversity with reproductive and endocrine performance. A study in the Serengeti National Park, Tanzania involved successful immobilization, recovery, and data collection from more than 60 free-living lions. More recently, the scientific staff conducted one of the first genetic-reproductive studies of the koala, collecting similar information from 60 free-ranging males living in outbred and isolated populations in southeastern Australia.

To fortify and balance biodiversity research with the discipline of species propagation, the NZP is proposing to establish a Genetic Resource Bank which will rely heavily on the rapidly developing field of cryobiology. Various task group reports have emphasized the importance of developing strategies for maintaining genetic diversity in wild fauna. Gamete and embryo cryopreservation may be instrumental in aiding the conservation and management efforts for mammals. There has been publicity directed at dwindling habitat, the loss of species and genetic diversity, and the potential of artificial breeding technology. However, no organized effort exists, either in the United States or elsewhere, to sample, evaluate, cryopreserve, maintain, and use germ plasm from animals other than common domestic species. The Genetic Resource Bank will help international efforts to preserve rare and threatened sources of biodiversity. The proposed program will have three functions:

- fundamental research in the discipline of low temperature biology and storage of viable biological cells, especially sperm and embryos;
- development and application of new ideas in cryobiology and state-of-the-art techniques of controlled breeding for conservation and propagation of rare and endangered animals; and



-- training intra- and extramural scientists in the application of cryobiological techniques to archival and conservation activities.

Animal Conservation and Propagation - The Conservation and Research Center plays a leading international role in wildlife conservation through its programs in captive propagation of endangered species, interdisciplinary research, and international training. The Center's facilities provide a unique environment for long-term propagation of endangered species, including mammals such as the black-footed ferret, Przewalski's horse, the Arabian oryx, the Burmese brow-antlered deer, the clouded leopard, the maned wolf, the red pandas, and birds such as Guam rails, Micronesian kingfishers, Bali mynahs, and red-crowned and white-naped cranes. Breeding stock of nearly 800 birds and mammals of 38 species are the core of collaborative programs with North American zoos. CRC manages scientifically many of the species under cooperative Species Survival Plans. Through these programs the Zoo will continue its leadership role in endangered species propagation.

Each year the Conservation and Research Center sponsors, for developing country nationals, a wildlife conservation and management curriculum lasting two months. Zoo staff organize this program three times a year for people of Third-World countries. For FY 1988, 27 students representing 17 countries participated. Some of the represented countries include: China, Sri Lanka, Brazil, Ghana, Kenya, Gambia, Malaysia, and Bhutan. Over 250 students from over 30 Third-World countries have participated in the course.

A new sister program for zoo biology and animal management training was held in Thailand, Malaysia, Brazil, and Burma. This program promises to promote conservation through the urban zoos of tropical countries. Recently, the Center expanded its important role in Third-World training and conservation by hiring an overseas conservation extension officer, who will work with governmental and non-governmental organizations in Asia to identify and address conservation needs through training, management, and research. The Zoo also will continue ongoing programs for American students of veterinary medicine, reproductive physiology, pathology, animal behavior, and animal management.

In 1987, researchers completed a four-year study of the endangered one-horned rhinoceros in Nepal's Royal Chitwan National Park. Wildlife scientists are analyzing the results for publication. This 15-year program on Nepal's ecology and conservation of endangered lowland habitats will continue with support from the United States Agency for International Development, the World Wildlife Fund-United States, and the Smithsonian's International Environmental Science Program. The program will soon become a self-sufficient training and research center. Other reintroduction programs that exist for Eld's deer, Guam rails, and Bali mynahs are taking place in Thailand, Micronesia, and Indonesia.

Successful animal propagation requires much cooperation between zoos. Zoo staff transfer animals between zoos for demographic and genetic management, and they deliver many animals to foreign zoos. NZP continues to explore opportunities to place rare and important species in zoos outside the United States to promote reproduction, public education, and zoological interest. For example, the Zoo transferred a pair of Eld's deer to Thailand in late 1987 to commemorate the 60th birthday of the King of Thailand. This gesture is also relevant to the breeding and the reintroduction programs in which NZP scientists are helping this endangered species. Zoo staff are responsible for the management of seven endangered species on a national or

international level. The staff are deeply committed to the long-term management of several other species.

Research - The success of the NZP programs in conservation and propagation depends largely upon the Zoo's research. The reintroduction of the golden lion tamarins to the wild would not have been possible without sophisticated and painstaking research. Zoo researchers had to study in great detail the structure of the social and family life of tamarins. This research included studying their foraging and feeding behavior. All this was required in order to successfully breed and, ultimately, reintroduce natural groups of animals capable of surviving in the forests of Brazil. There are also ongoing studies of diet, metabolism, and genetics of the golden lion tamarin. The National Zoological Park's field ecology program in the Poco das Antas Reserve, Brazil is also focusing in depth on examination of the mating system and social organization of golden lion tamarins. Their studies also include the ecology of associated vertebrates and invertebrates so that scientists can predict how and why the future population might expand. Additionally, NZP scientists are:

- charting the restoration of degraded habitat;
- studying methods of encouraging support for conservation by local communities; and
- testing new techniques for training tamarins to survive in the wild in the area of the Poco das Antas Reserve.

Research at the Zoo concentrates on understanding aspects that influence the biology and behavior of animals. One major area of interest is in growth. Studies focus on the natural development patterns of different species in order to determine the ontogenetic and evolutionary basis for species differences in adult behavior. For example, scientists are conducting studies that show the interaction of inborn behavioral tendencies with learned behavior. One application of these studies of learning is the training of adults and young of zoo born animals for survival in the wild.

Studies by Zoo staff resulted in new understanding of the growth of marine mammals. The Zoo has now accumulated reference data on the milk composition and the concurrent growth and development of several species of seals and sea lions. With these data scientists can correlate growth information with ecological and evolutionary factors. Zoo researchers studying the endangered monk seal of Hawaii are examining the finding that female seals nurse pups besides their own. The competition among the seal pups may result in some animals not receiving sufficient nutrition for survival. This behavior may derive from ecological conditions and may be contributing to the decline in numbers of monk seals. Future studies will assess whether the degree of fostering varies in different habitats.

A major new focus of research at the National Zoo is on genetic studies. A population genetics project will contribute to the long-term viability of zoo populations of critically endangered species. NZP scientists are developing automated demographic models and long-term breeding plans for zoo populations of tigers, Asiatic lions, and golden lion tamarins. The Zoo's genetics specialists are advisors to many international programs for endangered species, including Bali mynahs, California condors, black-footed ferrets, and tigers.

New molecular genetics studies show that the three forms of lion tamarins, although very different in appearance, are almost indistinguishable biochemically.



Future studies of the lion tamarins will focus on distinguishing more clearly the three types. The studies will compare the lion tamarins with other tamarin species to determine to what degree their genetic similarity is specific to them or general to all marmosets and tamarins. Geneticists are also looking at many ungulate species to determine the degree of genetic variation across a broad array of species. The Zoo is expanding technical expertise and using state-of-the-art DNA fingerprinting techniques to document pedigrees. Similar studies aim to determine population relationships for species that are almost genetically invariant.

Zoo staff are conducting important new studies on the relationship between mating systems, reproductive behavior, and genetic paternity. Studies of the behavior of purple martins suggest that the male of a pair in this colonial breeding species is not always the father of the young for which he cares. Similar results for other species of birds and mammals suggest that researchers must re-evaluate current sociobiological theory concerning kin selection and the evolution of social behavior.

The Zoo continues to make major advances in the study of animal communication. The development of a new heart rate monitoring technique in birds now allows the NZP to evaluate the physiological responses of birds to potentially stressful situations, including social interactions. Initial studies have shown that while stressed the heart rate of sparrows nearly doubles to 1,000 beats per minute. Scientists will now be able to determine whether the singing of other birds or interaction with other birds during territorial encounters results in a comparable stress level. Additional studies will focus on whether the function of singing by birds fundamentally differs between tropical and temperate climate songbirds. Evidence suggests that the former use song to determine the location of conspecifics and the latter use song to disturb listeners and to provide distance information. Scientists also are conducting in-depth studies of giant pandas' and golden lion tamarins' vocal and long distance communication as a mechanism for helping successful reproduction and maintaining group isolation and cohesion.

Numerous projects now keep the Zoo's original modest energetics laboratory busy. The successful application of energetic evaluation techniques to studies of mammalian reproductive strategies has led to an increase in research projects asking energetically related questions. The Zoo initiated studies of energy conservation in group-living tamarins and marmosets, the comparative energetics of precocial social and non-social rodents, and an examination of the energetics of social dominance and reproductive success in the eastern chipmunk in FY 1987.

In recent years the increase in research programs, students, and research associates has strained the dispersed, outdated, and cramped facilities at the Department of Zoological Research. In mid-1988, extensive renovation of the Research Building commenced. By mid-1989 it will provide modern laboratory suites for nutrition, energetics, and video and audio analysis for the growing Department. The Zoo will have improved and enlarged animal holding and office space.

In early 1988, NZP constructed a temporary genetics laboratory in the Propagation Building to support the newly established Molecular Genetics Unit. The Genetics Laboratory will expand when the renovated Research Building is opened in 1989.

Public Education and Information - The Zoo seeks to inform and educate the large and diverse audience it serves through a wide range of creative programs, exhibits, and materials. The National Zoo News, a newspaper for area teachers, keeps them informed about the Zoo and its many educational programs, ranging from multi-visit

hands-on programs to single visit programs. Teacher-training workshops are a key component of school programs. Outreach for schools includes loan kits for teachers in the Washington area, featuring objects, books, and related curriculum materials. The emphasis in recent years has been on activity-based programs, where students have opportunities for close observation of animals. New programs of this type include:

- "Dinosaurs and Reptiles," a two-visit program jointly conducted with the Museum of Natural History;
- "Invertebrates"; and
- "A Closer Look," a six-visit program for city children and their teachers.

With its support society, The Friends of the National Zoo, the Zoo offers classes to adults in conservation, animal behavior, and exotic animal medicine. Participants completing six courses receive certificates in wildlife studies. To date, several hundred people have received certificates, and many more have enrolled in the classes.

In all its programs, the Zoo is placing more emphasis on conservation education. ZooArk is a temporary exhibit on zoos and world-wide conservation programs. Developed by the Zoo, the exhibit travels to zoos throughout the country under the auspices of the Smithsonian Institution Traveling Exhibition Service (SITES). The exhibit, aimed at family audiences, includes interactive elements such as computer games and rotating panels.

The Zoo, along with the National Portrait Gallery and the Museum of Natural History, is planning an innovative museum program, "Bison, Butterflies, and Conservation" for junior high school students. This three-part program combines behind-the-scenes museum and zoo visits, historical role playing, and discussion of contemporary issues.

Educational exhibits developed in 1988 will accompany new animal displays, including Gibbon Ridge, Wetlands, Japanese Spider Crab, and Komodo Dragons. In addition, a continuing program of identification and information labels covers a diversity of subjects. A photographic exhibition entitled "The Zoo: Then, Now and Future" will mark the Centennial year, 1989.

An updated Master Graphics Plan will comprise all forms of orientation for the public, including directional signs and a map-brochure. This plan will reflect both major physical changes, such as the completed renovation of Olmsted Walk, and the major themes of the Zoo's Centennial celebration.

People across the United States are able to share in the achievements of the Zoo through print, television, symposia, and film. Nationally televised programs, such as the August 1987 Audubon Society special "On the Edge of Extinction," have underscored the National Zoo's role in preserving endangered species. Other events, like the Sunset Serenades series, featuring folk, jazz, and blues concerts, reach out to new audiences to bring them to the Park in the peaceful, early evening hours during the summer. The "Symposia for the Public" series introduces serious biological topics to the public through illustrated lectures and discussions. The eighth symposium, held in April 1988, provided a forum for the discussion of human cultures as variables that any nation must include in its strategies for development and wildlife conservation. Proceedings from several of the symposia appeared in collections. The Smithsonian Institution Press published Animal Extinctions and Animal Intelligence in 1985 and



1986 respectively, and Perceptions of Animals in American Culture is in press. The public reception of the books has been favorable.

Additional public lectures held throughout the year focus on a variety of wildlife and environmental topics. The most recent lecture was on the evolution and distribution of the lesser apes: siamangs and gibbons.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds derive from a variety of sources including allotments and fees for providing services and general use of the facilities by Trust fund units or outside organizations. The Zoo uses these funds to support and maintain its facilities, to purchase animals for the collection, to support a number of three-year assistantship positions, and to meet the salary and support costs of the Director.

Restricted Funds - Gifts and foundation grants provide these funds which support specific research projects and educational programs. The Zoo has received grants from the Packard Foundation, the PEW Trusts, and the World Wildlife Fund to support the training of Zoo professionals from developing nations in wildlife management and zoo management. The Golden Lion Tamarin reintroduction program in Brazil continues to receive outside support from various organizations.

Government Grants and Contracts - The Zoo has received a grant from the U. S. Fish and Wildlife Service to study reintroduction techniques for the domestic ferret. This is a first step to a research project for the endangered black-footed ferret.

SMITHSONIAN INSTITUTION ARCHIVES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	14	573	6	171	-	1	-	4	-	-
FY 1989 -Estimate	15	600	6	215	-	-	-	-	-	-
-Base	15	616								
FY 1990 Estimate	15	621	6	215	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	15	-	15
11 Personnel Compensation.....	466	4	470
12 Personnel Benefits.....	73	1	74
21 Travel.....	4	-	4
22 Transportation of Things.....	6	-	6
23 Rent, Communications & Utilities.....	5	-	5
24 Printing & Reproduction.....	1	-	1
25 Other Services.....	37	-	37
26 Supplies & Materials.....	17	-	17
31 Equipment.....	7	-	7
Total	<u>616</u>	<u>5</u>	<u>621</u>

Analysis of Increase

Necessary Pay..... 5

ABSTRACT - Smithsonian Institution Archives (SIA) is keeper of the Institution's records and is responsible for documenting the Smithsonian's history. As the Smithsonian grows and diversifies, so do its records. To acquire, keep, and service an adequate historical record, the Archives must grow and diversify as well. Modernization and annual resource increases are necessary to acquire, maintain, and service records for research. The Institution requires \$5,000 for Necessary Pay for existing staff funded in this line-item.

PROGRAM - SIA's staff identifies, appraises, accessions, preserves, arranges, and describes documents pertinent to Institutional history. The staff does research and provides reference service to museum staff, scholars, and the public. It advises other archives, both in the Smithsonian and outside the Institution.

Program Accomplishments - During FY 1988, SIA reviewed and redefined its program to produce a master program statement and a plan for a decade of modernization essential to serve future research. The Smithsonian's Management Committee reviewed this program and offered institutional support to meet general goals. American Management Systems, Inc. analyzed SIA functions and information systems for automation potential. All three reviews concluded SIA needs modernization, including increased staffing, equipping, automation, and facilities.

In FY 1988, SIA produced a concept paper on the management and needs of archives throughout the Institution; set up a Smithsonian Institution Archives and Special Collections Council to identify and coordinate Institutional archival program needs, concerns, and policies; completed a guide to photographic collections in the National Museum of American History, scheduled for publication in FY 1989; published a guide to Smithsonian Institution Archival, Manuscript, and Special Collection Resources; completed a major survey and draft disposition schedules for the Archives of American Art; and conducted symposia on audio-visual documentation for Smithsonian staff. The following table summarizes some activities of the Archives:

<u>Statistical Summary of SIA Activity</u>	<u>FY 1987</u>	<u>FY 1988</u>
Total Holdings at Year-end (cubic feet)	13,441	14,393
Accessions Added (cubic feet)	1,334	1,071
Reference Inquiries	1,538	1,610
Items Provided to Researchers	5,552	6,148
Pages of Copy Provided to Researchers	27,664	28,431

Staff and Facilities - Archivists, historians, technicians, and clerical personnel staff SIA. The Archives central research facility is in the Arts and Industries Building for the benefit and convenience of users. In addition, a records center on North Capitol Street holds inactive records awaiting disposition. With funding provided in FY 1989, SIA has leased remote storage in Springfield, Virginia, for records exceeding central storage limits. The availability of this leased storage space will allow the Archives to accommodate the present overflow and projected growth of its collections for the next several years. As a long-term solution to its space needs, the archives will seek to acquire comprehensive archives facilities near the Mall and security storage of documents on the grounds of the National Zoo's Conservation Research Center at Front Royal, Virginia.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An annual allotment provides funding for personnel and associated support costs.

SMITHSONIAN INSTITUTION LIBRARIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	93	5,343	10	360	-	101	-	-	-	-
FY 1989 -Estimate	101	5,161	10	390	-	2	-	-	-	-
-Base	101	5,263								
FY 1990 Estimate	102	5,338	11	417	-	3	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	101	1	102
11 Personnel Compensation.....	2,819	56	2,875
12 Personnel Benefits.....	479	19	498
21 Travel.....	24	-	24
22 Transportation of Things.....	9	-	9
23 Rent, Communications & Utilities.....	33	-	33
24 Printing & Reproduction.....	130	-	130
25 Other Services.....	801	-	801
26 Supplies & Materials.....	542	-	542
31 Equipment.....	426	-	426
Total	<u>5,263</u>	<u>75</u>	<u>5,338</u>

Analysis of Increase

Necessary Pay.....	39
Program Funds.....	36

ABSTRACT - The Smithsonian Institution Libraries (SIL) serves the Institution and the public by providing information resources and services to support Smithsonian research, curatorial, publication, and administrative activities, and participation in the creation of a national bibliographic data base and programs for publications, exhibitions, and inter-library loans. Its collections of more than one million volumes, including over 20,000 journals, are available to Smithsonian and outside scholars through a system of 14 branch libraries in 38 locations. SIL purchases books for all Smithsonian organizations and coordinates requests for automated information



sources. These services help to avoid duplicate library-related procedures and expenses within the Institution. The Institution requires \$34,000 for Necessary Pay for existing staff funded in this line-item, along with .25 workyears and \$5,000 to annualize the partial year funding of one new position approved in the FY 1989 budget. Contained in this line-item is an amount of 1 workyear and \$36,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - The Smithsonian Institution Libraries (SIL) provides both centralized and decentralized services. The central collections support multi-disciplinary research and emphasize interdisciplinary topics such as management, fund raising, conservation, and museology. The specialized collections in the branch libraries are outstanding in natural history, American ethnology and culture, tropical biology, African art, decorative arts and design, astrophysics, the history of science and technology, aeronautics and astronautics, conservation research, and horticulture. SIL's collections include approximately 35,000 rare books, primarily in science, technology, applied art, aerospace, and natural history. The largest of these rare book collections is the Dibner Library consisting of 19,000 volumes and manuscripts on the history of science and technology.

Three operational divisions compose the SIL: Research Services, charged with direct reference assistance to SI researchers; Collections Management, responsible for the selection, acquisition, and preservation of library collections; and Automated Systems, which manages the SIL bibliographic data bases, catalogues and maintains inventory control of SIL collections, and coordinates all automation of SIL operations. By centralizing acquisitions and cataloguing, preservation and conservation activities, administrative services, and interdisciplinary reference/information services, SIL has achieved system and cost efficiencies.

Research Services - The Research Services Division of the Smithsonian Institution Libraries serves as the link between the Libraries' collections and researchers. The SIL collections and services are accessible to users through 14 branch libraries and one remote annex. SIL houses the collections in 38 locations on and off the Mall, including locations in Cambridge, Massachusetts, New York City, and Panama. The level of staffing is in proportion to the size of the collections and the extent to which Smithsonian staff, visiting scholars and researchers, and the general public use each library. All branches offer sophisticated subject and information science expertise to provide users with the information they require.

In FY 1988, SIL circulated 66,965 items to borrowers both within and outside the Institution: 37,961 volumes from the SIL collections; 5,412 volumes borrowed from other libraries to meet the needs of Smithsonian researchers; 14,516 items photocopied from SIL materials; and 9,076 items photocopied from other libraries or from a commercial document delivery service. Locating articles and monographs not held by the SIL requires searching both electronic data bases and printed indices and catalogues, requesting the item on loan either through a national computer network or via the U.S. mails, and receiving items requested. SIL then delivers them to the users. Increasingly, SIL staff rely on commercial document delivery services to make information from professional journals more rapidly available.

In addition to borrowing items for SI researchers, SIL lends items to other libraries nationwide. Of the 66,965 circulation transactions in FY 1988 described

above, 6,912 represent loans of volumes and photocopies from SIL collections to users in other libraries via inter-library loan.

The Research Services staff also supports research by preparing lists of new acquisitions and bibliographies on specific topics. Bibliographies direct users to new sources of information and are particularly useful in responding to frequently asked questions or for topics of general interest. SIL distributes several hundred bibliographies annually in response to inquiries, especially from the branches in the Museum of African Art, the National Zoological Park, the Museum Reference Center, and the Office of Horticulture. Some of these bibliographies, as well as acquisition lists prepared by these and other branches, are in such demand that SIL distributed them on a regular basis to other libraries both in the United States and abroad as well as to individual scholars and interested members of the public.

Reference staff assist researchers daily. In FY 1988, they responded to 74,160 reference questions. These ranged from straightforward requests for names, dates, and places to complex questions requiring several hours, if not days, of investigation to answer. To find the information requested, the staff uses a wide variety of reference tools, including standard published reference works and electronic data bases. Many branches also produce form letters in order to respond efficiently to frequently asked questions.

The Research Services Division is also responsible for the housing and maintenance of the collections. In FY 1988, SIL moved or renovated several branches in order to provide additional and better quality space in which to house the collections and provide improved reading and study space for users. The Smithsonian Environmental Research Center (SERC) branch library moved into new quarters in the renovated Calf Barn. The National Museum of American History (NMAH) reclaimed the storage area which housed some 45,000 serial volumes, plus trade catalogues and auction catalogues that the branch itself could not accommodate. Part of this collection moved to the Smithsonian Institution Libraries Remote Annex (SILRA) at 1111 North Capitol Street. The remainder relocated to a new temporary storage area in the Museum to await the construction of the Dibner Study Center which will house it eventually.

SILRA itself underwent renovation, including the installation of air conditioning and expansion of floor space to accommodate the materials transferred from NMAH. Improved environmental conditions increase the longevity of collections by retarding the rate of deterioration. SILRA also serves as a processing/staging area for other large collections and houses a preservation facility.

In the National Museum of Natural History, the Department of Anthropology provided an additional room adjacent to the present library to relieve the overcrowding in the stacks and permit the continued growth of the collection. Having added shelving and rearranging the current reading room, the Department of Anthropology can accommodate several thousand volumes in the new space. Finally, to provide additional office space for the National Air and Space Museum (NASM), the NASM Branch Library installed compact shelving and consolidated collections.

Collections Management - Staff of the Collections Management Division select, acquire, preserve, and deaccession all library materials that form the SIL collections, which now contain more than 1,024,000 volumes. In early 1988, the



Institution approved the revision of SIL's Collections Management Policies, which serves as a guide for collections acquisition, control, maintenance, and deaccession.

The spiralling cost of serials subscriptions forced SIL in FY 1988 to cancel many duplicate subscriptions as well as titles of lesser value. Inflation is particularly acute in foreign journals because of the weakness of the dollar abroad and the rise in rates charged to North American subscribers. Funding provided in FY 1989 will partially offset the cumulative erosion of purchasing power due to these factors.

In February 1988, SIL hired a preservation specialist to initiate, establish, and administer preservation policies and procedures to enhance SIL's ability to preserve its non-rare materials. A 1986 preservation survey revealed that nearly one-third of the collections housed outside rare book facilities are too brittle to withstand continued use. At particular risk are volumes published between 1870 and 1930; over 90 percent of them are severely deteriorated. As a first step, SIL contracted with a commercial micro-publisher to film a 2,200-volume collection of publications resulting from international expositions held all over the world between 1834 and 1915. The project began in October 1988. SIL will also produce an illustrated guide to accompany the microform collection.

In June 1988, SIL began to administer the Smithsonian International Exchange Service (IES). International Activities previously managed this office, formerly known as the Office of Publications Exchange. IES assists non-profit institutions located in the United States. The organization sends pre-addressed educational materials to interested foreign institutions, often on an exchange basis. In FY 1988, the service transmitted 60,569 packages to foreign addresses and 30,012 packages to U.S. institutions (over 150,500 pounds of mail.) IES is now part of SIL's Acquisitions Services, which separately maintains an active exchange program with nearly 3,900 exchange partners worldwide. SIL will review prospects for streamlining IES and for enhancing its participation in the Smithsonian's global mission to diffuse knowledge.

Automated Systems - SIL uses electronic technology for most of its internal library operations and for resource sharing and communication with other libraries.

The Institution's Bibliographic Information System (SIBIS), installed in 1984, is the major mechanism for most SIL functions. It provides an on-line system with a central bibliographic data base. Electronic processing and machine readable files that can be updated and accessed from decentralized locations are replacing manual processes and files.

For the past seven years, SIL has conducted a program to convert its manual catalogues to machine-readable format. The converted records, which conform to the highest national standards, form the SIL on-line catalogue. Through sophisticated search keys, such as key word searching, SIL makes collections accessible from any location within the Institution. In FY 1988, SIL completed the basic conversion of standard manual files with approximately 375,000 records added to the data base. The program now concentrates on upgrading and converting partial and substandard records. SIL will continue to barcode each volume represented in the on-line catalogue to allow electronic identification and circulation control.

Since 1974, SIL has participated in the Online Computer Library Center (OCLC), a national bibliographic utility, with more than 8,000 member libraries, and a data

base of more than 18 million records. SIL uses OCLC for creating and sharing records of its collections and for on-line interlibrary loans.

The SIBIS acquisitions module is for on-line ordering, processing of orders, account maintenance, interface with accounting, and on-line access to order information. SIL implemented automatic claiming of books ordered, but not received, in FY 1988. The system tracks ordered items for expected delivery date and automatically generates a claim notice for overdue items.

The SIBIS electronic mail system for inter-office communication has fostered better and faster communication between SIL staff.

During FY 1988, a Circulation Implementation Committee planned all aspects of the SIBIS automated circulation system. As a first step in automating, SIL began phasing in the circulation data base in 1988. The new circulation system became operational in the first branch, African Art, in October, 1988. The automated system will track the location and status of works in SIL collections. It also will improve accountability and security, and provide more accurate data about the use of the collections.

In 1988, SIL installed a local area network (LAN) in its central administrative offices. Fifteen microcomputers run word processing and spread sheet software. It allows administrative staff to share files, modems, and printers, saves keying time, and minimizes errors due to rekeying.

Although SIL has used microcomputer technology since 1984, in FY 1988 SIL established system-wide policies and standards for software, hardware, maintenance, and training. The majority of SIL staff now employ microcomputers to improve productivity as well as the quality of daily work.

During 1988, SIL continued the cataloguing of previously uncatalogued gift and trade literature collections, with contract work supplementing the work of in-house staff. During FY 1988, SIL catalogued almost 13,500 titles by contract. In addition, SIL indexed and added over 2,300 trade catalogues to the SIL on-line catalogue. SIL began to catalogue the trade collections, previously indexed for access only through the SIL on-line catalogue. SIL will add these collections to the OCLC data base for access by researchers nationally. SIL also began cataloguing rare items in the Cooper-Hewitt Museum branch library, approximately 100 volumes by contract. Because of the difficulty and complexity of original cataloguing required for most of the older uncatalogued collections, progress is slow and over 200,000 items await processing.

Outreach -- In FY 1988, SIL continued its commitment to national and international responsibilities via a series of lectures, exhibitions, and translated publications. On February 16, 1988, the SIL, as a member of the Washington Collegium for the Humanities (WCH), presented "Alchemical Death and Resurrection: Alchemy in the Age of Newton," a public lecture for the WCH Spring Lecture Series, "Death and the Afterlife in Art and Literature."

SIL published two illustrated catalogues, one to accompany its exhibition, "Book Conservation Laboratory Tenth Anniversary Exhibition," held in the Dibner Library, Special Collections Branch, October 1987 through January 1988 and the other for SIL's exhibition "Marbled Papers in Books" which opened in September. In February 1988, SIL presented a Memorial Exhibition in honor of Bern Dibner (1897-1988) which highlighted



his life and accomplishments. From May through July 1988, an exhibition of selected issues of 19th- and 20th-century journals purchased from The Franklin Institute in Philadelphia was on display in the Dibner Library. SIL also produced Information for Borrowers for distribution to SIL users.

With funding from the Institution's Special Foreign Currency Program, the Libraries administers the Science Information Program for Translations. The U.S.-India Fund for Educational, Cultural, and Scientific cooperation provides continuing funding for this program. This program provides scholars with English translations of scholarly articles and monographs on the natural sciences and cultural history originally published in foreign languages. The National Technical Information Service (NTIS) and the National Translations Center register the published translations to ensure their wide-spread availability to scholars. Currently, SIL is administering the editing by scholars of 13 translated manuscripts, and seven other works are in production in India. The five works published through this program include: Description of the Tula Weapon Factory in Regard to Historical and Technical Aspects (orig. pub. Moscow, 1826), Mammals of the Soviet Union, Vol. I (orig. pub. Moscow, 1961), Fossil Cetacea of the Caucasus, Larvae of Owlet Moths (Noctuidae), and Keys to the Insects of the European Part of the U.S.S.R., Vol. V, Part 1.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An allotment funds administrative salaries and related support costs including travel, training, and supplies. A program allotment supports such special events as public lectures and seminars. Purchases in honor of Bern Dibner, longstanding SI benefactor, and from the Franklin Institute exhausted a special purpose fund in 1988.

Restricted Funds - Gifts and grants from individuals, foundations, endowments, organizations, and corporations provide these funds for specific purposes. These funds will support the preparation costs for a future publication on international expositions and provide for the purchase of rare volumes on the history of science.

MAJOR SCIENTIFIC INSTRUMENTATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS <sup>1</sup>		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	-	-	-	-	-	-	-	-	-	-
FY 1989 -Estimate	-	1,206	-	-	-	-	-	-	-	-
-Base		1,206								
FY 1990 Estimate	-	2,176	-	-	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

<sup>1</sup> FY 1988 expenditures of \$525 thousand for Major Scientific Instrumentation are reflected in the SAO line-item.

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	-	-	-
21 Travel.....	39	-	39
23 Rent, Communications & Utilities.....	5	-	5
24 Printing & Reproduction.....	3	-	3
25 Other Services.....	694	970	1,664
26 Supplies & Materials.....	140	-	140
31 Equipment.....	325	-	325
Total	<u>1,206</u>	<u>970</u>	<u>2,176</u>

Analysis of Increase

Program Funds..... 970

ABSTRACT - The development of major scientific instrumentation is vital to enable Smithsonian scientists to remain at the forefront of their fields. Because of the magnitude of the costs to fabricate new instruments and to reconfigure existing ones, the Institution requests funding for such projects under this subaccount, rather than under individual bureau line-items. Since these projects will, of necessity, require long-term development and multiyear funding, the Institution also requests that funds in this subaccount be available until expended.

For FY 1990, the Smithsonian requests no-year funding of \$2,176,000 to continue the design of the submillimeter telescope array (\$1,281,000) and the conversion of the Multiple Mirror Telescope (\$895,000). In addition, the Institution asks for funding

for the personnel costs associated with the submillimeter telescope array design study as one-year funding in the Smithsonian Astrophysical Observatory (SAO) line-item. However, the justification for those positions is included here because of their relationship to the Major Scientific Instrumentation request.

PROGRAM - The development of major scientific instrumentation, such as telescopes, requires research and development (R&D) over an extended period of time. Teams of Smithsonian scientists, technicians, and contractors, focused on critical telescope subelements such as optics, detectors, receivers, and support structures, are engaged in these R&D efforts. To facilitate the unique extended R&D efforts that are integral to the acquisition of major scientific instrumentation, the Institution established this no-year subaccount in the FY 1989 budget.

In the FY 1989 budget, the Smithsonian requested funding under this subaccount for two projects for the Smithsonian Astrophysical Observatory:

- the development of an array of submillimeter telescopes; and
- the conversion of the Multiple Mirror Telescope.

Both of these forefront scientific projects involve the fabrication of major new instrumentation that will take a number of years to design and complete. SAO anticipates the development of the submillimeter telescope array to continue through the mid-1990s. SAO estimates that the array will require total funding at \$30 million (1987) for construction on a continental site and about 25 percent more on a site in Hawaii. SAO expects to complete the conversion of the Multiple Mirror Telescope by FY 1994. SAO estimates the total cost to the Smithsonian for the conversion will be \$10 million (1987).

EXPLANATION OF PROGRAM INCREASE:

Design Study for an Array of Submillimeter Wavelength Telescopes (\$1,281,000) - SAO's submillimeter wavelength telescope array will make fundamental contributions to astronomy and astrophysics in several areas.

(1) For studies of star formation, the array offers the prospect of detecting and studying gas falling into very young stars and, thereby, gaining detailed knowledge of how stars are formed. With unprecedented resolution and sensitivity, the array will provide images of high-velocity gas flows from recently formed stars. These images will elucidate the mechanisms that limit the growth of a star and will help to answer the fundamental question: Why is the sun the size it is? The array will map the structure and motions of the disks that eventually contract into stars. Scientists will then be able to study the way in which these factors cause multiple star systems and planets to form.

(2) Use of the array will generate new information about galaxies. Detailed maps of the emission from carbon monoxide molecules will provide our first clear view of the spiral structure of galaxies outlined by giant molecular clouds. The array also will allow astrophysicists to study the emission from the dust surrounding young stars in galaxies. Study of these emissions will reveal centers of star formation not visible with optical telescopes. These two new views of galactic structure will expand our understanding of the now mysterious ways that spiral patterns in galaxies originate and sustain themselves.



(3) Because of its high sensitivity, the array will provide accurate measurements of the submillimeter wavelength emission from quasars and active nuclei of galaxies. These measurements will clarify the relationship between these enormously energetic objects and reveal the source of their energy. These measurements also will be crucial to distinguishing between the mechanisms leading to quasars that emit radio waves and those that do not. An explanation for these mechanisms is one of the most important unsolved enigmas in our quest for understanding the source of energy in quasars.

(4) The array will give new information about the surfaces and atmospheres of planets and other objects in the solar system. Maps of Mercury, Mars, Saturn's rings, and some dozen other bodies will reveal the temperature and structure immediately beneath the surface. This information is needed to understand the nature of the subsurface composition. New data gathered on emission from molecules in the atmospheres of Venus and Saturn's satellite Titan should also provide insight into planetary weather.

(5) Finally, the array is likely to make unexpected discoveries. Only a few telescopes will be able to work at submillimeter wavelengths. The array's ability to discriminate spatially will be at least ten times greater than that of any of these other, single, submillimeter telescopes. If the past is any guide, this unique capability should lead to serendipitous discoveries.

**Scientific Justification** -- The last frontier for ground-based astronomy consists of observing the skies with telescopes sensitive to submillimeter waves, light with wavelengths between those of infrared and radio waves. The radiation from the formation of stars and planetary systems, and from the puzzling processes taking place in the cores of galaxies and quasars, is usually most intense at submillimeter wavelengths. Therefore, scientists can best study such processes at these submillimeter wavelengths. Only in the past few years has technology advanced sufficiently to allow the construction of telescopes that can observe the universe at submillimeter wavelengths.

In 1982, the ten-year plan of the Astronomy Survey Committee of the National Research Council (NRC) recognized the desirability of submillimeter wavelength observations. Several single-antenna telescopes capable of such observations are now under construction or beginning operation. These telescopes should dramatically advance the field. However, none of them will be able to discern details finer than about 10 seconds of arc. This limitation means that their resolving power will be less than one-tenth of the leading astronomical instruments in other wavelength regions, including the Very Large Array (VLA) and the Hubble Space Telescope (HST).

The NRC study also recommended development of advanced spatial interferometers at all wavelengths to improve resolving power. SAO's submillimeter wavelength telescope array will be a premier response to the NRC's recommendation. In 1983-1984, a committee of seven SAO scientists conceived the proposed interferometric array; they subsequently published a study on the scientific need for the array and its technical feasibility. In particular, SAO scientists recommended an array of six submillimeter wavelength telescopes. The array would have resolving power of better than 1 second of arc. This resolution is far finer than for any single-antenna submillimeter wavelength telescope and comparable to that of the VLA and the HST.

Astronomers worldwide received SAO's 145-page study, and 25 astronomers with relevant expertise provided detailed reviews. (SAO received about a dozen other



signed reviews.) The strong consensus of the reviews supported SAO's conclusion that a submillimeter wavelength array has very high scientific potential, is technically feasible, and is of appropriate scale for SAO to undertake.

**Status and FY 1990 Plans** -- SAO began its submillimeter program in FY 1987. In that year, SAO hired a submillimeter receiver scientist and started to equip a receiver laboratory. With funding provided in FY 1988, SAO continued to develop its expertise in the technology for submillimeter receivers and, in particular, to start the design and construction of receivers for use on existing telescopes. SAO is currently hiring the senior receiver leader. The receiver scientist will assist the senior receiver leader in development of advanced systems and devices, building on the foundation of equipment and facilities already established by the receiver scientist. With funding received in FY 1989 under this subaccount, SAO is beginning a detailed design study for the planned array of submillimeter telescopes.

For FY 1990, the Institution requests a total of \$1,281,000 in no-year funding to complete the design study. This total represents an increase of \$670,000 over the FY 1989 level. The main elements of the FY 1990 phase of the design study and their costs are:

- site planning (\$131,000);
- antennas and enclosures (\$550,000);
- receivers (\$150,000);
- correlators (\$200,000); and
- telescope-control and data-acquisition computers (\$250,000).

The personnel costs for the project are more suited to the SAO operations budget, and SAO has requested them there. With funding received in FY 1989, SAO is hiring a project scientist, an antenna leader, and a software leader for the project. The project scientist will help define, investigate, and decide the design questions which have significant impact on the scientific capabilities of the array. The antenna leader will supervise large-scale aspects of the design and construction effort, including site evaluation, selection, and preparation, and antenna design, fabrication, and performance. The software leader will conduct computer simulations of the performance of candidate array designs, and will design the architecture of computer programs for data acquisition and analysis. For FY 1990, the Institution requests an increase in the SAO line-item to hire a mechanical engineer, a receiver technician, and a digital technician (3 workyears and \$122,000). The three specialists are needed to assist the scientists in completing work on the design of the submillimeter telescope array. SAO will also contract with outside experts, as appropriate, to study and build system prototypes and to conduct computer simulations, as part of the design study. The Institution also requests a sum of \$20,000 to support the space rental for project staff in the SAO line-item.

**Project Schedule** -- SAO expects to complete the design study by the end of FY 1990, and thereafter construction could begin. Over the following six-year period, SAO estimates that it could complete the construction of the array at a total cost of approximately \$30 million (1987), including the design study and SAO personnel costs. SAO estimates annual operating expenses for the array to be about 8 percent of construction costs. The majority of these operating expenses represent personnel costs; SAO would hire almost all of these personnel during the design and construction phases of the project.

The following chart shows the total level of funding required for the project from FY 1989 through FY 1995:

PROJECTED FUNDING FOR SUBMILLIMETER TELESCOPE ARRAY  
FY 1989 - FY 1995

	<u>FTE</u>	<u>(\$ Millions)</u>	<u>/1</u>	<u>/2</u>
FY 1989	3	0.8		
FY 1990	6	1.6		
FY 1991	18	5.1		
FY 1992	28	6.5		
FY 1993	31	6.0		
FY 1994	33	5.0		
FY 1995	<u>33</u>	<u>5.0</u>		
TOTAL	<u>152</u> <sup>3</sup>	<u>30.0</u>		

/1 Rounded to the nearest \$100,000; represents 1987 dollars.

/2 Includes all personnel costs for the project.

/3 Represents the cumulative workyear requirement over the seven year period; see text.

**Conclusion** -- When operational, the SAO submillimeter wavelength telescope array will be a major scientific instrument of international stature. The array will be unique in the world in its combination of wavelength coverage and resolving power. It will enhance the scientific competitiveness of the United States measurably. Since U.S. astronomical observations from space are suffering severe delays, the construction now of technologically advanced, pioneering ground-based instruments such as the SAO array is especially desirable.

Conversion of the Multiple-Mirror Telescope (MMT) (\$895,000) - In FY 1988, SAO began the process of converting the MMT to a telescope with a single 6.5-meter diameter mirror. This conversion will more than double the light-gathering power of the telescope and increase its field of view one hundredfold. The converted telescope will therefore allow scientists to observe many objects simultaneously; for certain types of problems, the converted telescope will then permit more than a hundredfold increase in efficiency of data collection over the MMT.

**Scientific Justification** -- The increased collecting area of the converted telescope will allow astronomers to gather, on objects 2.5 times fainter, data of the same quality as now obtained. This improvement will allow the use of the converted telescope in many new areas of research, where the extreme faintness of the objects involved precludes the use of the present telescope. Further, the added light-gathering power means that more than twice as much of the universe would be accessible for study than is now possible. SAO has already established itself as a world leader through the discovery and study of the "bubble" structure of the universe. Expanding such studies beyond the MMT's present horizon will be very important to determine if even larger structures exist; if they do, we might again have to rethink our understanding of the evolution of the universe.

The expanded capability of the converted telescope also will be especially beneficial for the study of clusters of stars and galaxies. SAO astronomers could complete in a few hours projects which now require many nights on the MMT. For example, SAO scientists could conduct studies of the dynamics of clusters of stars, an area in which SAO scientists are among the world leaders. Similarly, the study of clusters of galaxies, hitherto prohibitively demanding of telescope time, would become feasible. Research on these clusters may hold the key to an understanding of the

distribution of matter in the universe. This distribution has a fundamental bearing on the evolution of the universe, in particular on how galaxies formed--a question that has baffled scientists for decades.

In addition, it will be possible to measure the velocities of gas in very distant galaxies. Astronomers can then compare these velocities, which are often related to the intrinsic brightnesses of the galaxies, with the apparent brightnesses of the galaxies to determine their distances. This technique would allow us to determine the rate of expansion of the universe when it was younger. A measurement of this rate is critical if we are to understand the evolution and ultimate fate of the universe: will it continue to expand forever, or will it eventually collapse?

The increased collecting area will allow pioneering studies of certain rapidly changing astrophysical phenomena. In such cases, changes occur too rapidly for astrophysicists to study them with any of today's telescopes. For example, some of these rapidly changing processes take place in double stars. The members of these stars are so close to each other that their surfaces almost touch. Scientists similarly can study phenomena in systems with one star whose core is so dense that not even light can escape from it--a black hole. Such systems give rise to very unusual conditions; their study would be possible with the converted telescope and would allow us to gain insights into new physical processes.

These examples provide just a small sample of the scientific justifications for the conversion of the MMT. A conference held at SAO in April 1986 resulted in a 50-page proceedings which discusses in more detail the various reasons for the conversion.

**Status and FY 1990 Plans** -- With funding provided for the conversion project in FY 1987, FY 1988, and FY 1989, SAO is:

- purchasing the materials required for the casting of the mirror in the University of Arizona Mirror Laboratory (the casting is currently scheduled for FY 1990);
- contracting with consulting engineers to carry out the initial conceptual design of the telescope; and
- developing the detailed design of the primary mirror support and associated thermal control system for the mirror figuring; the cell to support the mirror; and the optics-support structure and telescope drive system.

For FY 1990, the Institution requests a total of \$895,000 to continue the conversion process. This represents an increase of \$300,000 over the FY 1989 level. The main efforts in FY 1990 will be to:

- fabricate the support and thermal control system for figuring the mirror;
- begin to fabricate the primary and secondary mirror cells; and
- begin to fabricate the optics-support structure.

**Project Schedule** -- Expectations are that the conversion of the MMT will be complete by FY 1994 at a total cost to the Smithsonian of \$10 million (1987). This total includes amounts allocated in FY 1987 for glass and refractories, mostly from Institutional Trust funds, Federal funding appropriated in FY 1988 and FY 1989, and projected requirements for FY 1990 and following years, as indicated in the following chart. (The funding provided in FY 1988 was part of the one-year appropriation for



SAO. Beginning in FY 1989, the Smithsonian requests funding for the MMT Conversion as no-year funding in this sub-account.)

PAST AND PROJECTED FUNDING FOR CONVERSION OF THE MULTIPLE MIRROR TELESCOPE

	<u>FY 1987 - FY 1994</u>
	<u>(\$ Millions)</u> <sup>∕1</sup>
FY 1987	0.5
FY 1988	0.5
FY 1989	0.6
FY 1990	0.9
FY 1991	2.0
FY 1992	2.0
FY 1993	2.0
FY 1994	<u>1.5</u>
TOTAL	10.0

<sup>∕1</sup> Rounded to the nearest \$100,000; represent 1987 dollars.

**Conclusion** -- The conversion is the most cost-effective way to ensure that Smithsonian astronomers will remain in the forefront of ground-based optical and infrared astronomy through the remainder of the twentieth century and beyond.



MUSEUMS



OFFICE OF ASSISTANT SECRETARY FOR MUSEUMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	22	1,023	1	210	-	52	3	234	-	-
FY 1989 -Estimate	24	1,633	1	193	-	61	1	104	-	-
-Base	24	1,659								
FY 1990 Estimate	24	1,168	1	239	-	57	-	4	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	24	-	24
11 Personnel Compensation.....	803	7	810
12 Personnel Benefits.....	147	2	149
21 Travel.....	20	-	20
23 Rent, Communications & Utilities.....	18	-	18
24 Printing & Reproduction.....	3	-	3
25 Other Services.....	530	-500	30
26 Supplies & Materials.....	29	-	29
31 Equipment.....	109	-	109
Total	<u>1,659</u>	<u>(491)</u>	<u>1,168</u>

Analysis of Increase

Necessary Pay.....	9
Program Change.....	-500

ABSTRACT - The Office of the Assistant Secretary for Museums (OASM) provides operational oversight for 14 museums and 6 major bureaus. It manages essential museum functions, including collections management, exhibitions, education, and public orientation. OASM acts as a liaison with national and international museum organizations and conducts special studies to improve museum operations and methods. This line-item includes the Office of Museum Programs (OMP) and the Office of the Registrar. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Office of the Assistant Secretary for Museums. The Institution requires \$9,000 for Necessary Pay for existing staff funded in this line-item.

This line item includes a reduction of \$500,000 for one-time funding appropriated in FY 1989 to develop and implement a national educational outreach program. In FY 1989, these monies will fund "Remember the Children," a traveling exhibition about the Holocaust developed by the Capital Children's Museum and geared for a young audience.

PROGRAM - I. The Office of the Assistant Secretary for Museums - The Office oversees the operating and public functions of Smithsonian museums and encourages the development of new techniques in museum administration and practices. The Office administers two Trust-funded programs, the Collections Acquisition Program, which helps with the purchase of major acquisitions by Smithsonian museums, and the Special Exhibition Fund, which provides partial funding for important and innovative exhibitions. The Office is planning for the new Experimental Gallery located in the Arts and Industries Building. The Experimental Gallery will be a place where new techniques can be tested for presenting information and objects to various types of audiences. The Office also works closely with specialized committees, i.e. Native Americans, Hispanics, educators, etc.; encourages cooperation between Smithsonian and outside museums with common interests; and strives to improve public programs related to minorities, particularly Afro-Americans, American Indians, and peoples of Hispanic, Near Eastern, and Far Eastern origins. In addition, the Office works cooperatively with national and international museum organizations and professionals to promote cultural understanding and scholarly exchange, in the areas of education, exhibitions, and collections management.

II. Office of Museum Programs - The Office of Museum Programs (OMP) conducts training and provides services for museum professionals and provides a unique resource for information on museum functions and practices. OMP offers approximately 45 annual workshops on museum practices at the Smithsonian and other locations in the United States and abroad; educational opportunities, services and publications designed for the Native American community; and internships in museum practices. In FY 1988, OMP organized 80 visits to the Smithsonian for museum professionals from 25 countries and the United States and arranged 25 annual Minority Awards for two-week residencies at the Smithsonian. The staff provided museum consultations and career counseling for over 250 national and international students and museum professionals. The Office also distributes audiovisual programs on conservation and museum practices for loan and sale to museums and educational organizations. Currently, staff are completing a six-year project that provided programs for museums to increase their educational contributions to their communities. The Office supervises programs for the Museum Reference Center (MRC), a major library source of museum-related information in the United States. The MRC responded to approximately 9,000 inquiries and published Museworld as well as several new bibliographies in FY 1988. OMP participates as a leader in museum training world-wide through the International Council of Museums and other collaborating organizations.

III. Office of the Registrar - The Office of the Registrar (OR) designs systems which keep the National Collection safe from harm and permit access by the widest audience possible. The National Collection--a red diamond, a yellow orchid, a Gilbert Stewart painting, Dizzy Gillespie's oddly bent horn--reflects the diversity of American interests. The Smithsonian represents these interests through more than 135 million artifacts and specimens, each contributing to the diversity.

Researchers and the public gain access to the National Collection through the Collections Information System (CIS). Staff enters information about each object or specimen into the CIS and creatively uses this information in exhibitions,



publications and public programs. Automation of the CIS is a multi-year, interbureau effort organized by the OR. This effort identifies appropriate technology, training needs and resources crucial for effective collections management.

The OR designs inventory and internal control procedures to provide accountability for Smithsonian Collections. Collections management policy results from interaction between the OR and bureaus. In FY 1988, the OR undertook the revision of the Institution's primary collections management policy directive. Essential staff training and opportunities for the exchange of information occur through the Registrar's Council. Working with the Office of Museum Programs, the OR teaches principles and techniques of collections management to museum colleagues. As a leading participant in the International Council of Museums/Documentation Committee, the OR maps the development of collections automation systems worldwide.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Annual allotments provide unrestricted funds from the Smithsonian Institution's Unrestricted General Trust funds to support the salary, benefits, and expenses of the Assistant Secretary for Museums; expenses for directorship search committees; and Institutional memberships in professional associations. Special Purpose funds provide funding for the Collections Acquisition Program, which facilitates the purchase of major acquisitions by the Smithsonian museums, and the Special Exhibition Fund, which provides partial funding through a competitive process for important and/or innovative exhibitions throughout the Smithsonian Institution. While projected expenditures for FY 1989 and FY 1990 appear under this Office the recipient organizations reflect the actual expenditures for FY 1988.

The Office of Museum Programs receives an annual allotment for awards to minority professionals to attend OMP workshops with residencies at the Smithsonian. These awards help defray travel and subsistence expenses. In addition, OMP has two revolving Trust funds for the museum professional training program and for the audio-visual loan and sales program to accommodate fees and services.

Restricted Funds - In FY 1988, the Office of Assistant Secretary for Museums received a grant of \$58,000 from the Morris and Gwendolyn Cafritz Foundation and \$150,000 from the Rockefeller Foundation for the development of an Experimental Gallery to study alternative approaches to exhibition design and production. Fund raising for this project is continuing, and additional grants are anticipated for FY 1989 and FY 1990.

The Kellogg Foundation sponsors the Office of Museum Programs' project to "expand the educational influence of museums" and has since FY 1982. The purpose of the grant is to establish a network of museums in the United States who then examine issues and provide means of implementation so that museums can increase their educational impact in their communities. Decision-makers from museums and representatives from other educational sources explore all aspects of museum operations. These grants will cease at the end of FY 1988, and OMP will disseminate the print and non-print products of the project.

NATIONAL MUSEUM OF NATURAL HISTORY/MUSEUM OF MAN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	504	24,375	3	219	4	1,924	19	2,319	24	1,270
FY 1989 -Estimate	570	26,292	3	224	4	700	17	4,174	18	1,139
-Base	570	26,913								
FY 1990 Estimate	584	27,573	3	322	6	664	18	4,032	18	1,172

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	570	14	584
11 Personnel Compensation.....	18,695	462	19,157
12 Personnel Benefits.....	2,799	198	2,997
21 Travel.....	438	-	438
22 Transportation of Things.....	70	-	70
23 Rent, Communications & Utilities.....	112	-	112
24 Printing & Reproduction.....	301	-	301
25 Other Services.....	2,586	-	2,586
26 Supplies & Materials.....	977	-	977
31 Equipment.....	914	-	914
Collections Acquisition.....	10	-	10
32 Land & Structures.....	11	-	11
Total	<u>26,913</u>	<u>660</u>	<u>27,573</u>

Analysis of Increase

Necessary Pay.....	334
Program Funds.....	326

ABSTRACT - The National Museum of Natural History/Museum of Man (NMNH/MOM) houses the largest and most valuable assemblage of natural history specimens and human artifacts in the world. The Museum staff is actively engaged in the care, conservation, and study of these collections. The scientists and scholars conduct research on living and fossil animals and plants, rocks, minerals, and meteorites. Studies of human artifacts are illuminating human biological diversity and cultures,

ancient and modern. The Institution requires \$205,000 for Necessary Pay for existing staff funded in this line-item, along with 4.5 workyears and \$129,000 to annualize the partial year funding of 18 new positions approved in the FY 1989 budget. Also contained in this line-item is an amount of 9 workyears and \$326,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - The collections of the National Museum of Natural History/Museum of Man contain more than 118 million specimens of plants, animals, fossils, rocks, minerals, and human cultural artifacts. They are essential to the Nation's scientific community, because they provide fundamental documentation for the study of man and of the flora, fauna, and geology of our planet and outer space. The Museum shares its work with the scholarly community through publications, symposia, and scholarly exchanges and with the public through exhibitions, publications, and educational programs. More than seven million visitors to the Museum in 1988 are testimony to the success of NMNH's public programs. These attendance levels make the Museum the most heavily visited natural history museum in the world.

In FY 1988, the Museum's collection increased by approximately 428,000 specimens. This increase resulted from donations, purchases, expeditions of Museum scientists, and deposits from other government agencies. The Museum is responsible by law to serve as the ultimate repository for the collections of natural history, archaeology, and ethnology gathered by United States government agencies. In addition, it provides laboratory space and research facilities for 80 scientists from affiliated Federal agencies with natural history missions, such as the United States Department of Agriculture, National Marine Fisheries Service, Fish and Wildlife Service, Geological Survey, and National Institutes of Health.

Worldwide Research - Scientific research on the Museum's collections and the publication of scientific findings are fundamental to the mission of the Museum. The following includes some of the Museum's 1988 research initiatives:

--For the second consecutive year the Museum sent teams of scientists to Beni Biosphere Reserve, Bolivia, and Manu Reserved Zone, Peru. Here long-term, in-depth biodiversity inventories are underway with the collaboration of the Bolivian and Peruvian governments, host country scientists and students, and international conservation organizations. Data from these studies will help protect many of the rare and endangered species of the neotropics. Some of these plant species may yield new sources of food, medicines, biological controls, and important germ plasm for agricultural use.

--Museum botanists and colleagues from the United States, France, Germany, the Netherlands, and the Guianas explored Montagne de Tortue, a remote and botanically unknown mountain range in French Guiana, bringing back an abundance of new, barely known, or seldom collected species. The expedition was part of a long-term multinational effort to analyze the little-known vegetation of the Guianas. One goal is to determine what areas in the Guianas merit special protection based on biotic diversity.

--Museum scientists investigated the remnants of a vast coastal forest that was once continuous along the northern Atlantic coast of Brazil. Because of logging, only patches of forest survive. Sugar and cocoa plantations grow where forests once stood. The survey was part of a long-term Museum study of the composition,



distribution, and evolution of the plants and animals in Amazonia and the Atlantic Forests.

--The Folsom people who hunted bison and other game animals in the western portion of the Great Plains and Rocky Mountain regions between 10,900 and 10,400 years ago were among the earliest human inhabitants of the Americas. In 1988, Museum archaeologists continued investigations of a Folsom site in the San Luis Valley, Colorado, uncovering new data bearing on the activities of roving Folsom hunting bands. A team of volunteers from the newly initiated Research Expeditions Program helped the scientists. The Smithsonian National Associates Program sponsors this program.

Conferences and Workshops - The Museum organizes major international symposia to stimulate and help the exchange of scientific knowledge and ideas. Symposia also provide the public with greater knowledge of important scientific research. In addition, the Museum sponsors training workshops to provide important help to the scientific community. The following includes some notable 1988 gatherings:

--The Museum organized an international workshop to reassess and clarify the systematic status and biological knowledge of squid, octopuses, and cuttlefishes, families important throughout the world as fishery resources. The meeting brought together for the first time experts from China, Japan, the Soviet Union, Australia, and ten other nations and will result in an up-to-date handbook that will contain natural history data useful to biologists, ecologists, and fishery resource managers.

--"Americans Before Columbus: Prehistoric South Americans" was the Museum's second Quincentennial Public Forum. This forum gave the public an opportunity to hear seven leading South American anthropologists discuss research findings on the first human habitation of South America.

--Fifty Bolivian and Peruvian biologists and 17 Puerto Rican biologists attended Museum biodiversity training workshops held at Beni Biosphere Reserve, Bolivia, Manu Reserved Zone, Peru, and Luquillo National Forest, Puerto Rico. The Museum will train hundreds of host-country biologists and conservationists as the Biodiversity Program expands. This training will help develop inventories of species in these tropical ecosystems.

Research Publications - A Museum oceanographer reported, in the April 1988 issue of Science, that the northeastern edge of the Nile delta is rapidly subsiding. The rise in sea level and the Aswan Dam's blockage of normal sediment flows on the Nile river worsen the condition. This situation could result in flooding of a large part of the northern delta plain by the year 2100, inundating agricultural lands where several million people now live. These findings result from a multidisciplinary study in the Delta directed by the Museum in cooperation with the Egyptian government. This article was one of the approximately 500 scientific papers and articles published this year, as in past years, by the Museum staff. Many of these papers have a major impact on the world scientific community.

Collections Management - Aided by the Institution's Office of Information Resource Management, a multi-year effort to convert the collections inventory data base to a modern on-line Collections Information System is underway. This system will allow more effective scholarly use of the Museum's vast collections and help maintain inventory control. Approximately one million records are now accessible through this system.



--NMNH/MOM is working with the Massachusetts Institute of Technology on the development of an electronic collection image system of the Museum's Native American artifacts. One goal is to provide Native American artifact images to tribal museums and educational institutions throughout the country.

--NMNH/MOM continues its development of long-range conservation strategies in an effort to improve physical care of the collections. A department-by-department survey is underway to determine conservation priorities.

--Continuing projects in 1988 included moving approximately 1.5 million specimens to the Museum Support Center; cleaning and stabilizing 10,000 collection items to prepare them for the move to the support center; incorporating nearly 850,000 items acquired in 1987 into the collection; and maintaining the loan and exchange programs, the most active of any museum in the world. The Museum loans or exchanges an average of 300,000 items annually.

Notable 1988 acquisitions include:

--A collection of 9,000 display quality seashells of rare form, pattern, and color;

--A 5.03 carat red diamond, one of only five documented red diamonds in the world; and

--A complete skeleton of a 90-million-year old shark, the finest of its kind ever discovered.

Exhibits - "King Herod's Dream: Caesarea on the Sea," a Smithsonian Traveling Exhibition Service exhibition, drew nearly 300,000 visitors to the Museum's Thomas M. Evans Gallery during its three-month showing in 1988. This exhibition traced the colorful history of Caesarea, which was an ancient Mediterranean seaport and a significant center of early Christianity.

--"Plains Indian Art--Continuity and Change" was an exhibit of contemporary Plains Indian art showing the influence of tribal traditions. Organized by the Museum's American Indian Outreach Program, the exhibition compared objects made in the 19th century, from the Smithsonian collections, with similar objects made by contemporary Plains Indian artists.

--"Andrew Jackson Grayson: The Audubon of the West" exhibited paintings by a brilliant self-taught 19th-century American artist. This exhibition, presented by the Museum in cooperation with the Oakland Museum, was the first public showing of Grayson's 156 surviving bird paintings.

--"Crossroads of Continents: Cultures of Siberia and Alaska," an exhibition developed jointly by the Museum and the Soviet Academy of Sciences with the collaborative aid of the International Research and Exchanges Board, opened in September 1988. The exhibition marks the first time that the people of both continents have the opportunity to view many early and important archaeological and ethnographic collections from the remote but important North Pacific geographic region. The exhibition will travel to seven cities within the United States and Canada and, in the Soviet Union, Moscow, Leningrad, and two other cities.

--A U. S. - Soviet symposium complemented the "Crossroads" exhibition, presenting new findings on the little-known history of North Pacific peoples, and the Smithsonian Press published a 360-page exhibition catalogue with contributions from Soviet and American scholars. A "Crossroads" school packet and film program is under preparation.

--Planning is in progress for "Vision of the Americas," a new permanent exhibition hall that will explain the diversity and dynamics of Native American life. In 1988 members of the planning committee visited Alaska, Washington, and British Columbia to view Native American exhibits, museums, and cultural centers and meet with representatives of Indian tribal, political, and cultural organizations. An objective was for Museum staff, during this early design stage of the exhibition hall reconstruction, to learn the manner of representation preferred by Native Americans.

Work continues on the Museum's permanent paleontology hall, "Fossils: The History of Life." In September 1988, the public had a chance to view the renovated exhibit of the conquest of land by plants and animals 420 million years ago. Among the highlights is a diorama of one of the world's early forests, 395-345 million years ago.

Education - Relying on nearly 300 docents who volunteer to provide educational services, the Museum's Office of Education produces programs and develops instructional materials to accompany Museum exhibits. Special facilities include the Discovery Room, a nationally known hands-on facility for children; the Naturalist Center, where natural history objects, books, and equipment for visitors aged 12 and older are available; and the live Insect Zoo. The Museum's Friday Film and Lecture Series presents weekly programs throughout the year.

Among the special activities in 1988 was the annual Indian "walkaround," which brought more than 10,000 Washington area children to the Museum in November. Demonstrations, exhibits, and touch-it objects provide a unique opportunity for very young children to be introduced to the diversity of Native Americans. In connection with the "Crossroads" exhibit, 15 Eskimos from Anchorage and Nome conducted performances and demonstrated crafts.

#### NONAPPROPRIATED SOURCE OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds derive from a variety of sources, including annual allotments for special purposes: the Museum's share of net proceeds from the Museum shop, cafeterias, vending machines, and other receipts, such as sale of educational posters and folios; royalties from Smithsonian Press staff publications; and tuition reimbursement grants from local universities for courses taught by Museum staff. During FY 1988, allotments funded personnel costs of the museum director, administrator for the Marine Systems Laboratory, a computer statistician to help Museum researchers, and a research assistant for the Hawaiian Fossil Bird project, and provided support for events related to the opening of new exhibitions. An allotment also provided temporary support for research on the evolution of terrestrial ecosystems, documenting the characteristics of ecosystems before and after major environmental disturbances and the emergence of human impact. Special Purpose funds help finance exhibit hall brochures, preparation of audio-visual materials, special research publications, field research, Museum internships and fellowships, travel and supplemental training for support staff, specimens and tools for the Naturalist Center, and furnishings and educational materials used in the Discovery Room.

In addition, funds from the Institution's Collections Acquisition Program, Scholarly Studies Fund, Educational Outreach Program, Research Opportunities Fund, Smithsonian Society, International Exchange Program, and the Special Exhibition Fund support research, education, and exhibition projects. During FY 1988, these Institutional funds helped develop educational outreach materials and innovative public programs for a new audience: newly arrived Southeast Asian refugees and immigrants to the greater Washington metropolitan area; a study establishing baselines and evaluating changes of the north-central Nile delta in the Quaternary Period; and production of an exhibit, "Beyond the Java Sea: Art of Indonesia's Outer Islands."

Restricted Funds - These funds are in the form of restricted endowments that specify the use of the donation or bequest and of gifts and grants provided by individuals, foundations, and corporations for specific purposes. Such funds provide support for a particular exhibition or research project. Among these restricted funds is a field-based and laboratory research investigation of carcinogens in the waterways of north central U.S., funded by the National Fisheries Contaminant Resource Center. A gift from Mill Pond Press will support biological research in the arctic region.

In FY 1988, the Museum's Marine Systems Laboratory completed its Great Barrier Reef project, advising the Park Authority in Australia on building the "Coral Reef Aquarium," under funding through the American Australian Bicentennial Foundation, Reader's Digest, NALCO Chemical Company, Philecology Trust, United Airlines, and Hewlett-Packard Corporation.

In FY 1982, the Museum undertook the management of the Smithsonian Marine Station at Link Port, Florida, as an integral part of its marine research program. The Hunterdon Endowment supports oceanographic research at this facility, which offers a unique environment in which to study an oceanographic transitional zone between temperate and tropical biotas. Research focuses on the life history, systematics, and ecology of a wide spectrum of plant and animal marine life. Contributing to the research efforts are a resident scientist, dozens of Smithsonian visiting scientists from NMNH/MOM and SERC, postdoctoral fellows, and numerous national and international visiting investigators. The Seward Johnson Endowment Fund also provides support for operation and maintenance of the Johnson-Sea-Link submersible program conducted at the facility by the Harbor Branch Oceanographic Institution (HBOI). In 1987, the Smithsonian and HBOI signed a long-term lease agreement for land upon which the Institution could construct a Smithsonian laboratory and residential facility, for which a conceptual design is being prepared.

Government Grants and Contracts - Various government agencies and departments provide these funds for special projects which the Museum can conduct because of its unique scientific expertise in certain fields. An example of continuing government contract support is the national center for processing and distributing polar biological specimens and data, funded by a contract from the National Science Foundation to the Smithsonian Oceanographic Sorting Center. During FY 1988, the Institution completed the Systematics of Aedes Mosquito Project, contracted by the U.S. Army, as well as the Turks and Caicos Smithsonian Research Grant, funded by the Agency for International Development to help develop the Caribbean king crab as a food resource for the Third World.



NATIONAL AIR AND SPACE MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	217	9,308	3	194	46	3,837	2	899	7	308
FY 1989 -Estimate	215	9,552	3	261	45	4,183	2	937	5	298
-Base	215	9,787								
FY 1990 Estimate	216	9,904	3	251	45	4,004	2	738	4	200

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	215	1	216
11 Personnel Compensation.....	6,739	82	6,821
12 Personnel Benefits.....	1,170	35	1,205
21 Travel.....	87	-	87
22 Transportation of Things.....	34	-	34
23 Rent, Communications & Utilities.....	20	-	20
24 Printing & Reproduction.....	136	-	136
25 Other Services.....	644	-	644
26 Supplies & Materials.....	446	-	446
31 Equipment.....	511	-	511
Total	<u>9,787</u>	<u>117</u>	<u>9,904</u>

Analysis of Increase

Necessary Pay..... 117

ABSTRACT - The National Air and Space Museum (NASM) is an international repository for artifacts and documentation related to the development of aviation, space flight, and space science. Through its exhibitions, research, collections management, and education programs, the Museum serves a wide public audience and a scholarly community interested in the history and technological achievements of aviation and space flight. In addition to its Mall location, NASM maintains a facility for the preservation and restoration of artifacts at the Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Maryland. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the



National Air and Space Museum. The Institution requires \$79,000 for Necessary Pay for existing staff funded in this line-item, along with 1 workyear and \$38,000 to annualize the partial year funding of four new positions approved in the FY 1989 budget.

PROGRAM - Legislation established NASM on August 12, 1946. The completion of the Mall Museum in 1976 greatly strengthened NASM's role as a national resource for public and scholarly interest in the history of air and space technology. More than 117 million people have visited the Museum since it opened, making it the most popular museum in the world. NASM's collections include more than 300 historic aircraft, 250 spacecraft, and extensive holdings of artifacts, papers, photographs, films, microfiche, video disc, and technical drawings. These resources are available for interested American and foreign scholars to study.

The exhibition program uses state-of-the-art techniques in design, presentation, and equipment to convey the excitement of the subject matter to the visitor. An active scientific research program, aimed at understanding both terrestrial and planetary geology, is an important endeavor of the Museum. Active programs in historical research, collections management, preservation, and restoration of artifacts are central to the Museum's curatorial efforts. As a public institution, NASM devotes considerable attention to education and outreach activities, providing workshops, lectures, films, planetarium presentations, docent tours, and written materials to schools and visitors to the Museum. During FY 1987, the Museum reorganized to balance its research, exhibitions, education, and collections management functions.

NASM handles exhibits preparation, collections storage and management, preservation, and restoration at the Paul E. Garber Facility in Suitland, Maryland. At the Garber Facility, the Museum has restored more than 63 historic aircraft and spacecraft from its collection, with the restoration of additional artifacts planned each year. The Garber Facility also displays approximately 90 aircraft, numerous spacecraft, and other flight-related objects. In FY 1988, approximately 50,000 people visited the Garber Facility.

Research - Research is the foundation of the Museum's efforts as a primary resource center for the science and technology of aviation, space, and geophysical science. Research findings also support the exhibitions, publications, educational, historic restoration, and archival programs. Research undertaken by the Museum staff encompasses the history of space science and exploration; the history of aeronautics; contemporary developments in these fields; comparative studies of the Earth and other planets using satellite images and data; and infrared astronomy. In addition, the Museum engages in two applied research and development programs: the historic preservation of aircraft and spacecraft, and the storage and retrieval of archival and photographic information.

-- Aeronautics: With FY 1989 funding the Museum will hire two senior level curator/historians. One will be an historian of aviation technology to keep up with the rapidly changing technology of military aviation. An area of expertise among others being considered for the second position is flight management systems and instruments collections. These new positions will eliminate current gaps in staff expertise and represent the first phase of the planned enhancement to the Museum's ongoing historical research efforts.

The Smithsonian History of Aviation book series will include scholarly monographs treating various aspects of aeronautical history, reprints of major works currently out of print, and translations of major works by foreign authors. Beginning in FY 1989, the series will reprint classics of aviation history such as Nick Komons' Bonfires to Beacons: Federal Civil Aviation under the Air Commerce Act, 1926-1938; Charles A. Lindbergh's We; and Cecil Lewis' Sagittarius Rising, an account of a WWI pilot. A goal of the series is to attract to the Museum and the Smithsonian Press the highest quality manuscripts produced by scholars working with the Institution.

Research and writing continue on several books to appear in upcoming years. These include The Wright Flyer: The Study of the Process of Invention; The Boeing 247; a catalogue to accompany the centennial exhibit on Igor Sikorsky; a publication exploring the history of the development of the small gas turbine engine in the U.S.; an historical perspective of the civil pilot training program under Franklin D. Roosevelt; and a history of Blacks in aviation.

-- Space Science and Exploration: The Museum's joint program of research and documentation of the Hubble Space Telescope, in collaboration with the History of Science Department at Johns Hopkins University, will serve as a rich source of research material for future historians and will provide a valuable current record of space technology. Cambridge University Press will publish a monograph of this work in FY 1989. This Department is also conducting historical research on satellites, the interaction of aerospace and computing technologies, spacesuit technology, weather satellites, and the Soviet space program.

The Glennan-Webb-Seamans Project continues its broad program to document and study the history of the nation's space program, with emphasis on its administration and management. In FY 1988, the project conducted oral history interviews with key administrators and program managers from the National Aeronautics and Space Administration (NASA) and other aerospace industry executives and managers. Preparation of a national survey of resources for aerospace history and an in-depth survey of Washington area resources for space history, in cooperation with NASA and the U. S. Air Force History Office, continues in FY 1989. Begun in FY 1986, the Space Astronomy Oral History Project (SAOHP) continues to conduct interviews with key participants in space science and plans a revised edition of the SAOHP catalogue for FY 1990. The success of the oral history program has stimulated interest in experimenting with video histories and has led to Sloan Foundation's funding of a pilot video history program. During the first two years, the Museum conducted video history sessions on a wide range of topics. These include the origins of the aerial reconnaissance studies at the Rand Corporation, the history of X-ray astronomy and aeronomy at the Naval Research Laboratory, aspects of the history of the Mariner Venus program, and observing techniques in ground-based astronomy.

-- Earth and Planetary Studies: NASM established The Center for Earth and Planetary Studies in 1973. By analyzing remote-sensing data from satellites, the Center researches comparative planetology and the development of the Earth's landforms and surface composition. Research projects on satellite remote-sensing of desert fringe regions increased scientists' understanding of the effects of climatic change on surface materials in Africa's Sahelian zone. The Center for Earth and Planetary Studies has also conducted field work in the inland Niger Delta of Mali, western Egypt, and northern Sudan. By combining recent satellite images with those taken 14 years earlier, researchers can better assess the movement of sand and soil that has taken place due to the recent period of drought. Research in mapping and analyzing



surface features on the Moon and Mars continued throughout FY 1988 with funding by NASA.

In FY 1983, NASA designated the Center for Earth and Planetary Studies as a Planetary Image Facility, a repository allowing researchers access to the collections of images of the planets taken by NASA space probes. Researchers from the Smithsonian and other institutions make extensive use of this facility. Plans are now underway to link the Planetary Image Facilities across the country. Using this computer network, each facility can share the images in its collection with other facilities that store images and information from different space missions.

-- Laboratory for Astrophysics: NASM opened the Laboratory for Astrophysics in October 1988. Staff scientists of this new department will initially concentrate on the development and application of state-of-the-art technology for infrared astronomical spectroscopy, including instrumentation on-board the European Infrared Satellite Observatory. They will carry out research on planetary atmospheres, star formation, galactic shock phenomena, and other astrophysical processes. This new department complements work conducted by the Smithsonian Astrophysical Observatory. In addition, it will lend scientific insight and expertise to support the Museum's curatorial staff in communicating to the public an up-to-date scientific understanding of the Universe.

Exhibitions - A new exhibition on loan from the European Space Agency, titled "Space Science Satellites," opened in August 1988. It displays four large European satellite models: Ulysses, the only planned mission to study the polar regions of the Sun; Giotto, which made the closest encounter with Halley's comet; Exosat, which studied X-ray emissions from dead and dying stars; and Hipparcos, designed to study star positions. This exhibit also features a film taken by the Giotto satellite in its encounter with the nucleus of Halley's Comet.

Additional new exhibitions opened in FY 1988 including the "U.S. Customs Service," "Robert Taylor Art Show," and "Women In Helicopter Aviation."

During FY 1989, the Museum will open "Beyond the Limits: Flight Enters the Computer Age." This major gallery, which traces the development and use of computers in aviation and space, will include hands-on displays, interactive video units, a state-of-the-art theater, and a working robotic arm.

Other plans for FY 1989 include the display of the Hubble Space Telescope Structural Dynamic Test Vehicle. This artifact simulated the effects of space conditions on the telescope in preparation for its launch aboard the Space Shuttle. The art gallery plans an exhibit of Italian futurist art work, focusing on the subject of flight, and an exhibit commemorating the centennial of Igor Sikorsky's birth. Illustrating benchmarks in his life as a pioneer designer and industrialist, this exhibit will concentrate on his designs for aircraft, seaplanes, and helicopters. The Museum will remodel the Sea-Air Operations gallery in FY 1989 to expand the Ready Room and to offer a new film of aircraft carrier deck take-offs and landings. The gallery will highlight the six major aircraft carrier battles in the Pacific during World War II, with special tribute to the USS Enterprise, the most decorated carrier of the Pacific war.

The Museum's visitor information center will open in FY 1990. This series of six interactive units, stationed throughout the Air and Space Museum, will provide visitors with current information on all Smithsonian museums, plus detailed

information on all NASM galleries, films, and presentations. Also in FY 1990, the Museum will present the work of artist Roland Emett, including drawings of his unique and whimsical sculptures, such as the Pussiewillow II.

In FY 1991, a major new gallery entitled "The Great War in the Air" will open. Emphasizing the use of aircraft as a weapon in war for the first time, this gallery will demonstrate the emergence of air power during World War I.

NASM presents films related to aviation and space flight in a specially equipped theater which uses an innovative, high-resolution projection system (IMAX) and a giant screen for extraordinarily realistic effects. The latest IMAX film, "On the Wing," which premiered in June 1986, includes a comparison of natural and artificial flight, featuring a mechanical replica of the flying reptile, pterodactyl. Another recent IMAX film, "The Dream is Alive," featured actual film footage shot by the astronauts on three Shuttle missions. A new film project planned for FY 1990, entitled "Exploring The Blue Planet," will use new IMAX film footage to be shot by the astronauts on forthcoming Shuttle missions to explain the functioning of global environmental systems. In recognition of the International Space Year 1992, the Museum will co-produce another IMAX film "To the Stars," highlighting achievements in space exploration by many different countries.

Development of Collections - In FY 1988, the Museum acquired a Lockheed T-33A, a jet trainer used by all branches of the military; a Lockheed Super Constellation, a 4-engine propeller driven airliner; a Junkers Ju 52, a highly acclaimed transport used by European and South American airlines; a McDonnell-Douglas F4S Phantom II, a Navy carrier and USAF standard fighter used in Vietnam; and a Rolls-Royce Conway turbojet engine, a pioneer jet engine used on Boeing 707s and Douglas DC-8s.

In FY 1988, other important acquisitions included a full scale model of an X-29 forward swept wing aircraft; an X-29 computer, similar to the ones used to control the X-29 aircraft in flight; a V-2 rocket gyroscopic integrating accelerometer, the first device to use a computer-programmed fuel cut-off in a rocket; an F-16 aircraft tail fin, used to test the feasibility of substituting composite material for metal in operational aircraft; and a Cray computer, the first computer powerful enough to challenge the wind tunnel as an aeronautical tool. All of these artifacts will be part of the new gallery, "Beyond the Limits: Flight Enters the Computer Age." The Museum also acquired a collection of solar X-ray astronomy detectors, representing 30 years of technological evolution; Space Shuttle insect flight boxes, used to carry insects during three Space Shuttle flights; and an infrared Fourier transform spectrometer, used for detecting complex molecules in planetary atmospheres and in interstellar clouds. NASM continually acquires from NASA missions additional space artifacts.

To date, NASM has acquired 14,000 feet of duplicate footage of original aviation newsreels produced by the Movietone News Company from 1919 to 1939. These cover subjects such as Charles Lindbergh and his Lockheed Sirius, the Spirit of St. Louis arriving at the Smithsonian Institution, Jack Northrop and the original flying wing, and the Women's Air Derby of the late 1920s. This extremely valuable footage (part of the collection of 800,000 feet of Movietone newsreel film on aviation currently owned by the University of South Carolina) is on nitrate film. Under the terms of an agreement signed with the University in FY 1986, NASM will retain a master negative and a duplicate positive film copy of any nitrate film footage transferred to safety film and return a positive copy to the University for its collection. The goal is to save all of this historically valuable material for future generations.



Preservation and Restoration of the Collections - In FY 1988, NASM completed restoration of the Fowler Gage Tractor, a wooden aircraft built in 1912; the forward fuselage of the Enola Gay B-29; and the OS2U Kingfisher, which battleships and cruisers carried for aerial reconnaissance. Restoration will continue in FY 1989 on the German Arado 234, the first jet bomber; the rear fuselage of the Enola Gay B-29; the ATS-6 applications satellite; an HS-293 Glide Bomb, a German WWII missile; the Mariner 10 structural/thermal engineering model; and the Hughes Racer, a mid-1930s technological masterpiece for aircraft speed and design. Restoration began in FY 1988 on the Hubble Space Telescope model and in FY 1989 on the Japanese Shinden, an advance design canard fighter interceptor; a 1912 French Caudron Bomber, the first airplane designed primarily for bombing; the Sopwith Snipe, the ultimate Sopwith Fighter design; a Fokker D VII, the most highly regarded German fighter aircraft of WWI; the Herring Curtiss, an early aircraft of the Curtiss pusher variety, significant in the development of flight control systems; and the Apollo 11 command module. The treatment program, initiated in FY 1983 to reduce further deterioration of aircraft not yet restored, remains at the heart of the restoration activities.

-- Video Disc Project: This preservation program for archival photographs and other visual collections consists of photographing the images on 35mm film and then transferring this film onto video disc format. The project has transferred over 500,000 images and completed six discs. By facilitating greater access to the collection and eliminating the loss or destruction of the originals, this project has expanded the availability of these vast collections to scholars throughout the world. The sixth disc, completed in FY 1988, contains images from all the lunar probes (Ranger, Surveyor, and Apollo missions), including photographs of rock and soil samples. The seventh disc, to be produced in FY 1989, will focus on photographs in the Museum's collections of rockets, missiles, manned space missions, aeronautical artifacts, and engines. Plans are now underway for discs eight and nine, which will concentrate on the Wright Field collection in FY 1990 and 1991. The program shares its technical expertise with other offices throughout the Institution.

As part of a recent reorganization, the Museum established a new Collections Management Division. One major goal of this new division is to gain better physical and intellectual control over its document and audio-visual collections by implementing a formal archival program. With funding provided in FY 1989, the Museum will be able to reinforce its support for various collections management efforts. They include locating, surveying, and describing the vast archival collection; acquisition of equipment and materials necessary to initiate the Museum's conservation program; purchase of equipment for participation in the Institution-wide automated Collection Information System (CIS); and converting the film collection to a long shelf-life format.

Public Education and Orientation - The Museum's educational programs continue to serve an expanded national and international audience. The Education Resource Center (ERC) opened in January 1988, modeled after NASA's Teacher Resource Centers, with support from NASA and other agencies. It provides slides, video tapes, photographs, software, and written materials to educators on aerospace-related topics. To date, over 2,260 teachers have visited the Center. In FY 1988, the Educational Resource Center held numerous educational workshops for in-service and graduate credit for teachers. Topics included weather, astronomy, and manned spaceflights. The Center will repeat the more popular workshops in FY 1989. In FY 1988, ERC completed curriculum materials for "Discovery" and "History of Flight," as well as a Space Shuttle Activity Book. It held summer workshops for the Anacostia community, in

cooperation with the National Urban Coalition. Everyone over eight years of age could participate in building and flying kites, hot air balloons, and rockets. The Museum received a Lindbergh Grant to develop a slide package called "Fragile Earth" and a grant from the Association of Science and Technology Centers to train teachers from the District of Columbia. Forty of the 94 members of the Museum's Regional Resource Program participated in the August 1988 meeting. They received updated briefings on the Museum's collections, research, restoration, and education programs from Museum staff.

In FY 1988, the Museum began a new educational outreach program aimed at minority students in the local community. This program provides speakers and educational materials directly to the classrooms of elementary and middle level schools. It is popular with the local community and will continue throughout FY 1989 and beyond.

The Museum created the Office of University Programs in June 1985 to support the academic activities of the Museum. This program includes liaisons with The Johns Hopkins University, the Massachusetts Institute of Technology, and Wellesley College. In FY 1987, the Museum received a grant from the Sloan Foundation for the development and presentation of a workshop, videodisc, and curriculum packages for liberal arts colleges and universities. These educational materials provide in-depth case studies on the Wright wind tunnel and the Space Shuttle.

The Museum launched Air and Space/Smithsonian magazine in FY 1986 as a bi-monthly educational and informative publication addressing broad issues on aviation and space for the public. Market research indicated a higher than average appeal for a magazine of this type. The subscription renewal rate is promising.

NASM continues to present numerous series of free lectures, seminars, symposia, and films to the public. In October 1988 the Museum sponsored a Robert Heinlein retrospective and a replay of the "War of the Worlds" radio broadcast on its 50th anniversary. The General Electric aviation lecture series for FY 1989 includes Brig. General Charles E. Yeager (USAF Ret.), Don "Bucky" Dawson lecturing on "Adventures of an Alaskan Bush Pilot" and Air-Vice Marshal Ronald Dick (RAF) on "The Schneider Trophy." The 12th annual Von Braun Memorial lecture in January 1989 will feature Dr. John McLucas on "Mission to Planet Earth." George McGovern will present the Charles A. Lindbergh Memorial lecture on "Aviation from the Perspective of Both a Pilot and a Policy Maker." Other highlights in FY 1989 include a Wright Brothers Symposium, "85 Years after Kitty Hawk"; a lecture by Frank Borman titled "Countdown"; and the commemoration of the 20th anniversary of Apollo 11, featuring a public address by the astronauts. The Exploring Space Lecture Series and the Monthly Sky Lecture continue with topics such as "The Solar Neighborhood," "Keeping the Nation's Clock," "The Angry Red Planet" and "Galaxies, Galaxies Everywhere (And Not One to be Seen)". The film series continues in FY 1989 showing popular movies, including "A Gathering of Eagles" and "The Big Lift." The Museum also offers a weekly evening of free family activities during the summer.

In August 1988, a new public cafeteria and restaurant began serving visitors to the Air and Space Museum. In a new glass-canopied addition to the building, this facility has expanded seating capacity and greatly-improved access over the original third-floor cafeteria. Museum visitors have the option of either cafeteria service at the "Flight Line" or full-service meals at the "Wright Place." From its August opening through November 1988, more than 493,000 patrons dined at the "Flight Line," and more than 43,000 dined at the "Wright Room."



Publications - In FY 1988, the Museum published the Air and Space Bibliography. Planned publications in FY 1989 and beyond include The Boeing 247; The Wright Flyer: The Study of the Process of Invention; U. S. Women in Aviation: 1940 - 1985; Our Weather from Above: America's Meteorological Satellites; an exhibition book titled Beyond the Limits: Flight Enters the Computer Age, to accompany the new exhibit gallery of the same title; Caring for the Collections of the National Air and Space Museum; and A Catalog of the Art Collection of the National Air and Space Museum.

#### NONAPPROPRIATED SOURCES OF FUNDING

Unrestricted General and Special Purpose Funds - These funds come from a variety of sources including the Museum's share of the net proceeds from the Museum shops and restaurant, the net proceeds resulting from bureau activities (such as the Theater and Planetarium), and allotments. In addition to meeting expenses of the Theater and Planetarium, these funds finance fellowships, research chairs, guest lecturers, symposia, special events, and the Director's salary and associated support costs. A portion of the proceeds from the Theater and Planetarium provide particular support for the production of new IMAX films (past productions include "The Dream Is Alive" and "On the Wing"), as well as other Institution programs. The Museum is also receiving supplemental outside funding for two new films: "Exploring the Blue Planet" and "To the Stars." In March 1989, a new show, "Calling All Stars," will premiere in the Albert Einstein Planetarium. The show traces efforts to locate life in the Universe. The Lindbergh Chair of Aerospace History, the Chair in Space History, and the International Fellowship provide continuing support for distinguished scholars to study at the Museum. Other fellowship programs include Guggenheim and Verville fellowships, which support pre- or post-doctoral students and distinguished scholars in aviation and space science.

Restricted Funds - Funds provided are in the form of restricted endowments which specify the use of donations or bequests, and of gifts and foundation grants by individuals, organizations, or corporations for specific purposes. Examples of these funds are the Ramsey Endowment, for research relating to naval flight history; the Guggenheim Endowment, for lectures and stipends; the Martin Marietta Chair in Space History, for historical research by distinguished scholars in the space sciences; and the NASM Educational Fund. The Sloan Foundation provided grants beginning in FY 1987 for a four-year videohistory program as well as a workshop, videodisc, and curriculum package on aviation history. In FY 1987 and FY 1988, NASM received numerous corporate donations, both monetary and "in kind," to support the gallery "Beyond the Limits: Flight Enters the Computer Age," as well as pledged donations for FY 1989. The Glennan-Webb-Seamans Fund for Research in Space History received additional funds in FY 1988 from corporate sources.

Federal Grants and Contracts - Various agencies and departments provide funds for special projects conducted at NASM because of the Museum's expertise in a given area. Continued funding from the National Aeronautics and Space Administration grant program supports the following research activity in planetary geology by the Museum's Center for Earth and Planetary Studies: photogeologic investigation of planetary tectonic features; the kinematic and mechanical analysis of planetary and terrestrial structural features; geologic mapping of Mars; and the Planetary Image Facility. The research project on satellite remote-sensing of central Mali, which began in FY 1984, continues to determine the long-term effects of climate change on the fragile environment of the inland Niger delta region. This research expanded in FY 1985 to monitor fringe areas of the world's deserts through the end of FY 1989, and NASM will apply for renewed financial support for FY 1990. The Space Telescope Historical

Project, a joint effort between The Johns Hopkins University and NASM, with partial funding from NASA, will complete its planned publication in FY 1989. A grant from NASA partially supports the development in the Laboratory for Astrophysics of new materials for infrared detectors. NASA also supports the participation of one staff member as Mission Scientist on the European Space Agency's Infrared Space Observatory, currently scheduled for launch in the spring of 1993.



NATIONAL MUSEUM OF AMERICAN HISTORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	316	14,044	2	199	9	1,492	6	2,218	-	85
FY 1989 -Estimate	334	14,502	3	201	9	985	5	2,321	-	-
-Base	334	14,867								
FY 1990 Estimate	340	15,666	2	184	9	945	1	1,599	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	334	6	340
11 Personnel Compensation.....	10,200	244	10,444
12 Personnel Benefits.....	2,050	105	2,155
21 Travel.....	142	-	142
22 Transportation of Things.....	45	-	45
23 Rent, Communications & Utilities.....	79	307	386
24 Printing & Reproduction.....	103	-	103
25 Other Services.....	1,387	80	1,467
26 Supplies & Materials.....	454	9	463
31 Equipment.....	317	54	371
Collections Acquisition.....	90	-	90
Total	<u>14,867</u>	<u>799</u>	<u>15,666</u>

Analysis of Increase

Necessary Pay.....	157
Program Funds.....	642

ABSTRACT - The National Museum of American History (NMAH) houses the national collections that represent the political, cultural, scientific, and technological development of the United States. The Museum devotes itself to preserving the national heritage by improving and conserving its collections and interpreting these materials for the public and scholarly community. Through exhibitions, research publications, and an array of lectures, symposia, concerts, tours and demonstrations, and film and broadcast features, NMAH presents the unique cultural and scientific

heritage of the United States to more than five million visitors per year. In addition to the Mall building, the Museum maintains the exhibition "1876 Centennial," located in the Arts and Industries Building, as well as caring for collections stored and exhibited at six buildings in Suitland, Maryland.

For FY 1990, American History requests an increase of \$430,000 to provide critical storage space for displaced collections. The Institution requires \$122,000 for Necessary Pay for existing staff funded in this line-item, along with 1.25 workyears and \$35,000 to annualize the partial-year funding of five new positions approved in the FY 1989 budget. Contained in this line-item is an amount of 5 workyears and \$212,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - The National Museum of American History possesses the largest and most comprehensive collection of its kind in the world. Covering a wide spectrum of materials, sizes, and descriptions, the museum objects include railroad trains, automobiles, textiles, photographs, paintings, sculpture, paper materials, clothing and costumes, tools, power machinery, clocks, weapons, ceramics and glass, musical instruments, scientific instruments of all kinds, one million numismatic specimens, and 14 million stamps.

In January 1989, the Museum of American History will celebrate the 25th anniversary of the opening of its present building. During its first 25 years, more than 100 million visitors have learned about American History through its exhibitions, collections and public programs.

Collections Management - The Museum preserves and protects this irreplaceable "history book of objects" through a strong collections management program that includes proper storage, conservation, registration, and archival functions.

-- Master Space Plan: The Museum's Master Space Plan is a long-term, multi-million dollar program which integrates the retrofitting of the physical building with the redesign and reinstallation of the Museum's exhibition halls. With funding provided in FY 1988, the museum hired new staff to prepare and transfer its collections in conjunction with this work. In FY 1989 and beyond, major portions of the Museum will close in phases. The new staff will pack, clean, move, store and keep records on hundreds of objects that move to offsite locations.

-- On the Mall: In FY 1988, the Museum continued active acquisition and loan programs and relocated thousands of objects under the Museum's Master Space Plan. Over 100,000 objects came into the permanent collections, while the Museum lent or borrowed 2,500 objects for exhibitions. The Collections Management Steering Committee guided efforts to complete backlogged accessions. Newly designed automated recordkeeping programs became available in the National Numismatic and National Philatelic Collections as well as the general collections. Staff began to organize and make early collection files more accessible for research and accountability.

-- Suitland Facility: In FY 1988, the Museum continued the asbestos cleanup program begun in FY 1985. This continued cleanup will make the more than one million objects stored at the Institution's Suitland facility accessible for exhibit, research and loan, and will reduce the potential health hazard to staff working with those collections. The renovation of Building 19, completed in April 1988, provides optimal environmental conditions for sensitive collections at the facility and a clean area to

receive collections from Building 17 (27,000 sq. ft.), the next major decontamination target. Building 16 (12,000 sq. ft.) is the last building slated for asbestos cleanup.

-- Museum Support Center: In FY 1987, the Museum began formal planning for the transfer of collections from several of its curatorial divisions to the Museum Support Center (MSC). In FY 1988 work progressed on identifying collections slated to move to the MSC. Staff began listing and packing dolls, toys, and patent models at Silver Hill for future shipment.

Collections Acquisition - In FY 1988 the Museum received numerous significant objects through purchases and gifts. The acquisitions include: the Duke Ellington Collection of music manuscripts, scrapbooks, photographs, financial records, recordings, and memorabilia; the Sam De Vincent Collection of American sheet music; a presentation sword given to Commodore Hiram Paulding by the Nicaraguan government in 1857 for capturing filibuster William Walker; 6 very fine and dramatic prints of Audubon's Birds of America from the original copper plates; a very rare rural American embroidered linen dress of about 1770; 300 harmonicas from the Peter Kassin collection, one of the finest in this country; a terrestrial globe made in the 1830s by D.C. Murdock of West Boylston, Ma., one of the first manufacturers of school apparatus in the United States; over 5,000 stereographs from the 1850s to the 1870s, which include images of the American Civil War and the laying of the transatlantic telegraph cable; a very rare U.S. Marine Corps bandsman's red dress coat and blue helmet from 1894; the Hoffman/Boaz Afro-American Collection of 1,500 postcards collected during the early years of the Civil Rights movement; three pieces of rare American Indian trade silver; the unique pattern strike in copper of the 1794 dollar, the first U.S. dollar; the medical laboratory instruments and notebook used by Dr. Stanley Cohen of Stanford University, who together with Dr. Herbert Boyer invented and patented the technique for producing recombinant DNA and a dozen genetically-engineered pharmaceuticals that have just appeared on the market, including the new "wonder drug" TPA (tissue plasminogen activator) used to dissolve blood clots.

Conservation - In FY 1988, the Division of Conservation rehoused or gave basic stabilization treatments to over 30,000 objects. This is part of a continuing program to survey and conserve the backlog of objects at risk because of unsafe storage conditions or fragility. With funds provided in FY 1989 the museum will hire a conservator to reduce this conservation backlog. The rehousing of the entire Graphic Arts print collection is now almost complete, with nearly 25,000 prints surveyed and put into acid-free folders and new protective boxes over the past two fiscal years. Work on the First Ladies Gowns accelerated through the hiring of a costume conservator; six of the First Ladies Gowns are now on display. The new reinstallation of the First Ladies display will open in 1991 or 1992. Planning began for the construction of a specialized laboratory devoted to the Museum's holdings of over 40,000 costumes, uniforms, flags, and other textile and fragile organic objects.

Archives - In FY 1988, the Archives Center acquired twenty-five separate archival collections. Staff primarily devoted time to cataloguing the two most significant acquisitions -- the Duke Ellington Collection of musical manuscripts and related historical materials and the Sam De Vincent Collection of Illustrated American Sheet Music. The Sam De Vincent Collection consists of 130,000 pieces of music from 1790 to the present, of which 90 percent is out-of-print and much of it quite rare. The Museum developed plans for several descriptive publications and an exhibition of the Duke Ellington material, to happen within the next few years.



Exhibitions - The Museum's long-term Exhibition Reinstallation Program calls for the redesign of many of the Museum's exhibit halls with an up-to-date interpretation and presentation of the collections. In FY 1988, NMAH installed 15 exhibitions, including some about difficult and even controversial subjects. Highlights include: "A More Perfect Union: Japanese Americans and the United States Constitution," an exhibit about the constitutional process examining the experiences of Americans of Japanese ancestry during World War II; "The Search for Life: Genetic Technology in the 20th Century," covering the history of molecular biology and its applications in agriculture and medicine; "A Material World," a permanent installation exploring the changing composition of artifacts from predominantly "natural" to "manufactured" materials; and "Frank Lloyd Wright: In the Realm of Ideas," a traveling exhibition exploring the ideas and achievements of Frank Lloyd Wright in a gallery exhibition, while a full size model of his Usonian House was on view outside the Museum.

So far in FY 1989, several significant exhibitions opened: "The American Presidency, 1789-1989" which celebrates the bicentennial of the first presidential inauguration by depicting the office of the presidency as it has evolved over the years; "Sports Feelings: U.S./Soviet Sports Photography," a traveling exhibition of American and Soviet sports photography that speaks to the universality and humanity of sports; and "'The Fabric of a Friendship' and 'Delaware 350': Commemorating New Sweden, 1638-1988," two shows which describe the contributions of early Swedish and Finnish settlers in North America and their relationship with Native Americans. Still to come are: "The Ceremonial Court," a re-creation of various White House spaces based on the original molds and castings from the White House; "The Way to Independence: Memories of a Hidatsa Family, 1840-1920," which chronicles the transformation of American society through the experiences of three members of a Hidatsa Indian family; and "Men and Women: Dressing the Part," which looks at some of the standards of appearance and behavior for men and women in American culture.

In 1986 the Museum began a five-year program of public symposiums, archaeologically-based exhibits, and related publications, leading toward the establishment of a major permanent exhibition, "American Encounters."

This exhibition commemorating the observation of the Columbus Quincentenary, will examine the history of diverse peoples of North America from the early colonization period to the present. It will present the interactions and contributions of Spanish, French, English, Dutch, Swedish, and African settlers, and the American Indians, with emphasis to the northern rim of Spanish America and the development of Hispanic culture in the United States. Scheduled to open in March 1992, "American Encounters" and its related public programs will reinforce the Museum's commitment to new audiences and provide the general public with a more accurate presentation of America's multi-cultural past.

Public Programs - In FY 1988, the Museum's Department of Public Programs presented a wide variety of education activities, publications, and media events with an emphasis on encouraging the participation of minority audiences. Popular programs emphasizing the cultural heritage of Black, Asian, Hispanic, and Native Americans included: The Program in Black American Culture, the American Sampler Series, Jazz in the Palm Court, and the Jacksonville Bandstand programs. The Museum also began a Program in Hispanic American History. This public program included a scholarly symposium, a performance/lecture demonstration, a film, and an exhibit tour. Also, the Museum expanded its recruitment of minority docents.



Other highlights of the year included:

-- the Museum-sponsored "Smithsonian National Outreach Conference" which brought together an international assembly of experts on developing and serving minority constituencies;

-- a symposium and series of performance programs on "Black Migration and the American City: Forging the African-American Urban Community," held in conjunction with the exhibit, "Field to Factory: Afro-American Migration 1915-1940."

-- "Music and Dance from the Southern Plains," featuring members of the Pawnee, Ponca, Potawotomi, and Kiowa tribes;

-- a forum on the History of Washington, D. C.'s Latino community;

-- a program of "The Songs and Stories of Working Americans," held in conjunction with the "Life in America: After the Revolution" exhibition; and

-- a special exhibit and tribute to Irving Berlin in honor of the centennial of his birth.

With funding provided in FY 1989, the Museum will hire a Hispanic program coordinator to produce a series of monthly public programs on the origins of Hispanic culture in the United States as part of the Museums's Columbus Quincentenary program. These programs, derived from a series of pilot programs presented in FY 1988, will make scholarly research on the evolution of Hispanic culture in this country available to a popular audience in a variety of formats, including video and television spots.

Research - Staff in the Department of Social and Cultural History are working on a number of significant collections-related research projects. The indexing and studying of the artifacts of Afro-American culture, housed in five Smithsonian museums, will conclude soon. The study of Old Believer Orthodox Icons resulted in an exhibition, brochure, and symposium. The SI Press will publish the results of the project in a book, available during 1990. Other research projects include: the Hispanic Collections Project (a review of some 3,000 items of ethnographic Hispanica aimed at preparing a guide in 1992); the Judaica Project (to result in an index and guide in 1991-1993); the East European Costume Project (a guide to a 1,000-piece collection); and the completion of a major volume entitled, Men and Women: Dressing the Part, which will explore how clothing reflects attitudes toward gender.

In the Department of the History of Science and Technology, research is under way on great historical clocks of America and their depiction of the American past. Staff are also analyzing navigation instruments in public and private collections for a new understanding of the manufacture and use of these instruments in Colonial America. Staff will produce scholarly publications on these as well as on the role of the military in the development of lasers and atomic clocks. Medical History staff are working on several video history projects, including a series of interviews with Dr. Ledley, inventor of the first CAT-scanner, and interviews with Dr. Leroy Hood, designer of the prototype of the first DNA synthesizer. Other ongoing projects include: a study of 19th- and 20th-century cotton gins, a history of the American railroad freight car, and research on the evolution and social impact of the computer in America. In the National Philatelic Collections staff is producing a comprehensive history of the movement of mail in America, incorporating research on newly acquired

mail wagons, vans and trucks. The Robert Mills Papers has collected and is preparing to publish in a microfilm edition over 3,000 letters and papers concerning this important 19th-century American architect, who designed the Washington Monument.

EXPLANATION OF PROGRAM INCREASE - For FY 1990, American History requests an increase of \$430,000 to provide critical storage space for displaced collections.

Storage Space Rental (\$430,000) - The Museum has had a severe space shortage for several years. NMAH has filled its available storage areas, and asbestos still contaminates buildings at Silver Hill. Leased space at the Fullerton Industrial Park in Springfield, Va. will house displaced collections while the NMAH is renovating its building and reinstalling major exhibition halls.

The Museum needs a total of 48,000 square feet to house objects safely while it renovates and constructs. The Museum's "Master Coordination Plan," prepared by an architectural consulting firm, confirmed this requirement. The Museum decided to lease space only after exploring and rejecting other options due to prohibitive costs, security, or inadequate environmental systems.

The requested funds will pay rental costs of \$247,000 on 36,000 square feet. The remaining \$183,000 is for utilities, security, minimal adjustments to meet safety requirements, and some storage equipment to use the space efficiently. In FY 1991, the Museum plans to request increased funding to lease an additional 12,000 square feet.

Additional storage space will facilitate renovation; eliminate improper storage of objects in corridors; facilitate access to the collections for research; strengthen collection management efforts; and provide staging and swing space for the Suitland Butler Buildings, now undergoing repair.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - This income is from various sources, including the Museum's share of museum shop and cafeteria sales, publication royalties, and various annual allotments. In FY 1989, these funds will support the salary and benefit costs for the museum director, an Afro-American Communities project, and the Museum's unique Chamber Music performance and recordings program.

In addition, funds from the Institution's Collections Acquisition, Scholarly Studies, Educational Outreach Program, Research Opportunities Fund, and the Special Exhibition Fund support research, education and exhibition projects. Some notable examples include support for staff to visit China for a cultural exchange on museum issues; support for an index of the Afro-American holdings in five Smithsonian Museums; support for an oral history project on Southern Agriculture; support to develop a cooperative program which would involve local teenagers in the plans for an upcoming exhibit: "Men and Women: Dressing the Part"; support to present a series of performances, lectures and workshops entitled "The American Sampler: Musical Life in America"; and support for a new public program series on Hispanic American history.

Restricted Funds - The principal sources of income for these funds are individual or corporate gifts and foundation grants provided for specific purposes. In FY 1988, NMAH received the following gifts and grants: generous gifts from the AT&T

Foundation, Digital Equipment Corporation, Electronic Data Systems, NCR Foundation, Northern Telecom, Texas Instruments, Unisys Corporation, and Xerox Corporation, for a major new permanent exhibition entitled, "Connected: The Emerging Information Age"; a major gift from McDonalds for an exhibit on Life in America; a generous gift from the National Cosmetology Association for the exhibit, "Men and Women: Dressing the Part"; a generous gift from Les Dames of Los Angeles for the reinstallation of the First Ladies exhibit; a gift from the Advanced Technology Laboratories for an exhibit on ultrasound; a gift from Time Incorporated for an exhibit on US/USSR Sports Photography; a gift from the American Association of Equipment Lessors for an exhibit on Irving Berlin; a gift from Federal Express for an oral history project on advertising; gifts from Stone & Webster and from Alan Hilburg & Associates for a major permanent exhibit on 19th-century Life in America; a gift from the Electronic Industries Association for an exhibit on the 50th anniversary of television; a gift from the Pott Foundation to produce a film for the Museum's Hall of American Maritime Enterprise; a gift from the American Society of Anesthesiologists to refurbish the Museum's exhibit on Pain; a gift from the Recording Industry of America to support an exhibit on Musical History; a gift from the U.S. Patent Model Foundation toward a project on the care of American patent model collections; a gift from Sun-Diamond Growers for historical research on U.S. agriculture; the last installment on a grant from Norfolk Southern to support the exhibit, "Engines of Change"; and a gift from the American Legion Auxiliary for the American Indian Program.

Government Grants and Contracts - In FY 1988, the Museum received a grant from the Department of the Interior for the installation of a temporary exhibition on the Federal Duck Stamp Program.



NATIONAL MUSEUM OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	117	5,229	-	78	4	1,771	-	249	-	-
FY 1989 -Estimate	119	5,464	-	59	4	702	-	387	-	14
-Base	119	5,585								
FY 1990 Estimate	121	5,714	-	65	4	482	-	509	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	119	2	121
11 Personnel Compensation.....	3,311	96	3,407
12 Personnel Benefits.....	592	33	625
21 Travel.....	55	-	55
22 Transportation of Things.....	61	-	61
23 Rent, Communications & Utilities.....	40	-	40
24 Printing & Reproduction.....	121	-	121
25 Other Services.....	533	-	533
26 Supplies & Materials.....	342	-	342
31 Equipment.....	180	-	180
Collections Acquisition.....	350	-	350
Total	<u>5,585</u>	<u>129</u>	<u>5,714</u>

Analysis of Increase

Necessary Pay.....	49
Program Funds.....	80

ABSTRACT - The mission of the National Museum of American Art (NMAA) is to acquire, preserve, study, and exhibit works of American art. Paintings, sculpture, graphic arts, and crafts--including photography and Folk Art--are within the scope of its collecting mandate. The Renwick Gallery, part of the National Museum of American Art, focuses upon American crafts, decorative arts, and design objects. The Barney Studio House is a period home the Museum maintains for tours and interpretive programs. The Institution requires \$40,000 for Necessary Pay for existing staff



funded in this line-item, along with .25 workyears and \$9,000 to annualize the partial year funding of one new position approved in the FY 1989 budget.

Contained in this line-item is an amount of 2 workyears and \$80,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - With a permanent collection of nearly 34,000 objects, the Museum is a nationally recognized center for research, exhibitions, and public education in American Art. NMAA acquires approximately 1,000 new works of art each year, and due to limited space, objects from the permanent collection rotate from storage to exhibition in the galleries. The entire collection, however, is available for study or for loan to other exhibitors throughout the country. Conservation staff restore and preserve these irreplaceable art works to ensure their availability for future generations. Scholarly research by the professional staff results in publications, exhibitions, and educational programs.

Researchers from a variety of disciplines use the Museum's extensive reference materials, including three unique research data bases:

- Inventory Of American Paintings Executed Before 1914 - data on over 250,000 paintings by American artists in both public and private collections.
- Smithsonian Art Index - a list of art works housed in the Institution's non-art museums.
- Index of American Art Exhibition Catalogues - documentation of artistic activities in this country and Canada.

These inventories comprise more than 500,000 computer entries and constitute the most complete data base in existence in the field of American art. The newly launched Inventory of American Sculpture will ultimately add over 100,000 records to the Museum's data base.

Collections - The Museum received several important gifts in FY 1988, including paintings by Thomas Moran, Sanford Gifford, and William Bradford, which strengthen NMAA's holdings in 19th century landscape painting. Other acquisitions strengthen the Museum's holdings in both graphic arts and folk art and contribute to the increasing distinction of the NMAA collection.

Other gifts to the Museum included paintings by Leon Kroll, Louisa Matthiasdottir, Jennings Tofel, and Kenneth Young; an assemblage by Mike Wilkins; sculpture by Alex Katz and Boris Gilbertson; graphic work by Eddie Arning, Chuck Close, Sam Gilliam, Marsden Hartley, Deborah Remington, and Jack Savitsky; photographs by Edward Curtis, H. Arthur Taussig, and William Eggleston; and craft objects by Cornelia Breitenbach, Philip Moulthrop, and Neil Tetkowski. Mr. Herbert Waide Hemphill, Jr. continues to make additional gifts of folk art to the Museum, supplementing last year's acquisition of much of his collection.

The Museum purchased Thomas Cole's study for The Pilgrim of the World at the End of His Journey, a painting previously known only through written description. Another canvas from the artist's final series, The Pilgrim of the Cross at the End of His Journey, is already at NMAA. The Museum also purchased major works by John Trumbull, Portrait of the Misses Mary and Hannah Murray, and by Marsden Hartley, Yliaster [Paracelsus], a forceful, vivid example of Hartley's spiritual themes. Other

purchases included paintings, sculpture, graphic works, photographs, and craft pieces by artists representing the full breadth of American artistic achievement.

Publications - Smithsonian Studies in American Art, the Museum's new scholarly journal, enjoyed a successful second year. The journal expanded from two issues in 1987 to three in 1988. Publication on a quarterly basis will begin in 1989. Co-published with Oxford University Press, the Journal now has a circulation of 1,500. In its survey of the year's best serial publications, Library Journal noted that "Among new art entries, the leader by far is Smithsonian Studies in American Art...."

Abbeville Press, in New York, co-published the museum's book, Perpetual Motif: The Art of Man Ray, an anthology of critical essays on this American apostle of the avant-garde. NMAA will publish a critical biography, Paulanship, in January 1989. Other works in progress at the Museum include a comprehensive study of Albert Pinkham Ryder, a catalogue of avant-garde photography in the 1980s, and a book on American artists who exhibited in the French salons in the nineteenth century.

The Museum produced a large, four-color pre-tour booklet for school children, called On Our Way to the National Museum of American Art, and reprinted two self-guided tour brochures, Hispanic-American Art and Afro-American Art. In addition, the Museum began publishing a newsletter, The American Art Network, which serves the community of former Smithsonian fellows and scholars throughout the world.

Six NMAA publications won awards in 1988. The Washington Book Publishers bestowed a first-place award in its promotion and direct-mail category for the invitation to "Gene Davis, A Memorial Exhibition". The Gene Davis and Modern American Realism: The Sara Roby Foundation Collection catalogues won design awards. The American Art Deco brochure, the On Our Way to the NMAA booklet, and the invitation to "Lost and Found Traditions: Native American Art 1965-1985" all received awards from the American Association of Museums. The American Federation of the Arts chose the Gene Davis catalogue for its Award of Excellence.

Research Resources - In March 1988, NMAA began a nationwide appeal to solicit information for its newest research data base, the Inventory of American Sculpture. Over 12,000 museums, historical societies, and cultural institutions around the country received questionnaires. NMAA began the sculpture inventory with a core of 24,000 records developed through an FY 1987 pilot project. The inventory will ultimately survey all outdoor sculpture in the United States. NMAA and the National Institute for the Conservation of Cultural Property will conduct this survey, in cooperation with the American Association for State and Local History, National Conference of State Historic Preservation Officers, National Park Service, and the Smithsonian's Conservation Analytical Laboratory.

The Inventory of American Paintings Executed Before 1914 will also benefit from the sculpture solicitation because the questionnaires include an appeal for new and updated information on paintings. NMAA's renewed contact with organizations which contributed information to this earlier research data base will enhance the Inventory of American Paintings for the 1,800 researchers who use this resource annually.

The Museum has preserved nearly 300 nitrate and deteriorated acetate negatives from the Museum's Peter A. Juley and Son Collection on stable film for future use. NMAA added over 3,700 slides and 6,700 prints to its Slide and Photograph Archives in FY 1988. The total number of holdings now in the Museum's collection is nearly 120,000 slides and 250,000 prints and negatives.

Museum staff researched approximately 2,500 artists' names for the Artist Authority Project. This research ensures that the information on each recorded artist is accurate and identical among the seven data bases the Museum maintains. Mailings are in progress to request additional biographical information on selected artists.

Exhibitions - During FY 1988, the Museum exhibited works by individual artists or assembled showings based upon thematic topics relevant to American art. Museum curators organized "City Life: Photographs by Bruce Davidson" and "Special Delivery: Murals for the New Deal Era." "Special Delivery," drawn from the Museum's collection of mural studies from the 1930s and 1940s, will tour to five locations throughout the United States between 1989 and 1991. "Alice Pike Barney: The Paris Years" remains at Barney Studio House. An installation of works from the Renwick's growing permanent collection provides a selected overview of contemporary American crafts. Several exhibitions organized by other institutions which included paintings, sculpture, photography, graphic arts, textiles, ceramics, and Native American art include:

- "Supreme Instants: The Photography of Edward Weston," Center for Creative Photography, University of Arizona at Tucson;
- "Wanderlust," Hallmark Photographic Collection, Kansas City, Missouri;
- "Lost and Found Traditions: Native American Art 1965-1985," American Federation of Arts, New York City;
- "Cynthia Schira: New York," Spencer Museum of Art, University of Kansas at Lawrence; and
- "American Art Pottery, 1880-1930, from the Cooper-Hewitt Museum," Smithsonian Institution Traveling Exhibition Service.

Paintings and sculpture from the 19th and early 20th century collections provided the basis for the thematic installation "Images of Innocence: The Child in American Art." "Drawings from the Collection" and "Olympian Trials" represented the graphic arts. "Olympian Trials" was the first showing of selected photographs of athletic events from Walter Iooss, Jr.'s portfolio, entitled "Shooting for the Gold," which NMAA received from Fuji Photo Film USA, Inc. When "Treasures from the National Museum of American Art" returned to NMAA in 1987, after touring since February 1986, the Museum reinstalled the returned works in the permanent collection galleries.

During FY 1988, the Museum lent nearly 200 works from its collections and continued its policy of placing its European works on long-term loans to other institutions in the United States and abroad. In notable example of international cooperation, the Museum sent a group of 17th- and 18th-century English and Dutch paintings to the National Art Gallery in Wellington, New Zealand, in exchange for that Gallery's loan to NMAA of John Singleton Copley's portrait Mrs. Humphrey Devereux.

Projected exhibitions for FY 1989-90 include: "Perpetual Motif: The Art of Man Ray"; "Paulanship"; "The Photography of Invention: American Pictures of the '80s"; Stephen De Staebler: The Figure"; "Masterworks of Louis Comfort Tiffany"; "Albert Pinkham Ryder"; "Photographs of Irving Penn"; and exhibitions drawn from the Patricia and Philip Frost Collection of American abstract art and from the Herbert Waide Hemphill, Jr. Collection of American Folk Art. The Museum is also developing a special exhibition, "Westward Expansion: Views of the Promised Land," as part of the Institution's Columbus Quincentenary program. Scheduled to open in March 1991, "Westward Expansion" will present artworks and cultural objects that portray the



dreams that inspired westward expansion and the complex legacy of experience those dreams engendered.

Interpretive Programs - During 1988, the Museum and its Renwick Gallery offered a diverse program of lectures, films, panel discussions, craft demonstrations, and seminars. The Museum's staff designed these programs to interpret and increase the public's knowledge of American Art in the Museum's permanent collection and temporary exhibitions. NMAA again presented a month-long series of free, illustrated lectures by pre-doctoral Smithsonian Fellows on a variety of topics in American art.

The Primerica Foundation, in conjunction with the Sacred Circles Fund and the Smithsonian Educational Outreach Fund, sponsored a series of lectures, films, and craft demonstrations to complement the Renwick exhibition "Lost and Found Traditions: Native American Art 1965-1985." The Renwick also hosted a panel discussion on "Craft in the Black Art Experience," co-sponsored by the James Renwick Alliance and the Smithsonian's Committee for a Wider Audience. Richard Powell, former NMAA fellow, moderated this discussion.

Speakers at a symposium organized in conjunction with the exhibition "American Traditions in Watercolor" included Susan Strickler of the Worcester Art Museum and Kathleen Foster of the Pennsylvania Academy of the Fine Arts. Photographer Bruce Davidson discussed his work at the opening of the exhibition "City Life: Photographs by Bruce Davidson." and author Studs Terkel moderated a panel discussion on New Deal art which complemented the exhibition "Special Delivery: Murals for the New Deal Era"; panelists included artists Jack Levine, Allan Crite, Eleanor Coen, and Max Kahn.

Similar programs have continued in FY 1989. "Dada and Surrealism in America," an international symposium held in December 1988, addressed issues in the museum's exhibition "Perpetual Motif: The Art of Man Ray." Family activities will extend the Man Ray exhibition to the community, and programs for "Photography of Invention" will celebrate the 150th anniversary of photography.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Annual Smithsonian allotments and fees for services provide these funds. Examples of fees received are:

- Sale of deaccessioned works of art;
- Royalties from publications;
- Exhibition participation fees;
- Revenue shares from restaurant and gift shop sales;
- Sales of slides and photographs; and
- Tuition reimbursement from universities for NMAA interns.

During FY 1988, an unrestricted trust fund allotment expanded the work of the Inventory of American Sculpture. Structural testing of the Barney House is underway to determine the degree of renovation required to prevent further deterioration of this historic house. Funds from the sale of deaccessioned works of art support the purchase of new acquisitions such as Marsden Hartley's Yliaster. The special purpose fund for royalty income partially supports the publication costs for the catalogue Perpetual Motif: The Art of Man Ray. Funds from the J. Paul Getty Center for the History of Art and the Humanities make possible the archival preservation of the Juley Collection of photographs. Research support staff will complete the preservation work



on the Juley Collection in FY 1995. Exhibition fees allow the employment of one staff person in the Registrar's office. In 1988 exhibition fees also funded the tour of the "American Art Deco" exhibition.

Restricted Funds - Individuals, foundations, and corporations provide funds for specific purposes. The Robert Tyler Davis bequest makes augments the acquisition of prints and drawings. Funds from the Henry A. Luce Foundation pay staff of the Inventory of American Sculpture. In FY 1988, a gift from Consolidated Natural Gas provided for the purchase of contemporary American landscape photographs; CNG has pledged additional contributions for 1989-1990. Funds from Primerica and Sacred Circles Fund sponsored craft demonstrations for the "Lost and Found Traditions" exhibition. Tiffany & Company will provide funds for the "Tiffany" exhibition in FY 1990.

NATIONAL PORTRAIT GALLERY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	84	4,159	-	59	-	617	-	113	-	25
FY 1989 -Estimate	87	4,131	-	25	-	46	-	509	-	-
-Base	87	4,224								
FY 1990 Estimate	88	4,304	-	41	-	71	-	572	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	87	1	88
11 Personnel Compensation.....	2,563	56	2,619
12 Personnel Benefits.....	432	24	456
21 Travel.....	34	-	34
22 Transportation of Things.....	140	-	140
23 Rent, Communications & Utilities.....	40	-	40
24 Printing & Reproduction.....	100	-	100
25 Other Services.....	322	-	322
26 Supplies & Materials.....	158	-	158
31 Equipment.....	72	-	72
Collections Acquisition.....	363	-	363
Total	<u>4,224</u>	<u>80</u>	<u>4,304</u>

Analysis of Increase

Necessary Pay.....	40
Program Funds.....	40

ABSTRACT - The National Portrait Gallery (NPG) dedicates itself to the exhibition and study of portraits of people who have made significant contributions to American history and of the artists who created such portraiture. The Institution requires \$31,000 for Necessary Pay for existing staff funded in this line-item, along with .25 workyears and \$9,000 to annualize the partial year funding of 1 new position approved in the FY 1989 budget.

Contained in this line-item is an amount of 1 workyear and \$40,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - The Gallery continually explores the heritage and accomplishments of the American people by collecting, studying, preserving, and exhibiting portraits in all media as both historical and artistic documents.

As NPG's collections have developed, substantial research into American political, social, and intellectual history, and the history of American art is possible using the portraits acquired and the works brought to Washington in special exhibitions. These research results, published by curators and historians, appear in scholarly articles and monographs. The publications constitute a growing body of books of permanent research value. Temporary exhibitions in the Gallery frequently present subjects or artists never before explored. These exhibits assemble works from public and private collections and display them with objects in the Gallery's permanent collections. Professional conservators on the Gallery's staff care for the collections of the National Portrait Gallery.

The Gallery has maintained an active and successful program in recent years, without substantial increases in budget or staff. As the 1990s begin, the Gallery will face new challenges in maintaining its acquisition activity in the face of increasing art prices; in housing its collections in an orderly and safe manner; and in managing its records. The Gallery anticipates that it will require additional funding to support its growing collections and the expansions in its curatorial, registrarial, and educational programs that it plans for the 1990s.

Collections Acquisitions - In 1988, the gift of Everett Kinstler's portrait of President Gerald R. Ford from the Gerald R. Ford Foundation enhanced the Gallery's Presidential Portrait series, along with the purchase of a miniature of President McKinley by Emily D. Taylor.

NPG acquired a major Gilbert Stuart portrait of the American statesman, Rufus King, through a partial gift from the Smithsonian Society and from museum purchase funds. Another substantial acquisition was Marguerite Zorach's portrait of "Marianne Moore and Her Mother," purchased with appropriated funds.

Through the Smithsonian Institution Collections Acquisition Program, the Gallery purchased Thomas Hicks' portrait of his uncle Edward Hicks, the "naive" Quaker artist who was best known as the painter of the several versions of "The Peaceable Kingdom." NPG also acquired Charles Peale Polk's portrait of the agricultural scientist, David Wiley, enhancing the NPG's holdings of early American scientists as well as adding to its collection of portraits by the family of Charles Willson Peale.

Among the most important gifts to the collection were a wax bust of Chief Justice John Marshall by Robert Ball Hughes (from Allan and Janice Lowell Ludwig); a bronze head of John Held, Jr., by Mahonri Young (a partial gift from the widow of the subject, the 1920s cartoonist); and an oil portrait of Karen Horney by Suzanne Carvallo Schulein.

Major photographs purchased in FY 1988 include a 1923 vintage platinum print portrait of cinematographer Karl Struss by Edward Weston; a dye-transfer color print of Judy Garland and Mickey Rooney by Harold Edgerton, the inventor of the stroboscopic flash; a self-portrait of W. Eugene Smith, a legendary photo journalist; a vintage

silver print of author Theodore Dreiser by Charles Sheeler; a portrait of Ezra Pound by Richard Avedon; a rare and unusual vintage Barbara Morgan photograph of Martha Graham performing "Deep Song"; an early photograph of Lazlo Moholy-Nagy taken in Paris by the Hungarian-born Ergy Landau; an extremely rare Civil War vintage carte de visite of Mathew Brady; and rare vintage portraits of Igor Stravinsky by Edward Weston and Alfred Langdon Coburn. Major gifts to the Collection in FY 1988 include two daguerreotypes and sixteen 1862 vintage 17 x 21 inch Mathew Brady glass plate negatives of the actor Edwin Forrest from the collection of the Edwin Forrest Home for Retired Actors in Philadelphia; a collection of sixty portraits by Irving Penn selected and donated by the artist; Joanne Verberg's unique 20 x 24 inch Polacolor ER portrait of artist Andy Warhol from an anonymous donor; and a portfolio of Hollywood portraits by George Hurrell, a gift from Mr. David Davis of Los Angeles.

In FY 1988, the Gallery acquired several drawings, including William Glackens' humorous image of Charles Dana Gibson, Reginald Marsh's portrait of Thornton Wilder (the gift of Wilder's sister), J. Alden Weir's charcoal of John Twachtman, Eastman Johnson's pencil of William Henry Vanderbilt, Cecilia Beaux's drawing of Henry James, an early Raphael Soyer self-portrait, and an ink sketch of Man Ray by Czech artist Adolf Hoffmeister. The Gallery fortunately found intriguing caricature material including three pastels by William Cotton, several pieces by William Sharp, ten charcoals by Isabella Howland, a watercolor cartoon of Bryan and Hearst by Peter Newell, a watercolor of Eddie Cantor, and a pencil of Senator Theodore Bilbo by Sam Berman. The purchase of William Henry Brown's silhouette of Elias Howe and the rare and brilliantly colored 1775 mezzotint of John Hancock by Joseph Hiller, Sr. added two significant early works on paper to the collection. In addition, NPG acquired a Thomas Hart Benton self-portrait lithograph, and posters depicting Joe Louis, Gen. Pershing, Lillian Russell, and Paul Robeson.

Collections Management: The Gallery has almost completed a new inventory of the Photographs Collection and the Prints and Drawings Collection. The reorganizing of collection storage made efficient use of the available space. The computer database contains a location guide to storage, improving access to the collection. This makes future inventories and relocation of storage quicker and easier to undertake.

Early in FY 1989, NPG transported the Mathew Brady negatives of Edwin Forrest were transported to the Chicago Albumen works, which will clean the negatives and make gelatin silver prints and historically accurate albumen or salted paper prints from the cleaned negatives. During FY 1989, Gallery technicians will record the Meserve Collection negatives into the computer database, generating an alphabetized list and access numbers for each portrait.

Since the continuous growth of both the Photograph and the Prints and Drawings collections will exceed the present storage capacity for graphic arts by the beginning of FY 1990, the design and installation of compressed storage units is a priority for the 1990 fiscal year.

After renovations within the third floor office areas of the museum in late 1987, the Registrar's Office moved into the new third floor quarters. Prior to the move, the Registrar's space was extremely limited, crowding both personnel and files. To comply with established museum practices, the Gallery has long needed to move its official collection files to an area secured and controlled by the Registrar. The transfer of files covering approximately half of the museum's collection took place with the first move. NPG needs a study to prepare for the move of the remaining files to determine the proper type of filing units and the amount of space needed. NPG will



require additional temporary help to move the files, after procuring a storage system.

The Registrar's office has made increasing use of microcomputers in its work. A recent innovative application is the preparation of a computerized index of objects on display in the museum. Available at the NPG information desk and at various other points within the museum, the index is for the use of the public and staff. This index enables inquirers to determine the location of all portraits on view of a particular person or by a particular artist. The Gallery has updated this index (the only one of its kind in the Smithsonian--for nearly 10 years) using the latest-model desk computer and a recently obtained laser printer in the Registrar's office.

Since FY 1987, NPG has entered on computer the location of objects in storage in the American Art and Portrait Gallery Building and during FY 1989 will enter those stored off-premises. NPG was successful in automating approximately one third of its inventory records and will continue to work toward full computer control of these files.

Exhibitions - Two major exhibitions opened at the Gallery in 1988. "American Colonial Portraits: 1700-1776" was the first in a series of exhibitions commemorating the Bicentennial of the Constitution of the United States. The exhibition assembled, for the first time in half a century, masterworks from public and private collections throughout the country as well as from England, Ireland, Jamaica, Bermuda, and Canada.

In April 1988, the King and Queen of Sweden opened "Masterpieces from Gripsholm Castle: The Swedish National Portrait Collection." Part of the celebration of the 350th anniversary of Swedish settlement in America, this exhibition brought to the National Portrait Gallery 61 portraits ranging from a late-medieval wood carving to a contemporary photo-realist painting. It was the second in a planned series of shows displaying highlights from the world's great portrait collections.

Smaller exhibitions opening in 1988 were "Studies from Life: Portrait Photographs by Julia Margaret Cameron," which included 51 images borrowed from the J. Paul Getty Museum, and "The Artist's Mother," featuring works by twentieth-century artists who used their mothers as the subject or inspiration for their work. The Heckscher Museum, Huntington, New York, organized the latter exhibition.

December 1987 marked the beginning of the first overseas tour of a major exhibition from the National Portrait Gallery. The exhibition "Then and Now: American Portraits from the Past Century," highlighting 51 portraits from the Gallery's permanent collection, traveled to the Hong Kong Museum of Art, the Hokkaido Museum of Modern Art in Sapporo, Japan, and the Sogetsu Gallery of Art in Tokyo.

NPG mounted exhibitions of "Recent Acquisitions" in January and August. In August of 1988, the Gallery opened "Champions on TIME," an exhibition of 25 portraits of athletes featured on the cover of TIME Magazine. All but one of the portraits are from the Gallery's collection.

Polaroid Corporation sponsored "The Instant Likeness: Polaroid Portraits," which also opened in August of 1988. The photographs in the exhibition surveyed the forty years of instant photography's history as reflected in portraiture and include the work of some of the most familiar names in American photography.

NPG's exhibitions commemorating the Bicentennial of the Constitution and the establishment of the new Federal government will continue in 1989. In March 1989, the Gallery will join with the United States House of Representatives and the United States Senate in presenting "The First Federal Congress 1789-1791." This exhibition will celebrate the two-hundredth anniversary of the convening of Congress. In October, to celebrate the creation of the United States Supreme Court, NPG will open "Portrait of the Law," which will feature images of distinguished American jurists from the years of the early republic to the late twentieth century. The primary purpose of this exhibition is to highlight those individuals who were pivotal interpreters and shapers of our legal constitutions during the last two hundred years. The final exhibition in this series, opening in the fall of 1990, will focus on the executive branch of government through an examination of the life of President Andrew Jackson. Plans are that this exhibition will travel to the Tennessee State Museum in Nashville.

"Isamu Noguchi Portrait Sculpture," which will open in the spring of 1990, is the first retrospective overview of an important and little-known aspect of the work of this major contemporary Japanese/American artist. "To Color America: The Portraits of Winold Reiss," opening in October of 1989, will introduce the public to the life and work of this German artist who came to America in 1913 and produced stunning portraits of non-white Americans. The Gallery, to facilitate the installation of this show, will dismantle and reinstall in other locations several smaller exhibitions.

The Photographs Department will spend a significant amount of time in FY 1989 on three exhibitions scheduled to open in FY 1990: an exhibition of the Irving Penn gift (organized jointly with the National Museum of American Art); an exhibition of treasures from the NPG Photograph Collection planned to coincide with the Penn exhibition; and a reinstallation of the Meserve Collection gallery. A catalogue will accompany the Penn exhibition, and the Meserve Gallery and Treasures exhibition will have brochures.

Loans made from the National Portrait Gallery collections to museums and institutions across the United States and abroad have tripled in number in the last two years. The Smithsonian Institution Traveling Exhibition Service (SITES) toured a portion of the Gallery's Harmon Collection of outstanding Black Americans. An exhibition entitled "Athletes and Heroes" completed a nearly three-year tour in FY 1988. The Museum's portrait of Mary Cassatt traveled to France and Canada and will go on to New York for the Edgar Degas retrospective. NPG loaned works to several dozen museums and institutions during FY 1988 and received requests for many other objects during FY 1989.

NPG will join with the Prado Museum in Madrid and the Kimbell Art Museum in Fort Worth, Texas, in organizing a major exhibition as part of the 1992 Columbus Quincentenary observance. Directed by the Kimbell deputy director, William B. Jordan, the exhibition will concentrate on 16th-century Spanish portraiture, exploring the new indigenous artistic movement in Spain during the reign of King Philip II. This was the time when Spanish colonial influence in the Western Hemisphere was at its height. This exhibition will include period masterpieces borrowed from the Prado, the Kunsthistorisches Museum in Vienna, and the British Royal Collections. This exhibit will incorporate the latest research into 16th-century painting and cultural developments.

Publications - The National Portrait Gallery's Publications Department produces books and ephemera for a general adult reading public, documenting the museum's



collections and exhibitions. FY 1988 marked the culmination of the Publication Department's largest and most ambitious project ever, the newest edition of the National Portrait Gallery Permanent Collection Illustrated Checklist. This valuable reference documents some four thousand portraits--all illustrated--and includes two indexes.

In FY 1988, the Gallery published the exhibition catalogue Then and Now: American Portraits of the Past Century from the National Portrait Gallery. This catalogue accompanied the Gallery's exhibition by the same name, which traveled to Hong Kong and Japan. The Gallery achieved another milestone in FY 1988. With a Japanese language edition of the catalogue, published in Tokyo, new audiences in both Japan and the United States will be able to experience works of art from the permanent collection of NPG. Overseas corporate foundations funded both the English and Japanese publications.

A full-length book, which the Smithsonian Institution Press is distributing as a trade book, accompanied the Gallery's major fall exhibition, On the Air: Pioneers of American Broadcasting. A full year of exhibition-related publishing will follow, generating about six new titles.

Education - The Education Department of the National Portrait Gallery offers a daily schedule of gallery tours and presents intensive elementary and secondary school programs, as well as outreach programs for senior citizens. Trained education aides and docents conduct these programs outside the Gallery and offer tours on the premises. The education program menu includes such slide-lecture presentations as "FDR, A Rich Legacy," and musical performances such as "A Tribute to Cole Porter." The Gallery is trying to reach new audiences by developing programs that address the needs and interests of multi-ethnic communities nationwide. In addition, the Gallery will foster public awareness of senior adult programs by producing a brochure, available in the fall of FY 1989. Research, conducted to develop supplemental education packages for teachers nationwide, has begun. A self-guide brochure for families touring with young children is underway. The Education Department offers a Lunchtime Lecture and tour series that highlights special exhibitions, while Speaker's Bureau slide-lecture presentations illuminate the permanent collection using a thematic approach (for example, "Leading Ladies: Women and Reform in the United States" and "Men of Progress: Nineteenth Century American Inventors").

"Cultures in Motion: Portraits of American Diversity" (CIM) is a series of public programs that promotes serious reflection on portraiture, biography, and history. These programs bring the museum's collection to life through lectures, symposia, one-person biographical plays, recitals, concerts, storytelling, and other performances. "Cultures in Motion" programs are a constructive way for museum visitors to broaden their understanding of the multi-ethnic aspects of American history.

Research - The Catalog of American Portraits (CAP) continued to serve both professional and non-professional researchers in American art history and American history during FY 1988. CAP added approximately 3,500 records to the computerized database, bringing the total number of automated records to 51,500. These latest additions represent Midwestern collections, including several major repositories of portraits of Native Americans. Participating institutions received computer printouts accompanying negatives covering their portrait collections. Field gathering of new portrait material and photographing of collections continued, with five public collections and three private collections added to the survey.

CAP completed a major editing project of some 48,000 records on the automated database in preparation for the move from the Honeywell to the IBM mainframe computer. The department continues an active role in the development of the Smithsonian's Collections Information System (CIS). CAP completed a portrait artist-geographic region index in FY 1988 and will incorporate this index into the automated database when the Institution implements CIS. Work progressed in the updating of early Southern States Survey material. In addition, work is underway to include in the database important local collections such as the portraits at the U.S. Capitol.

The CAP's first priority in the coming fiscal year is to continue to serve research interests to the best of its ability. After filling two office vacancies, Trust and Federal, CAP expects greater progress in the processing of research material. As funding permits, field survey work will continue in selected collections. CAP will make a continuing effort to secure funding for the completion of the national portrait survey.

During FY 1988, the Peale Family Papers staff continued its work of transcribing, researching, and annotating selected letters and documents of the noted artist and naturalist Charles Willson Peale and his artist-sons Raphaele, Rembrandt, and Rubens. Yale University Press published Volume 2 of The Selected Papers of Charles Willson Peale and His Family, in April of 1988. Subtitled The Artist as Museum Keeper, 1791-1810, the volume appeared in two parts consisting of about 1,300 pages, illustrated in black and white and in color. Volume 3--The Artist as Farmer, 1810-1820--will appear in April 1991 in celebration of Peale's 250th birthday.

The project has also successfully launched a research program to identify portraits by Rembrandt Peale (1778-1860) and collect information about the extensive work of this important American artist. With private funds from the Smithsonian Institution and the Baltimore Gas and Electric Company, this large effort employs two consultants to assist the Editor. Publication of a catalogue raisonne' of Rembrandt Peale's total oeuvre will meet scholarly needs in the art historical world. An exhibition of Rembrandt Peale's portraits will follow the completion of the catalogue.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Several sources, including the Gallery's share of sales in the restaurant and museum shop, sales of photographic reproductions of portraits in the collection, and participation fees from museums, make up these funds. These funds help defray the expenses of public lectures, symposia, and special events in coordination with the opening of exhibitions; associated costs of loan exhibition development and management; and the research expenses of staff who are preparing special publications or lectures. In addition, funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Programs, Research Opportunities Fund, and Special Exhibition Fund support research, education, and exhibition projects. Through the Collections Acquisition Program, the Gallery purchased Thomas Hick's portrait of his uncle Edward Hicks.

Restricted Funds - Designated for specific purposes, these funds are in the form of gifts and grants from individuals, foundations, organizations, and corporations.

The Gallery received a generous contribution from American Express International, Inc. to assist in sponsoring the traveling exhibition "Then and Now: American Portraits of the Past Century from the National Portrait Gallery" to the Hong Kong



Museum of Art and Japan. The exhibition is a survey of important trends in American portraiture during the past 100 years selected from the collections of The National Portrait Gallery. Emery Worldwide, Inc. and Nippon Cargo Airways assisted with the shipping of the exhibition. Bay Apparel Limited, a Hong Kong corporation, provided funding for the exhibition's catalogue. The law firms of Morgan, Lewis & Bockius, and Vinson & Elkins have made the first of three installments of their contributions in support of NPG's upcoming exhibition on American Jurists. Professional Photographers of America, Inc. gave a generous gift to support the reinstallation and unveiling of the Daguerre monument. Burlington Northern Inc. made a donation in support of "To Color America: The Portraits of Winold Reiss." The Baltimore Gas and Electric Foundation provided funds to support a catalogue and exhibition of the paintings of Rembrandt Peale. During FY 1988, through contributions from family and friends, research in the art of portraiture will benefit from the establishment of the Gloria Haas Fellowship Fund. Income from the fund is for fellowships to enable graduate students in the history of art, as well as other related fields, to work at the National Portrait Gallery for specified periods of time on research of benefit to the Gallery and to their own studies. The Gallery also received substantial contributions for future activities and general support from the Barra Foundation, Inc., Broadcast Pioneers, the Clarence and Jack Himmel Foundation, The New York Community Trust, C.G. Sloan & Company, Inc., and smaller gifts from a number of individual donors.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	72	3,443	-	16	-	873	-	859	-	-
FY 1989 -Estimate	78	3,457	-	18	-	417	-	756	-	-
-Base	78	3,531								
FY 1990 Estimate	78	3,556	-	20	-	399	-	789	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	78	-	78
11 Personnel Compensation.....	2,226	18	2,244
12 Personnel Benefits.....	384	7	391
21 Travel.....	61	-	61
22 Transportation of Things.....	151	-	151
23 Rent, Communications & Utilities.....	10	-	10
24 Printing & Reproduction.....	44	-	44
25 Other Services.....	172	-	172
26 Supplies & Materials.....	185	-	185
31 Equipment.....	138	-	138
Collections Acquisition.....	150	-	150
41 Grants.....	10	-	10
Total	<u>3,531</u>	<u>25</u>	<u>3,556</u>

Analysis of Increase

Necessary Pay..... 25

ABSTRACT - Public Law 89-788 signed on November 7, 1966 established the Hirshhorn Museum and Sculpture Garden (HMSG) as the Smithsonian's modern and contemporary art museum. The collection is the basis of an active program of exhibitions. The museum staff conducts extensive research, prepares catalogues, and offers a variety of educational activities. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Hirshhorn Museum. The Institution requires \$25,000 for necessary pay for existing staff funded in this line-item.

PROGRAM - In keeping with its status as a museum of modern and contemporary art, the HMSG conducts programs of research, exhibitions, collections management, acquisitions, deaccessions, and education activities involving audiences of all ages. The Museum opened to the public on October 4, 1974. The Museum attracts over one million visitors per year making it one of the most visited contemporary art museums in the United States.

Research - The Museum's resources include 13,000 works of art, a curatorial file providing information on artists and works in the collection, and a library with 35,000 books and catalogues. Students and researchers can view works of art not on display for study purposes. The staff researches the provenance, exhibition history, iconographic significance, and physical condition of each work of art in the permanent collection. The staff also conducts extensive research in preparing exhibitions. A computer system gives access to collection information and also recalls video images installed on the system.

Exhibitions - The Museum conducts an active exhibition program that draws upon works in its collection and other collections. Nearly 700 works from the permanent collection are on display at any time. The Museum makes extensive loans to other museums.

In FY 1988 the Museum organized three major exhibitions: "Different Drummers," "Russian and Soviet Paintings, 1900-1930: Selections from the State Tretyakov Gallery, Moscow, and the State Russian Museum, Leningrad," and "Alberto Giacometti." The Russian and Soviet paintings exhibition included more than 90 paintings and 69 artists active in the years before and after the Bolshevik Revolution of 1917. These paintings are part of the collections of two of the largest museums of Russian and Soviet art in the Soviet Union. This is the first time the American public has had the opportunity to view most of the material in this exhibition. After its initial display at the HMSG, "Alberto Giacometti" will go to the San Francisco Museum of Modern Art. Exhibitions organized elsewhere shown at the HMSG were: "A Quiet Revolution: British Sculpture Since 1965," and "Expressiv: Central European Art Since 1960." Several small exhibitions based on the permanent collection were also on view.

In FY 1988 with partial funding from the Smithsonian Institution's Special Exhibition Fund, the Hirshhorn added two new exhibition programs, "Directions" and "Works." "Directions" -- recast from the Museum's large-scale biennial thematic show -- will augment the special exhibitions mounted in the lower-level gallery with small group shows of works by emerging artists and solo exhibitions of specific bodies of work by better-known artists. This series of small exhibitions featured "Joel Shapiro: Painted Wood," "Sherrie Levine," and "Robert Cumming." This series will continue in FY 1989 with partial funding from the Smithsonian Institution's Special Exhibition Fund. Artists to be featured in FY 1989 are Walter Pichler, Mel Chin and Keith Sonnier.

The second program the HMSG initiated is innovative in that it integrates the Museum's building and grounds into the creative process. The HMSG commissions artists to visit the Museum and create temporary site-specific works. "Works" introduces viewers to a group of artists who create art in a nontraditional way. Artists who created "Works" in FY 1988 included Sol LeWitt, Kate Ericson and Mel Ziegler, and Vernon Fisher. This series of exhibitions will continue in FY 1989 with partial funding from the Special Exhibitions Program. The second series started in October with the artist Krzysztof Wodiczko's projection of images on the outside of the



museum. This will be followed by Buster Simpson in May 1989 and Houston Conwill in August 1989.

In FY 1989, HMSG will show three major exhibitions: "Gerhard Richter Paintings," "Recent Acquisitions," and "Robert Moskowitz: Paintings and Drawings, 1959 - 1989." After opening at the HMSG, the "Robert Moskowitz" exhibition will travel to the La Jolla Museum of Contemporary Art in California and to the Museum of Modern Art in New York City.

For FY 1990, major exhibitions firmly scheduled are: "Francis Bacon" and "Culture and Commentary." Exhibitions under consideration are: "Bay Area Figurative Artists," and "Baldessari." "Culture and Commentary," is a major survey of the art of the eighties. The exhibition will focus on the work of ten to fifteen artists from Europe, Canada, and the United States whose expressive voices have fully developed in the eighties. For artists here and abroad the central and poignant question was: how to continue ... how to create work which, while cognizant of the potency of the means of mechanical production and the ubiquity of reproductions, still asserts faith in the possibility of making an original 'mark.' Some artists eventually dismissed the need to be original, and blatantly used the imagery of other artist's work as a beginning point for their own.

Collections Management - The museum inventories its entire collection on a three-year cycle with spot checks made at least annually. The Museum deaccessions works of art, which are offered for sale to bureaus of the Smithsonian Institution before being offered to the public at auction. According to the agreement with Mr. Hirshhorn, the Hirshhorn uses proceeds from any such sales to purchase new works of art. Work continues on integrating the bequest of Mr. Hirshhorn into the permanent collection. The Museum develops object records, and the Registrar and the Conservation Laboratory examine the objects. Staff photographers record the objects for both identification and reproduction purposes. The Office of the Registrar is working to move the permanent inventory from the old mainframe computer to the new mainframe. This office is also working to add video images to the inventory system.

Acquisitions - The function of the HMSG, as described in the legislation, is to be "a museum in Washington, D.C. where modern art could be exhibited and studied...[to]...enrich the culture of the Nation." To reflect current developments in the visual arts an active acquisitions program is essential. In FY 1988, the Museum purchased the following: Timber's Turns, 1987, by Martin Puryear; Ancient Wall, 1976, by Philip Guston; Spanse, 1987, by Nancy Graves; Landscape, 1987, by Robert Moskowitz; and Sanctuary, 1988, by Gerhard Richter.

At the October 29, 1987, meeting the Board of Trustees voted to accept a gift of eight works of art from the Estate of Marion L. Ring. These works, which include a 1937 sculpture, "Seated Girl," by Ernest Barlach, is the most valuable gift to the museum since Mr. Hirshhorn's bequest.

Education and Public Orientation - To help visitors understand modern art the Museum creates a variety of educational materials. These include brochures and mini-catalogues the public receives free of charge. The Education Department trains docents to lead regular and special tours of the exhibitions. This Department also programs the Orientation Room with both original creations and with outside productions. The HMSG has outreach programs to assist visitors before they arrive at the Museum. The Museum developed new outdoor signage which informs passers-by of the current major exhibition.



The Museum sponsors three film series free of charge: a lunchtime series about artists and their work; an evening series of films by artist filmmakers; and a Saturday film series for young people. Other events held in the auditorium include concerts by the 20th Century Consort and lectures by artists, critics, and art historians. Occasionally, a symposium will accompany a related exhibition.

"Currents," two free seminars, exposes high school juniors to the trends and ideas represented in new works of art. The published comments and observations of the students become available to the public as a free handout.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from several sources, including; the Museum's share of sales in the museum shop, plaza cafe, and other miscellaneous receipts. An allotment meets the travel expenses of the Museum's Board of Trustees. Partial funding supports the 20th Century Consort which has been performing at the Hirshhorn Museum for over ten years.

Restricted Funds - The Hirshhorn Museum and Sculpture Garden has four endowment funds. The first fund comes from the \$1,000,000 that Mr. Hirshhorn pledged at the signing of the initial agreement, and the second comes from the monies left to the Museum in his will. The third endowment comes from the sale of works of art. Finally, the Museum receives funds from the Holenia Trust, a Swiss foundation financed by Mr. Hirshhorn. These four funds may only be used to purchase works of art. At the beginning of each year, the Board of Trustees of the HMSG has authorized 10 percent of the value of the endowment funds for use as a purchase fund for the current year. In FY 1988, the Women's Committee of the Associates granted the Museum funds to purchase a new screen and two refurbished 35mm projectors for the auditorium.

Individuals, foundations, organizations, and corporations designate their gifts and grants for specific purposes. The Lannan Foundation gave HMSG a \$50,000 grant to purchase works of art by emerging artists.

Generous grants from the Xerox Corporation and Credit Suisse provide partial support costs for the "Alberto Giacometti" exhibition. Balair supplied air transportation from Switzerland. The Pro Helvetia Foundation gave funds for the brochure for the Giacometti exhibition and for a symposium.

ARTHUR M. SACKLER GALLERY/FREER GALLERY OF ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	63	4,001	1	75	-	397	22	2,511	-	-
FY 1989 -Estimate	68	4,300	1	91	-	-	23	2,616	-	-
-Base	68	4,367								
FY 1990 Estimate	68	4,390	1	94	-	-	23	2,572	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	68	-	68
11 Personnel Compensation.....	1,934	16	1,950
12 Personnel Benefits.....	483	7	490
21 Travel.....	34	-	34
22 Transportation of Things.....	16	-	16
23 Rent, Communications & Utilities.....	48	-	48
24 Printing & Reproduction.....	231	-	231
25 Other Services.....	446	-	446
26 Supplies & Materials.....	570	-	570
31 Equipment.....	491	-	491
Collections Acquisition.....	114	-	114
Total	<u>4,367</u>	<u>23</u>	<u>4,390</u>

Analysis of Increase

Necessary Pay..... 23

ABSTRACT - The Arthur M. Sackler Gallery, established July 28, 1982, and the Freer Gallery of Art established in 1906, are devoted to acquiring, researching, conserving, and exhibiting Asian art. The Sackler Gallery, which opened to the public on September 28, 1987, is able to loan and borrow objects and exhibitions. The Freer Gallery of Art uses and displays its collections as a basis for understanding the civilizations that produced them. According to the founder's will, the Freer may only exhibit items from its permanent collection. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Arthur M. Sackler

Gallery/Freer Gallery of Art. The Institution requires \$23,000 for Necessary Pay for existing staff funded in this line-item.

From FY 1984 through FY 1989, the Smithsonian requested funding for the Freer Gallery and the Sackler Gallery under this line-item as the "Center for Asian Art." During the first year of operation of the Sackler Gallery, the present usage of the term "Arthur M. Sackler Gallery/Freer Gallery of Art" began. For FY 1990, the Institution changed the name of the line-item to reflect actual usage.

#### ARTHUR M. SACKLER GALLERY

PROGRAM - The primary goal of the Arthur M. Sackler Gallery is to advance the scholarly appreciation and public knowledge of Asian art. The Gallery staff achieves this goal through research and exhibitions. Towards this end, Dr. Arthur M. Sackler donated a collection of nearly 1,000 objects in the fields of Chinese, Indian, Southeast Asian, Near Eastern, and Japanese art to the Smithsonian. This collection includes Chinese jades spanning a period from Neolithic times (5000 B.C.-1500 B.C.) into the 19th century; Chinese bronzes from the Shang (ca. 1523 B.C.-ca. 1028 B.C.) through the Han (206 B.C.-A.D. 220) dynasties; Chinese painting; Chinese lacquer, Near Eastern ceramics and metalwork, and sculpture from Cambodia, India, and Thailand.

Research - The Gallery's primary area of focus, research, provides the basis for exhibitions, publications, and collections acquisitions. The research program involves both visiting scholars and the permanent curatorial and conservation staff. The Sackler disseminates research results to the public through public lectures and by making collection research computer data available. Monthly lectures by members of the curatorial staff of the Sackler Gallery include topics of current research; additional lectures by non-staff discuss topics related to Asian art and culture. Publications include not only exhibition catalogues, but free gallery guides, papers, and articles.

The Gallery's publications program includes a quarterly magazine, Asian Art, written for general public understanding. This publication, produced in cooperation with Oxford University Press, has color plates and informative text relating to various research activities, the permanent collection, recent acquisitions, and special exhibitions. The Gallery produces the Asian art history journal Artibus Asiae, funded by the Sackler Foundation. The journal's contents are independent of the Sackler Gallery programs and collections. Exhibitions, exhibition catalogues, and lectures at the Gallery result from specific research projects. Free leaflets and gallery guides are available to the public.

Research in the area of conservation concentrates on the lead isotope ratio analysis of Chinese bronzes in the Sackler collections and on the extension of identification methods into the field of organic colorants in paintings.

Exhibitions - Exhibitions are the other focus of the Sackler Gallery. The new building contains displays of the initial Sackler gift together with other major objects on loan from the private collection of Dr. Arthur M. Sackler. The inaugural exhibitions included:

- "In Praise of Ancestors: Ritual Objects from China,"
- "Monsters, Myths and Minerals,"
- "Pavilions and Immortal Mountains: Chinese Decorative Art and Painting,"
- "Nomads and Nobility: Art from the Ancient Near East,"



- "Persian and Indian Paintings: Selections from a Recent Acquisition,"
- "Temple Sculptures of South and Southeast Asia,"
- "Chinese Buddhist and Daoist Imagery."

In addition to the inaugural exhibitions, several new exhibitions opened to the public. These included "Terracottas from South India," May 1988; "The Chinese Scholar's Studio," May 1988 -- the first traveling exhibition held by the museum; "The Art of India," July 1988; "Recent Japanese Acquisitions," October 1988; and "A Jeweler's Eye: Islamic Arts of the Book from the Vever Collection" November 1988.

Future exhibitions will include those originated by the Gallery and traveling exhibitions organized elsewhere. Exhibitions will draw from international public and private collections and from the Sackler collection. Many Gallery-organized exhibitions will travel to other museums and institutions. Future exhibitions planned include:

- "Timur and the Princely Vision,"
- "Masterpieces of the Che School Painting,"
- "Mughal Gardens,"
- "Photographs by Raghubir Singh,"
- "Yokohama Prints,"
- "Paintings by Chang Dai-chien."

Items for future exhibitions are Chinese mirrors, Ordos bronzes, Chinese lacquer, Indian and Southeast Asian sculpture, Chinese garment hooks, Sasanian metalwork, Chinese furniture, Near Eastern ceramics, Far Eastern ceramics, and Chinese sculpture. Research catalogues will accompany the exhibitions.

Conservation - The Sackler Gallery must protect and conserve the art objects under its purview. This responsibility includes the objects in the permanent collections, in loan exhibitions held in the Gallery, and in Sackler-organized traveling exhibitions. The Sackler conservation effort includes object research to understand the origin of objects and therefore better develop the proper treatment of them. Expansion of the conservation facilities in the renovated Freer building will also accommodate the requirements of the Sackler programs. After the public opening of the museum in September 1987, the staff of the Conservation Laboratory concentrated on particular items for future exhibitions such as the Indian terracotta sculptures, a Japanese palanquin and Persian paintings. The Oriental art restoration studio, which conserves Sackler collections as well, is discussed in the Freer Gallery of Art section of this narrative.

Education - Besides the exhibition and publication programs, the Sackler Gallery will attract a large number of research scholars and will have an active program of research fellowships. Fellowship recipients work closely with curators on topics related to the collections. A grant from the Rockefeller Foundation made it possible to establish a Rockefeller Foundation Residency Program in the Humanities at the Smithsonian Institution. The grant, which supports residential fellowships in Asian and African art, has provided two to three post-doctoral appointments each year since 1985. The Rockefeller Residency Program differs from existing fellowship programs in that it allows the fellows to become directly involved in the plans and programs of the museums and to participate in symposia, exhibitions, and publications. Similar scholarly grant programs will advance the research and education programs based on Asian art collections and exhibitions at the Sackler.



The Sackler Gallery plans to develop an active educational program for local school, college, and university students. Programs will allow students at secondary, undergraduate, and graduate levels and visiting researchers to participate in symposia and seminars. They will also come into direct contact with major works of art and distinguished scholars and curators. Topics of such symposia and seminars may relate to current exhibitions or the Sackler collections but will concern some aspect of Asian art and culture.

Education programs during FY 1988 included weekly storytelling for children and adults, children's guides to exhibitions, hands-on experience in the galleries with non-collection items similar to exhibited art work, workshops for children, adults and teachers, special tours for specific age groups, films, musical concerts, lectures both in English and an Asian language, and other Asian cultural events. Gallery guides for every exhibition provided supplemental information to exhibition labels.

Educational outreach continued through a new education program for the elderly and the young. Slide sets were available for docents to speak to community groups. Pre-visit education packets sent to schools prior to their tours of the Sackler Gallery presented an introduction to specific areas of Asian art.

Collections Acquisition - The Sackler Gallery will continue to acquire art objects of central interest to the museum which will include the arts of Asia in its broadest terms, from Japan to the Near East. Objects acquired for the collection will be of high quality in terms of aesthetic standards, cultural history, and physical condition. The Museum acquires objects by gift, bequest, or purchase provided that the objects meet established acquisition criteria.

Gifts to the collection during FY 1988 included 126 20th-century Japanese woodblock prints, a 20th-century Japanese sculpture and pastel, a Chinese album of eight leaves by the Chinese artist Sun Kehong, an Indian painted fabric, ca. 1920 called a Pabuji Padh (Puppet Backdrop), a piece of gold jewelry from India, and six 15th-century Persian paintings. Museum purchases with proceeds from the Sackler Gallery museum shop included a 17th-century Indian Mughal drawing and four 20th-century Chinese hanging scrolls by Chang Dai-chien. The Women's Committee of the Smithsonian Associates helped purchase a contemporary Japanese porcelain bowl. With the Smithsonian Collections Acquisition Program the Sackler purchased a 17th-century Mughal mother-of-pearl box from India and a pair of 17th-century Japanese screens. The Gallery received 11 Japanese prints and three Indian illustrations from the Hirshhorn Museum and Sculpture Garden and 21 20th-century Japanese prints from the National Museum of American Art.

#### FREER GALLERY OF ART

PROGRAM - The Freer Gallery of Art houses one of the most distinguished collections of Oriental art in the world. The collection consists of over 27,000 works of art from China, Japan, Korea, India, and the Near East and spans 5,000 years. Included in the collection are paintings, sculpture, Biblical manuscripts, and other objects in stone, wood, lacquer, jade, pottery, porcelain, bronze, gold, and silver. "The Peacock Room" by James McNeill Whistler is part of an outstanding collection of late 19th- early 20th-century American art that Charles Lang Freer, the Gallery's founder, considered a bridge between the arts of the East and West.

Although the Freer closed to the public in the fall of 1988, research, conservation, collections management, authentication services, and other such activities continue. Extensive renovation will affect the collections storage areas and the conservation laboratory and the exhibition galleries. The Freer will reopen in 1992, after the completion of the tunnel to the Sackler Gallery. During the renovation, collection items will be available for study by appointment in the temporary collection storage areas in the museum. Besides the collections, the Gallery shares with the Sackler Gallery a public library of approximately 45,000 volumes relating to the objects in the collections.

The unique Oriental collections in the Freer Gallery, together with notable holdings of American paintings, have made the museum a center for students, scholars, and the public on an increasing basis. Each year brings a steady increase in visitors, requests for museum tours, lengthy periods of advance bookings for authentication appointments, and the number of visiting scholars and dignitaries. With the Freer's reopening, museum tours, the Freer lecture series, and all other public programs will become available in an enhanced format as a result of the expanded and improved facilities the renovation makes possible.

Research - Freer Gallery research facilities, comprising the collections, curatorial staff, library, and technical conservation laboratories, form the nucleus of its specialized public service. Research findings are available to the public through exhibitions, catalogues of exhibitions, articles, free gallery leaflets, and public lectures at the Freer and at other similar institutions. Updating the research files on individual pieces in the collection will continue during the renovation. These files will be available to visiting scholars and students as well as the collections in storage during the renovation.

Although the results of curatorial research are most visible in the Gallery's exhibitions, the Freer disseminates additional research results to the public through collection research records, in monthly lectures, and in published papers and books, activities which will continue even though the renovation will close all the exhibition galleries to the public.

Exhibitions - During FY 1988, while preparing for the renovation, the Freer exhibited a dozen of its finest Chinese paintings; a selection of ceramics and bronzes, dating to the second millennium B.C.; and pieces of lacquerware. The installation of Japanese art offered an opportunity for visitors to compare objects in several media, because this exhibition included a diverse group of 13 paintings, spanning the late 12th through the 19th centuries; 40 ceramic objects; two pieces of lacquerware; and two early bronzes. A selection of screens was on view in the screen gallery.

Paintings and a wide array of objects in silver, gold, ivory, jade, brass, steel, ceramic, and glass reflected the quality and diversity of the Freer's collection of Near Eastern art. Objects in the exhibition dated from the fifth century B.C. through the 18th century and come from North Africa, Egypt, Syria, Iraq, Iran, India, and Turkey.

Eleven sculptures of stone and bronze and five paintings filled the South and Southeast Asian gallery with representations of Buddhist and Hindu gods from the Indian subcontinent and Indonesia and spanned the second century B.C. through the 17th century. Among the highlights was the Freer's famous "Parvati," a 10th-century bronze representing the consort to Shiva, Hindu god of destruction. Another bronze, this one

made in the 13th-14th century, was Nandi, the bull who was both "vahana" (vehicle) for and companion to Shiva.

Although the Freer is best known for its holdings in the arts of Asia and the Near East, it also houses a collection of works by American artists of the late 19th and early 20th centuries, including a major group of works by the expatriate artist James McNeill Whistler. The selection exhibited included 17 paintings by Whistler, Dwight William Tryon, Thomas Wilmer Dewing, and John Singer Sargent.

An exhibition of 19 paintings by Thomas Dewing represented the American artist best known for his graceful portrayal of women. Dewing, born in Boston in 1851, studied art in Paris in the French academic tradition. Back in the United States in 1895, he helped to form a group called "The Ten American Painters," also known as the American Impressionists. Unlike his peers who found landscape painting the appropriate vehicle for expressing innovative ideas about light and color, Dewing used landscapes primarily as backgrounds for his elegant figural interpretations.

In 1973, the Freer published a catalogue, Chinese Figure Painting. This was the only study in this field, and it has been out of print for ten years. Revision of this text for publication required a comprehensive review of all literature written on the subject during the past fifteen years, including scholarly developments based upon the original publication. Current plans include publishing this revised catalogue in 1989.

Conservation - In addition to its reputation for conserving and restoring objects, the Technical Laboratory of the Freer Gallery is a renowned research facility. A primary concern for the staff of the Technical Laboratory for the past several years was conserving the objects for the inaugural, in-house exhibitions and the traveling exhibitions in the Sackler Gallery. Environmental control of the Sackler exhibition galleries and collection storage areas also required attention. The environment in the temporary storage areas in the Freer during the renovation will require continuous monitoring.

Conservation research identified particular organic colorants in paintings and tested Chinese bronzes for lead content to help determine their provenance. Specific Freer research examined:

- unusual copper-green pigments on Ukiyo-e paintings,
- lead-white on Japanese paintings,
- discoloration of lead white pigments on Persian paintings particularly in the Vever collection,
- pigment samples taken from excavated objects (dated to the 5th-8th centuries A.D.) in Korean museums,
- microscopic paper fibers from very small samples, and
- metallurgy and properties of high-tin bronzes, including reconstructing the alloy and production methods used in making high-tin bronze mirrors from Aranmula, India.

In addition, an analytical project on Chinese Buddhist bronze sculpture (dated from the 3rd to the 16th centuries A.D.) began. Staff are studying the provenance and bronze manufacture methods and how they relate to the history of Chinese bronze metallurgy.



An expanded Oriental art painting conservation program also is planned. The Oriental art restoration studio staff takes a more traditional approach toward the conservation of East Asian paintings and screens than do Western conservation laboratories. Besides the work related to the Freer collections and exhibitions, the Studio staff also look forward to a future program to train Americans in order to alleviate the critical shortage in this country of persons skilled in this specialized field. There are only three facilities in the United States capable of restoring and mounting rare Far Eastern paintings and screens, and they are occupied fully with the works in their respective museums.

Collections Acquisitions - In FY 1985, Congress established a Federal funding base for collections acquisitions to the Freer Gallery. In FY 1988, the Gallery used Federal funds to purchase a carved wood, 16th century, throne panel from Mughal, India, two 15th-16th century hanging and handscrolls of calligraphy, and a set of four 17th century album leaves from the Ming dynasty. Purchases for the collection with FY 1988 Freer nonappropriated trust funds included a pair of Japanese 17th century handscrolls by Kano Yasunoba, five Chinese calligraphy scrolls from the 15th-19th centuries, and a Turkish silver and gilt bowl from the late 15th-early 16th century.

Education - During FY 1988 the Freer Gallery carried out a wide range of research and scholarly activity which became available to the public through educational programs. Educational materials included a free introductory brochure for the visually impaired; the highly successful free exhibition leaflets introducing various aspects of the Gallery's collections; and docent led tours. In FY 1988, over 20,000 visitors joined tours given four times a day.

Specific education outreach programs met the needs of various groups, including the hearing and visually impaired. Docents use customized slide sets when speaking to community groups. The Education Department sends special pre-visit education packets to schools prior to their tours of the Freer Gallery. School and community groups studying specific aspects of Asian art visited selected areas of the gallery on prearranged tours.

Renovation Project - Major renovation of the Freer Gallery building began in 1988. As a result, the Freer closed to the public in the fall of 1988 and will remain closed until the completion of the renovation work in 1992. The project will:

- include construction of an underground passage between the Freer Gallery of Art and the Arthur M. Sackler Gallery. This will provide convenient access between the Freer and Sackler to visitors and to staff who oversee and use both museums' collections,
- excavate the Freer courtyard and provide more functional space in the basement and sub-basement. Construction of a passenger elevator from a ground-level lobby on the south side of the building will improve gallery access to visitors with physical disabilities,
- triple space for conservation activities and technical study of Asian and Near Eastern art, and
- expand collections-storage space for the Freer, since the collections have nearly doubled since opening the Gallery in 1923. The project will increase Freer's collection storage area by 70 percent, to 11,500 square feet; provide 3,200 square feet of additional exhibition space in the Freer section of the



passageway between the two buildings, and increase the conservation facilities on the Freer's ground level from 1,750 to 5,765 square feet.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Annual allotments to the Arthur M. Sackler Gallery provide funds to defray the costs of special events associated with the opening of new exhibitions and to cover the travel costs for members of the Sackler's Visiting Committee. These funds also support the position of coordinator for special programs for the Freer and Sackler Galleries. The proceeds from sales in the Sackler museum shop support the purchase of acquisitions, the publication of exhibition catalogues and gallery guides, and the operation of the Sackler museum shop. In FY 1988, through the Collections Acquisition Fund, the Sackler purchased an important 17th-century Mughal Indian box with inlaid mother-of-pearl and an exceptional pair of six-panel Japanese screens from the 17th century.

Annual allotments to the Freer Gallery provide funds to defray the costs of special events associated with the opening of new exhibitions and to cover the travel costs for members of the Freer's Visiting Committee.

Restricted Funds - These funds are contributions in the form of grants and gifts from individuals, foundations, organizations, or corporations for specific purposes.

The major portion of the nonappropriated Trust funds for the Freer comes from the Charles Lang Freer bequest which restricts their use. The funds help finance the Freer's professional curatorial staff, administrative staff, acquisitions for the collection and library, the maintenance of the Freer's courtyard and the operation of the Freer museum shop. Funds from the Harold Stern Memorial Endowment support scholarly research in the field of Japanese art.

ARCHIVES OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	19	1,099	-	98	-	99	12	879	-	-
FY 1989 -Estimate	20	1,101	-	98	-	-	12	823	-	-
-Base	20	1,126								
FY 1990 Estimate	20	1,141	-	98	-	-	12	833	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	20	-	20
11 Personnel Compensation.....	657	11	668
12 Personnel Benefits.....	88	4	92
21 Travel.....	22	-	22
22 Transportation of Things.....	10	-	10
23 Rent, Communications & Utilities.....	28	-	28
24 Printing & Reproduction.....	30	-	30
25 Other Services.....	153	-	153
26 Supplies & Materials.....	34	-	34
31 Equipment.....	104	-	104
Total	<u>1,126</u>	<u>15</u>	<u>1,141</u>

Analysis of Increase

Necessary Pay..... 15

ABSTRACT - The Archives of American Art is a national research bureau with regional centers in New York, Boston, Detroit, San Francisco, and Los Angeles. The Archives is the Nation's largest repository of archival source materials relating to the history of the visual arts in the United States. It holds more than nine million documents, 400,000 photographs, 75,000 works of art on paper, and approximately 3,000 tape-recorded oral and video interviews. The Institution houses original materials in Washington, D.C., with microfilm copies of many available in regional centers and through interlibrary loan across the country. Besides providing research materials for academic scholars, students, curators, collectors, and others studying the history

of art, the Archives sponsors symposia, lectures, and other public programs; conducts an active membership program; and publishes a quarterly journal. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Archives of American Art. The Institution requires \$8,000 for Necessary Pay for existing staff funded in this line-item, along with .25 workyears and \$7,000 to annualize the partial year funding of one new position approved in the FY 1989 budget.

PROGRAM - Founded in 1954 as a private institution in Detroit, the Archives became a bureau of the Smithsonian Institution in 1970. The Archives of American Art promotes the study of American art and cultural history by assembling and preserving an ever expanding collection of letters, diaries, sketchbooks, business records, photographs, drawings, prints, oral histories, and video interviews. In making these primary historical records available to researchers and the public, the Archives advances the scholarly study and interpretation of the arts in America.

Research - College and university faculty, museum curators, graduate students, art gallery staff, and independent art historians conduct most of the research at the Archives. In FY 1988, these Archives users made 3500 research visits to the six Archives' regional centers. Interlibrary loans of 2500 rolls of microfilm reflect additional use of the collections. Acknowledgements and footnote citations to Archives' holdings appeared in more than 200 books, articles, exhibition catalogues, and dissertations published or completed during the year. The Archives of American Art Journal carried the results of work by the staff as well as by outside scholars.

Development of Collections - In 1988, the Archives successfully concluded a 22-year campaign to acquire the Walter Pach papers, a collection of letters, diaries, sketchbooks, photographs, and rare exhibition catalogues. A painter and writer, Pach was a close associate of some of the major French and American artists and collectors who played a prominent role in early 20th-century modernism. Pach's correspondence with Matisse, Brancusi, Picabia, Duchamps, Arthur B. Davies, Robert Henri, John Quinn, and others fills a large gap in documenting the Armory Show and other modern art exhibitions of the time. Groups of letters from such figures as John Sloan, Diego Rivera, Bernard Berenson, and Van Wyck Brooks cover a later period. In 1989, a detailed inventory will describe the collection, which also contains books and periodicals reflecting Pach's wide-ranging interests.

Nineteenth-century material received this year includes the papers of Alice Kellogg Tyler, a Chicago art student in Paris in the late 1880s; a diary kept by the sculptor Frederick MacMonnies in 1885 when he too studied in France; the papers of James L. Claghorn, a Philadelphia collector who corresponded with Frederic E. Church, John Kensett, Hiram Powers, and other painters and sculptors; and an important addition to the Francis Millet papers, comprising diaries and sketchbooks of the 1870s and letters from his sister describing visits from John Singer Sargent, Henry James, and Mark Twain. Useful collections of more recent date are a long series of letters (1934-1942) by the American painter Marsden Hartley, a larger group from Jean Dubuffet to Ralph Colin, and David Smith's correspondence with Kenneth Noland. Herbert Hemphill's records and an informative set of Grandma Moses' letters enhanced the Archives' growing strength in the folk art field. Additions to the Archives' oral history collection include taped interviews with the museum director John Coolidge, the folk art dealer Jeffrey Camp, and the artists Paul Cadmus, Janet Fish, Kenneth Noland, Chuck Close, Jennifer Bartlett, and, just before she died, Isabel Bishop.

Exhibitions - Several museum exhibitions benefited from documentary material in the collections. A showing of artists' illustrated letters at the Gray Gallery of New



York University drew heavily on Archives' holdings. The University of Wisconsin borrowed Frank Lloyd Wright wallpaper designs, the Art Institute of Chicago used Raymond Hood architectural renderings, Bard College displayed a series of photographs in a J. Francis Murphy show, and the Hirshl and Adler Gallery exhibited 15 letters and sketches from American artists abroad. The Archives' own exhibition of documents commemorating the seventy-fifth anniversary of the 1913 Armory Show opened in October and will be on view at its New York center through March 1989. The Archives also installed a considerable number of Reginald Marsh sketches, drawings, and letters in the American Art/Portrait Gallery Library.

Public Education - The Archives organized three substantial and well-attended symposia in 1988: "The Coming of Modernism to Chicago, 1900-1940" held at the Art Institute of Chicago; "Art for the Record: Issues of Documentation and Contemporary Art" held at the Huntington Library in San Marino, California; and "Earthquake to Albright: Modernism in Northern California, 1906-1945" held at the California Palace of the Legion of Honor in San Francisco. On a smaller scale, the Washington office sponsored eight lunchbag seminars devoted to discussions of research in progress by art historians and American Studies scholars. The Archives completed a video tape version of the film "From Reliable Sources," now available to museums, libraries, and college art history departments.

Conservation and Care of Collections - With the Archives' purchase this year of an encapsulator, a device for sealing damaged paper within sheets of mylar, the preservation of vulnerable items will proceed more rapidly than in the past. The Archives sends particularly valuable objects requiring more sophisticated methods to a conservation center. In 1988, 11 drawings, 16 photographs, and 5 rare publications received thorough, professional treatment. The computerized inventory of the collections proceeded during the year. A three-person team devotes itself to this activity, and two other staff members concentrate on the organization of works on paper and photographs.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Provided through annual allotments, these funds defray costs associated with special events, supplement travel expenses incurred by the Archives' Board of Trustees, and provide partial support for general operating costs. With support from the Research Opportunities Fund, the Archives will organize, inventory, and microfilm records which the National Arts Club donated.

Restricted Funds - Fund-raising activities, gifts, foundation and corporation grants, and a membership program generate funds for the Archives. A substantial portion of this income supports the Archives' general operating expenses, its oral history program, and its publications program.

Foundation and corporate grants provide the principal sources of support for special projects. The Archives of American Art's field collecting activities in Los Angeles and Philadelphia will continue through FY 1989 because of successful fund-raising in these geographic locations. Major grants from The J. Paul Getty Trust and The Andrew W. Mellon Foundation underwrite the costs of automating and refining the catalogue of the Archives of American Art collections. In addition, the Archives of American Art Board of Trustees continues to supplement income for the general operations of the Archives through major contributions and through its Wellin Taubman Reserve Fund established in FY 1986.



COOPER-HEWITT MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	28	1,142	19	848	7	1,860	1	510	-	13
FY 1989 -Estimate	32	1,245	19	897	7	1,180	1	958	-	50
-Base	32	1,277								
FY 1990 Estimate	32	1,297	18	933	7	1,185	1	2,666	-	50

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	32	-	32
11 Personnel Compensation.....	894	14	908
12 Personnel Benefits.....	131	6	137
21 Travel.....	4	-	4
23 Rent, Communications & Utilities.....	17	-	17
25 Other Services.....	148	-	148
26 Supplies & Materials.....	72	-	72
31 Equipment.....	11	-	11
Total	<u>1,277</u>	<u>20</u>	<u>1,297</u>

Analysis of Increase

Necessary Pay..... 20

ABSTRACT - Since its public debut in October 1976 as the Smithsonian Institution's National Museum of Design, the Cooper-Hewitt Museum has become an internationally-acclaimed pioneer in the innovative exploration of both the processes and the products of human design. The Cooper-Hewitt occupies an historic 1902 mansion built as the private residence of Andrew Carnegie. In 1972, the Carnegie Corporation gave the mansion and a small neighboring town house to the Smithsonian as a permanent home for the Museum and its collections. Wall coverings, decorative art objects, textiles, and prints and drawings constitute the nucleus of the world famous center for the study of design.

The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Cooper-Hewitt Museum. The Institution requires \$11,000 for Necessary Pay for existing staff funded in this line-item, along with workyears and \$9,000 to annualize the partial year funding of 1 new position approved in the FY 1989 budget.

PROGRAM - In 1897, the Hewitt sisters, granddaughters of Peter Cooper founder of the Cooper Union, established the Museum because of their personal interests in the education of America's designers. They saw it as a teaching laboratory, a working resource, freely available to as broad a public as possible. Struggling students, busy professionals, and the general public use the Museum's collections as guides, inspirations, and references for their own creativity.

Unlike a traditional art museum, Cooper-Hewitt prefers not to collect and display objects from the point of view of traditional aesthetic values only. Instead, the Museum seeks to document the complex nature of the design process, the products it generates at different times and in different places, and its continuing importance in the everyday lives of those who participate in it or are otherwise affected by it.

The Museum cares for more than 167,000 permanent collection items including: drawings, prints, wallcoverings, textiles, ceramics, glass, metalwork, jewelry, and related decorative arts from European, Asian, American, and other cultures and spanning 3,000 years. The Museum's specialized library of 50,000 volumes, includes more than 5,000 rare books. Many consider the Museum's holdings among the finest of their kind in the world.

The Museum presents an average of 13 new exhibitions annually. Cooper-Hewitt staff and consulting curators create many of them entirely. The Cooper-Hewitt may also organize an exhibition with a co-sponsor and with a point of view and objects considered compatible with the Museum's interests. These events draw many visitors to the Museum. In FY 1988, attendance totaled 138,689 visitors, an average of over 11,500 per month. Critics are overwhelmingly laudatory in their reviews of the exhibition program at the Cooper-Hewitt.

Four important exhibitions shown in FY 1988 devoted to contemporary architectural work included: the career in Vienna and New York City of Joseph Urban (1872-1933); celebratory arches recently commissioned for the city of Galveston, Texas from Eugene Aubrey, Michael Graves, Helmut Jahn, Charles Moore, Cesar Pelli, Boone Powell, Aldo Rossi, and Stanley Tigerman; and unbuilt projects conceived during the 1980s by more than two dozen leading architects for different American sites. The Museum presented the architectural drawings of Eric Mendelsohn (1887-1953) in October 1988.

Four other major exhibitions of FY 1988 addressed more historical themes. The Textiles Department organized "Color by the Yard, Printed Fabric 1760-1860," drawing heavily upon its own holdings. The Drawings and Prints Department likewise exhibited many superb examples of its own riches in "Honor and Glory: Monumental Arches," which appeared in conjunction with the Galveston designs mentioned above. The same department worked with colleagues at the National Museum of Sweden to produce "Versailles: The View from Sweden," a beautiful survey of French formal influences upon the Swedish royal court in the late 17th century. Boston's Museum of Fine Arts loaned Cooper-Hewitt "The Art That Is Life: The Arts and Crafts Movement in America 1875-1920," for which Cooper-Hewitt's assistant curator of textiles served as a curatorial team member.

In the realm of more conventional decorative arts interests, the Museum's exhibition calendar for FY 1988 included: "The Triumph of Simplicity: 350 Years of Swedish Silver," lent by the Swedish National Museum and Royal Family; colorful, inexpensive household ceramics from Nuremberg's Germanisches Museum manufactured in Germany between the World Wars; and "The Countess's Gems: The Burghley House Collection," an extraordinary group of precious objects dating back, in some cases, to the late 16th century. These survived as the private treasure of a single noble family in Tudor England.

For those interested in theater design, the Museum offered the colorful exhibition, "Paris Opera on Stage: Designs, Costumes, Jewels." "Surprise, Surprise: Pop Ups and Moveable Books" and "Annual Reports" drew attention to graphic design and book arts for very different audiences. Young and old visitors alike enjoyed the "The Outdoor Chair," an amusing and provocative series of one-of-a-kind works by contemporary artists and landscape architects. This was a hands-on exhibition displayed throughout the summer in the Museum's garden.

The Museum publishes with private funds exclusively. Of the FY 1988 exhibitions, Cooper-Hewitt documented "Color by the Yard" with a modest collection handbook, "Arches for Galveston" with a brochure, and "Versailles: The View from Sweden" with a full-scale catalogue which the University of Chicago Press will distribute. American Art Pottery is a thoroughly informative catalogue of the 76 piece collection donated to the Museum several years ago by William and Marcia Goodman. The catalogue emerged from the Decorative Arts Department in FY 1987, and the University of Washington Press distributes it nationally. Cooper-Hewitt exhibited this collection in FY 1985. The show toured the country under the auspices of SITES since then and went on view at the Renwick Gallery in FY 1987.

In November 1988, the Museum produced Courts and Colonies: The William and Mary Style in Holland, England, and America, is a 252-page catalogue. Editorial work also continues on both The Catalan Spirit: Gaudi and His Contemporaries, inspired by the Museum's FY 1987 exhibition; and Housing: Symbol, Sites, Structure, a project of Director Emeritus Lisa M. Taylor.

Future exhibition and publication plans also include, "What Then Remains...Legacies of Design." This exhibition will survey a broad range of creative cultural responses to the universal experience of death. Another exhibition tentatively titled, "Hiding Out" is an imaginative investigation of certain protective kinds of human design activity. A thematic publication, L'Art de Vivre: Decorative Arts and Design in France, 1789 - 1989, will accompany an exhibition of the same name, in March 1989. "L'Art de Vivre: Decorative Arts and Design in France, 1789-1989" will fill the main exhibition galleries for much of 1989 and should be one of the most important American observances of the bicentennial anniversary of the beginning of the French Revolution. Cooper-Hewitt was also fortunate during FY 1987 to obtain an agreement from cultural authorities in Prague which will permit the creation of "Czech Architecture and Design 1900-1950." This is an official exchange exhibition. The project is a joint undertaking with The National Museum of Technology in Prague, as organizing lender, and the Canadian Center for Architecture, Montreal. It may appear at one other venue, yet to be determined, in North America.

In addition to those visitors who enjoy Cooper-Hewitt exhibitions and publications, the Museum serves a large and diverse group of people who enroll for lectures, courses, symposia, workshops, and tours organized throughout the year by the Programs Department. These audiences, some of whom receive undergraduate college



credit from Parsons/New School for completed course work at the Museum, annually average 5,000-6,000 in number. During FY 1988, courses from which they could select according to their interests and needs included:

- surveys of Byzantine art and architecture, French decorative arts from 1650 to 1790, and English decorative arts between 1660 and 1760;
- Italian architecture of the 20th century, contemporary graphic design, baroque and rococo textiles, and Russian architecture and 20th century Japanese folk art and architecture; and
- seminars on advertising and the culture of consumption, industrial design for global markets, and interviews with avant garde architects Elizabeth Dillard and Billie Tsien, among others.

The Programs Department also organized tours to Miami, Florida and Venice, Italy while planning future study opportunities in eastern and central Europe and The Netherlands for FY 1989.

The Cooper-Hewitt/Parsons New School Graduate Studies Program in the History of the Decorative Arts sponsored a study course in England during the summer of 1988. The Graduate Program is the first academic degree-granting program ever offered by the Smithsonian Institution. Each year, since 1982, a group of 15 to 20 students enroll for a two-year period of class work, field trips, and independent study in various areas of the history of design and decorative arts. Accredited by the New York State Board of Regents, the Program awards a Master of Arts degree upon acceptance of a satisfactory thesis.

Much of the Cooper-Hewitt's year-round activity depends wholly or substantially upon the support received from approximately 5,500 members, individual or foundation benefactors, and corporate sponsors and patrons. The Museum hosted several special events during FY 1988 at which major corporate patrons celebrated Cooper-Hewitt's work and their own interest in the design arts. Firms including Sony, Laura Ashley, Mitchell Energy and Development Corporation, Gerald D. Hines Interests, Hearst Magazines, Potlatch Corporation, and the National Tabletop Association are several which assisted the Museum in its work. At one of the largest special events of FY 1988, officials of Philip Morris International and the Museum jointly welcomed Their Majesties King Carl XVI Gustaf and Queen Silvia of Sweden to a reception and private tours of the Swedish silver and Versailles drawings exhibitions.

Over 1,200 members enjoyed the annual June Garden Party. More than 7,000 New Yorkers toured the Museum during the single-evening celebration of the Tenth Anniversary of New York City's Museum Mile. Mayor Edward I. Koch delivered the opening remarks for the evening in the garden. A series of six free musical concerts sustained the festive mood throughout the summer season.

Private support for Cooper-Hewitt is essential to survive the intensely competitive cultural marketplace of New York City. The Museum made important progress in the campaign to raise \$400,000 to match a recent challenge grant of \$200,000 from the Andrew W. Mellon Foundation for a permanent research endowment. Gifts and pledges received in the first year of a three-year drive tallied \$124,458. Other significant fundraising accomplishments which culminated in FY 1988 included a \$650,000 grant for "L'Art de Vivre" from the Comite Colbert; \$350,000 from several benefactors for "Courts and Colonies;" \$40,000 from the Port Royal Foundation for the Versailles:



The View From Sweden catalogue; \$65,000 from Mobil to offset the cost of free public admissions on Tuesday evenings; and \$20,000 each from Potlatch Corporation for "Annual Reports" and The J.M. Kaplan Fund for "Eric Mendelsohn," as well as 30,000 Deutschmarks from the German government in partial support of the Mendelsohn show; and numerous other grants and in-kind gifts or donated services. While this impressive scale of special project support is vital to the Museum's activities, it cannot replace the federal appropriation allotment and the Institution's continuing allowance of unrestricted trust funds.

Among the Smithsonian's art museums, Cooper-Hewitt has a tradition of being one of the most active collectors, borrowers, and lenders. In the first three-quarters of FY 1988, the Museum acquired over 460 items (78 by purchase and 383 by gift); lent 44 to 13 other museums and borrowed 507 from 43 lenders.

The most significant purchase of FY 1988 was an enormous group of Wiener Werkstatte Archive designs for textiles and wallcoverings which represent an exhibition and study resource absolutely unique outside of Vienna. More than 250 designs by over 50 designers represent over 1,488 pattern variations. The Regents Special Acquisition Fund provided most of the funding for this historic acquisition. The balance came from the Museum's Trust funds.

Plans to deaccession items remain an important part of modern collection management activity at Cooper-Hewitt. During FY 1988, the Museum deaccessioned substantial groups of unneeded and inappropriate textiles, old master prints (donated expressly for eventual sale), and paintings.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Museum obtains these funds from a variety of sources including museum shop sales, product development, membership and admissions fees, donations, fundraising events, and allotments. The allotments support salaries of the director, administrative officer, curators, registrar, educator, and various staff members and help defray expenses associated with special events such as exhibition openings. Special Purpose Funds support educational programs, exhibitions and publications for the Museum.

Restricted Funds - Designated for specific purposes, these funds derive from grants, bequests, and other donations from individuals, organizations, and corporations. In FY 1989 and FY 1990, these funds support exhibitions such as "Courts and Colonies: The William and Mary Style in Holland, England, and America," "L'Art de Vivre: Decorative Arts and Design in France, 1789-1989," and assorted smaller projects.

Government Grants and Contracts - Various government agencies and departments provide these funds for specific program support. The Museum annually seeks funding in varying amounts from the New York State Council on the Arts for a small number of exhibition support and other programs.

NATIONAL MUSEUM OF AFRICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1987 Actual	46	3,456	1	112	3	325	-	219	-	-
FY 1988 -Estimate	57	3,568	1	47	3	258	-	43	-	-
-Base	57	3,624								
FY 1989 Estimate	58	3,659	1	51	3	119	-	35	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1988</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1989</u>
FTE Allocation.....	57	1	58
11 Personnel Compensation.....	1,602	24	1,626
12 Personnel Benefits.....	324	11	335
21 Travel.....	45	-	45
22 Transportation of Things.....	94	-	94
23 Rent, Communications & Utilities.....	3	-	3
24 Printing & Reproduction.....	121	-	121
25 Other Services.....	849	-	849
26 Supplies & Materials.....	409	-	409
31 Equipment.....	47	-	47
Collections Acquisition.....	130	-	130
Total	<u>3,624</u>	<u>35</u>	<u>3,659</u>

Analysis of Increase

Necessary Pay..... 35

ABSTRACT - The National Museum of African Art (NMAfA) is the only museum in the United States devoted to the collection, preservation, research, exhibition, and interpretation of the visual arts of sub-Saharan Africa. Founded in 1964 as a private non-profit institution, the Museum became a bureau of the Smithsonian Institution in August 1979 following the enactment of Public Law 95-414. In December 1986, the Museum moved from its original Capitol Hill location to its new facilities on the Mall as a part of the Quadrangle complex, which opened to the public in September 1987. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for

the National Museum of African Art. The Institution requires \$19,000 for Necessary Pay for existing staff funded in this line-item, along with .50 workyears and \$16,000 to annualize the partial year funding of two new positions approved in the FY 1989 budget.

PROGRAM - The NMAFA endeavors to instill an appreciation and understanding of the diverse cultures in Africa south of the Sahara. Although the Museum's primary emphasis is on the traditional cultures of the sub-Saharan region, it also studies and exhibits the ancient and contemporary arts of the entire continent. The Museum develops and presents a variety of interpretive programs including exhibitions, lectures, gallery tours, classes, workshops, audio-visual presentations, and publications. The aesthetics of traditional African art motivate each program, and the Museum actively cooperates and coordinates its activities with those organizations and institutions whose purposes are complementary.

The Museum opened its new facility on the Mall on September 28, 1987. By the end of FY 1988, its first full year of operation in the new building, the museum's attendance totalled over 644,000. This is more than 12 times the average annual attendance in the former Capitol Hill location. With funding provided from FY 1985 through FY 1989, the Museum has been able to strengthen its staff and expand its programs in order to serve this increased audience.

Research - The Museum continued its program of scholarly publications which complemented a new cycle of exhibitions that opened in FY 1988. A monograph entitled Images from Bamum accompanied an exhibition of German colonial photography at the court of King Njoya of the Cameroon, 1902-1915. Dr. Christraud Geary, guest curator for the exhibition and previously a Rockefeller Fellow in residence at the Museum, wrote the text. This book is a significant contribution to the study and use of early photographs from Africa in historical art research. A monograph and a gallery brochure accompanied an exhibition of Kalabari ancestral screens which opened in early FY 1989. Also in FY 1989, the Museum published a catalogue which accompanied an exhibition devoted to the sculpture of the contemporary Nigerian artist, Sokari Douglas Camp. Dr. Herbert Cole, the Museum's most recent Rockefeller Fellow in residence, is continuing his research on "Archetypes: Five Themes in the Visual Arts of Africa," an exhibition scheduled to open in the fall of 1989. A scholarly publication that illustrates all the exhibited works of art and explores the related imagery and ideas will accompany this exhibit.

Research and planning for future major exhibitions include a ground-breaking initiative on the art and architecture of African nomads. The Museum received a grant from The Rockefeller Foundation for a working conference which set the parameters for this exhibition. The Rockefeller Foundation also gave NMAFA a planning grant in FY 1988 for this exhibition.

Preparations are under way for hosting the VIII Triennial Symposium of the Arts Council of the African Studies Association (ACASA) in June 1989. This conference is the most important meeting of African art specialists worldwide. The Museum ensures maximum participation from Africa as well as the U.S., Canada, and Europe.

In FY 1989, the Museum plans to hire an assistant curator for Central African art. With this position filled, the Museum will have curatorial specialization for the major sub-Saharan geographic/cultural regions represented in the Museum's collection.



The Eliot Elisofon Archives, a major research component of the National Museum of African Art, is one of the largest archives in existence on African art, culture, and environment. Its holdings now include approximately 152,000 color slides, 76,500 black and white photographs, and over 120,500 feet of motion picture film and video tape. During FY 1988, the Archives focused on the acquisition of vintage 19th and early 20th century photographs which provide an invaluable resource for research and publication. Among the most important of these recent acquisitions are 728 prints taken by the White Fathers Mission in Ruanda and Burundi, ca. 1903-1905; three original album prints of Zulu warriors and a Zulu chief, ca. 1889; 121 postcards, dated 1900-1930, of the Congo region, Dahomey, Nigeria, Zanzibar, and East and South Africa.

Scholars throughout the world, as well as support staff, make extensive and increasing use of the Museum's archival holdings. In FY 1988, for example, the two archive employees processed over 600 requests for slides and prints and also provided research assistance for exhibitions and publications. With funding received in FY 1989, the Museum will hire an archivist with specialized knowledge in the art history of Africa to conduct research. This archivist will develop and establish catalogue procedures that will provide more efficient access to the collection and also will explore the use of current computer and videodisc technology to develop the Archives further.

The National Museum of African Art Branch of the Smithsonian Institution Libraries (SIL) system, as one of the major African art library collections in the world, provides bibliographic reference and research support not only for Museum staff but for national and international scholars, including those from Africa. As a result of a major multi-year acquisition program, the library collections exceeded a projected level of 15,000 volumes and approximately 300 periodical titles in FY 1988. The Library continues to develop its collection to serve the expanded research needs of the Museum. The Library also continues an active outreach program through the publication and distribution of the free monthly Library Acquisitions List now distributed to about 500 individuals and institutions worldwide.

Collections Management - During FY 1988, the collections management staff completed the computer entry of object condition reports and location data for the entire collection. With this information in place, staff then developed a computer system for the retrieval of collection information.

The conservation staff continued its analysis of the collection to determine, in priority order, those objects needing treatment. In FY 1988, staff completed treatment of eight major pieces in the permanent collection and began treatment to stabilize other collection objects. During this same period, staff examined and treated objects on loan to the Museum as well as 21 NMAfA collection objects lent for other exhibitions.

The staff of the conservation lab engages in ongoing research projects as well. Current projects include:

- Researching and testing a cleaning system for particularly fragile surfaces. When developed, such a system will be applicable to many conservation problems and art materials.
- Examining and testing exhibition construction materials to determine those that could cause damage, such as corrosion to art objects. Staff will test



paints, lacquers, adhesives, and a number of other building materials to identify potential problems.

With funding received in FY 1989, the Museum will add an assistant conservator to the present staff of two. This will ensure that systematic treatment of the entire permanent collection proceeds at a reasonable pace. With additional funding, the Museum will purchase specialized equipment for use in mounting samples of metals for microscopic analysis. With this equipment and the contract assistance of metallographic conservation experts, work will begin first on the analysis of the Museum's collection of Benin (Nigeria) copper alloy objects and then on the analysis of Nigerian metalwork for a proposed exhibition co-organized with the British Museum.

Exhibitions - In mid-1988, the Museum opened "Images from Bamum: German Colonial Photography at the Court of King Njoya." The NMAFA, with guest curator Dr. Christraud Geary, Research Associate, African Studies Center of Boston University, organized this exhibition of photographs taken in the Cameroon, West Africa, from 1902-15. The exhibition "Shoowa Textiles," a major collection of Zairian textiles from European private collections, circulated by the University of Michigan Art Museum, Ann Arbor, also opened in the spring of 1988.

The Museum's FY 1989 schedule began with a major loan exhibition and publication devoted to ancestral screens of the Kalabari people of the Niger Delta. The Museum opened simultaneously an exhibition of contemporary sculpture by the Nigerian (Kalabari) artist Sokari Douglas Camp. Also in FY 1989, the Museum plans to present "African Gold," a collection of West African objects from the Barbier Mueller Museum collection, Geneva, Switzerland, circulated in the United States by the American Federation of Arts; "The Essential Gourd: Art and History in Northern Nigeria," organized by the Museum of Cultural History, University of California; and "African Musical Instruments," organized and circulated by the American Federation of Arts.

Dr. Herbert Cole, Professor of Art History, University of California, Santa Barbara, and recent Rockefeller Fellow in residence at NMAFA, will guest curate a major loan exhibition on the theme of "Archetypes: Five Themes in the Visual Arts of Africa," in early FY 1990. The Museum also plans to present in FY 1990 "Yoruba: Nine Hundred Years of African Art and Thought," organized by the Center for African Art, and "Portraits of Sierra Leonean Paramount Chiefs," photographs by Vera Viditz-Ward.

Development of Collections - The Museum continued to strengthen its collections by the acquisition of works of art of high aesthetic quality. An ongoing and active acquisitions program, through purchases and gifts, remains one of the Museum's highest priorities. The collection is the basis for research, exhibition, and public programs.

Noteworthy gifts received in FY 1988 include a Senufo female figure, a Fulani strip-woven cloth from Guinea-Bissau, an Akan Kente cloth, a Chokwe mask and a Kongo copper alloy circlet. In FY 1989, noteworthy gifts included a Tiv chair and a Yoruba palace door carved by Olowe Ise. Through purchase, the Museum acquired a Bassa mask, two mats and eleven textiles from the Kuba peoples, a Cross river headdress, an Mbundu staff, two Akan flags and three Nupe vessels. A combination of Federal and donated private funds made possible the acquisition of a Mangbetu terra-cotta vessel. A grant from the James Smithson Society supplemented Federal funds to make possible the acquisition of an extraordinary Hongwe reliquary guardian figure from Gabon. With special funds provided by the Collections Acquisition Program of the Board of Regents, the Museum acquired a superb figurative Yoruba Shango staff. This exceptional work is

a major addition to the national collection of African art that the Museum is selectively building.

Education - The National Museum of African Art develops and presents a variety of programs to increase public awareness and understanding of African art. Interpretive programs such as lectures, films, gallery talks, and workshops supplement information provided by exhibitions. Such programs offer a range of opportunities and incentives for learning about Africa and its artistic heritage.

In FY 1988, the first year in its new location, the Museum offered more than 1,600 public programs, serving more than 43,000 visitors. An additional 3,000 individuals in senior care centers and hospitals participated in the Museum's various outreach programs. A newly developed lending program makes available, on request, slides, films, and videotapes on African art.

Beginning in FY 1989, the Museum's very successful Teacher's Workshop Series will be available, on request, to all teachers throughout the school year. This program, which began on a limited basis in 1988, helps teachers integrate museum tours and the study of African visual traditions into their classroom activities. The Museum also continues to sponsor classes and lectures on African art each year in conjunction with other Smithsonian programs, universities, and outside organizations.

The Museum participated in the spring 1988 Career Awareness Program coordinated by the Office of Elementary and Secondary Education. This program gave eight minority high school students an opportunity to learn about museology by observing and working with the staff.

In FY 1989, a new program, "African Art for High School Students," began. A grant from the Smithsonian Women's Committee funded this ten-week pilot program. It provides 13 students, from seven D.C. high schools, an opportunity to study African art in the Museum. To encourage students to complete the program, the Museum provides instructional materials, African art publications, and transportation.

The Museum's docent training program ensures that knowledgeable volunteer guides are available to conduct tours and other Museum programs. During FY 1988, more than 18,000 visitors participated in docent-led general gallery tours and specific collection tours. During FY 1989, the Museum plans to recruit and train approximately 50 new docents to serve this growing audience.

Automation - By the end of FY 1988, each department of the Museum had basic automation capability, with a total of 36 workstations in place. The computer specialist who will join the staff in FY 1989 will establish and monitor a cyclical replacement program for automation equipment and assist in selecting and developing specialized software for all departments of the Museum.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from the Museum's share of net proceeds from the museum shop, courses conducted in cooperation with Washington metropolitan area public education institutions, and allotments. The NMAfA uses these funds to provide additional support for the Museum's education and collections acquisition programs, exhibition openings, and travel costs associated with meetings of the Museum's Commission. In FY 1989, an allotment also will support the salary costs of one employee.

Restricted Funds - Individuals, foundations, organizations, and corporations contribute these funds in the form of grants and gifts for specific purposes. A grant from the Shell Oil Company Foundation received in FY 1988 will support costs associated with the VIII Triennial Symposium on African Art which the Museum will host in 1989. A generous private donation will augment the Museum's publication efforts over a five year period beginning in FY 1988. A grant from the James Smithsonian Society supplemented appropriated funds to make possible the acquisition of an exceptional Hongwe reliquary guardian figure from Gabon. Also in FY 1988, the Rockefeller Foundation provided a grant for a working conference and a planning grant for a future exhibition on the art and architecture of African nomads. In addition, a grant from the Women's Committee of the Smithsonian National Associates Program will fund a pilot education program on African art for 13 D.C. high school students. In FY 1988 with funds provided by the Smithsonian's Collection Acquisition Program, the Museum acquired a superb figurative Yoruba Shango staff.

The Museum will continue to seek additional funds from private sources to strengthen the permanent collection.



ANACOSTIA MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	15	919	1	18	-	15	-	4	-	-
FY 1989 -Estimate	20	1,010	1	44	-	-	-	-	-	-
-Base	20	1,030								
FY 1990 Estimate	21	1,050	1	47	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	20	1	21
11 Personnel Compensation.....	567	14	581
12 Personnel Benefits.....	98	6	104
21 Travel.....	5	-	5
22 Transportation of Things.....	10	-	10
23 Rent, Communications & Utilities.....	30	-	30
24 Printing & Reproduction.....	50	-	50
25 Other Services.....	169	-	169
26 Supplies & Materials.....	50	-	50
31 Equipment.....	50	-	50
42 Insurance Claims & Indemnities.....	1	-	1
Total	<u>1,030</u>	<u>20</u>	<u>1,050</u>

Analysis of Increase

Necessary Pay..... 20

ABSTRACT - Located at Fort Stanton Park in southeast Washington, D.C., approximately six miles from the Mall, the Anacostia Museum is a national resource on black history and culture in America. The Museum's exhibitions, scholarly and applied research, historical documentation, and interpretive and educational programs offer scholars and the public the opportunity to study the history and culture of black America from a unique multi-ethnic perspective. The Smithsonian is not seeking funds for programmatic increases in FY 1990 for the Anacostia Museum. Necessary Pay of \$7,000 is required for existing staff, along with .50 workyears and \$13,000 required



to annualize the partial year funding of two new positions approved in the FY 1989 budget.

PROGRAM - The Anacostia Museum is a national prototype for scholarly and applied research, historical documentation, exhibitions, and educational programs that interpret for the public the experiences of black Americans and their contributions to science, history, and the arts. The Anacostia Museum collaborates with other Smithsonian museums and programs, when possible, to conduct research and develop exhibitions on subjects related to black history and culture.

Established in 1967 as a cultural resource for the people of Anacostia, the Museum has developed into a museum on Afro-American history and culture. It is a valuable source of materials on black American history for other museums and organizations. It has developed innovative ways for introducing nontraditional museum audiences to the worlds of science, history, and the arts. The Museum is an active member in several professional museum associations. These include the American Association of Museums and the African American Museums Association. The Anacostia Museum works with other museums and research institutions, universities, and archives throughout the United States to enhance the awareness and appreciation of the historical and cultural contributions of blacks to American society.

Research - Since its founding in 1967, the Anacostia Museum has documented the history and culture of black Americans and their significant contributions to the heritage of this nation. During the past few years, the Museum has strengthened its research capabilities and expanded its exhibition program. It must now expand and professionalize its related support. With FY 1989 funding, the Museum will reinforce its research support by hiring a professional registrar and librarian.

Research continues on a major exhibition scheduled to open in May 1989, "The Real McCoy: Afro-American Invention and Innovation, 1619-1930." The exhibit and its catalogue will focus on black craftsmen's role in developing technology; the innovative techniques they brought to their work; and the social and cultural context within which they worked. The exhibition's catalogue will break new intellectual ground as the first published social history of Afro-American invention. Research thus far has revealed a treasure trove of relevant information on the contributions of black Americans to technological innovation, including:

- The contributions of Elijah McCoy's invention of the earliest marketable hydrostatic engine lubricator in 1872 (Not only did the invention indicate technological improvements for other heavy machinery and railroad locomotives, it also is one of the possible explanations for the origin of the term "the real McCoy.");
- African iron and steel smelting techniques and African technological influences on colonial North America;
- The impact of Norbert Rillieux's sugar refining process;
- The roles of black inventors Granville Woods and Louis Latimer in the invention of the induction telegraph and the electric light bulb, respectively; and

- The importance of Garrett Morgan's invention of the first automatic traffic signal in 1923 to the expanded use of the automobile in 20th-century America.

During FY 1988, Anacostia Museum staff completed the exhibit script, identified artifacts for the exhibit, and began exhibition design work. An original patent model from the Cliff Petersen collection and two full-scale demonstration models of a stop light and a gas mask invented by one of the foremost black inventors, Garrett Morgan, are among the several outstanding artifacts already identified. During FY 1988, the Museum also awarded the contract for the exhibit production work.

During FY 1988, the Museum also conducted research on three other exhibitions scheduled for FY 1990 and FY 1991:

- "P.H. Polk: The Man and His Work," scheduled to open in early 1990, will feature Prentice H. Polk's photographic depiction of 20th-century southern folk life. It will include vintage and signed prints from the P.H. Polk estate, Tuskegee University archives, and private lenders and galleries. Born in 1898, Polk was a photographer whose documentation of southern folk life extended for more than half-a-century. He gained national recognition during the last decade of his life. The use of videotape excerpts of television interviews with Polk conducted by NBC, CBS, and MetroMedia News will also allow visitors to learn more about the man himself, as well as his work. Louise D. Hutchinson, former director of research at the Anacostia Museum, will be the guest curator.
- "Health Problems of the Black Community," scheduled to open in October 1990, will be a social history of the health problems, from pellagra and tuberculosis to sickle cell anemia, that devastated slaves and post-slavery southern farmers, and that continue to plague the contemporary black community. It also will present new information on African cures and remedies.
- "Black Washington: Culture and Conflict in Historical Perspective," scheduled to open in 1991, will highlight the pivotal roles that blacks have played in shaping the culture of the Nation's Capital within the context of the city's economic, educational, political, and residential conflicts. The exhibition will be part of the city's observance of the 200th anniversary of its original survey. It will provide a social and cultural history of Washington since the late 18th century.

Collections Management - During FY 1988, the Museum made great progress in developing a stronger collections management capability. Anacostia's small but valuable collection, consisting of books, letters, photographs, and art work, has grown over the past twenty years primarily as the Museum acquired artifacts to display in an exhibition or as it received donations. However, the Museum had never developed a comprehensive collections management policy. Within the Smithsonian, the development and approval of such a policy is an essential prerequisite for a museum to receive full authority to establish permanent collections. The Anacostia Museum will complete a comprehensive Collections Management Policy Statement and an inventory of its current collection in FY 1989.

Exhibitions at the Museum - A record number of more than 42,000 people visited the exhibition, "Climbing Jacob's Ladder: The Rise of Black Churches in Eastern

American Cities, 1740-1877," during its extended run at the Museum from October 1987 through October 1988. In researching the exhibition, historian Edward Smith unearthed a history rich in artifacts, chronicling the black separation from racist congregations in the late 18th and early 19th centuries. The exhibit showed black churches as arenas of self-pride and rejuvenation for communities bereft of mainstream social service institutions.

With original church pews, hymnals, photographs, and the tattered frocks of itinerant preachers, Smith recreated the struggles and pathos of one of America's foremost institutions. The exhibition presented approximately 150 artifacts ranging in size from church pews to tiny hymn books. It included:

- a pulpit belonging to Lott Carey, a Virginia slave who became an early 19th-century missionary to West Africa (from the First African Baptist Church of Richmond, Virginia);
- a reed organ of rare construction dating from 1864 (from the Bethel A.M.E. Church in Baltimore -- one of the oldest black congregations in America); and
- an extremely rare 19th-century hymn book (from the United Library of Garrett-Seabury Theological Seminaries at Evanston, Illinois), which was the first hymn book compiled by a black American (Rev. Richard Allen) and the first hymn book compiled specifically for a black congregation (the Mother Bethel Church in Philadelphia).

The Smithsonian Institution Press published a catalogue replete with color photographs of the artifacts. The catalogue not only was a beautiful companion to the exhibition but also remains a contribution to the scholarly body of Afro-American religious history.

Also in FY 1989, the Museum has scheduled "Inspiration: 1961-1989," a retrospective showing of art created by some 35 members of the District of Columbia Art Association (DCAA), to open in January 1989. The retrospective will include such well-known and respected Afro-American artists as Richard Dempsey, Lois Mailou Jones, Alma Thomas and James Wells. A catalogue chronicling the DCAA's history will accompany the exhibit.

Traveling Exhibitions - The Anacostia Museum has produced several traveling exhibitions related to the history, culture, and achievements of black Americans. These include "Out of Africa"; "The Frederick Douglass Years"; "Black Women: Achievements Against the Odds"; and "Mary McLeod Bethune and Roosevelt's 'Black Cabinet'." These traveling exhibitions, circulated by the Museum and by the Smithsonian Institution Traveling Exhibition Service (SITES), allow the Museum to reach a diverse national audience. SITES also distributes a brochure, "Black History and Ethnic Studies Exhibitions from the Smithsonian Institution." The brochure highlights 16 SITES exhibitions currently available for travel, including "Black Women" and "Out of Africa," that are of particular interest to institutions looking for traveling exhibitions in these fields.

"Black Women: Achievements Against the Odds" profiles the lives, careers, and accomplishments of 200 black women. Among them are: Madame C.J. Walker (America's first black millionaire), Edomonia Lewis (one of the first black female American artists to gain international recognition), activist Rosa Parks, performer Bessie



Smith, and former Congresswoman Barbara Jordan. During FY 1988, five locations exhibited "Black Women." These included the American Women's Heritage Society in Philadelphia; Alpha Kappa Alpha in Springfield, Illinois; and Valencia Community College in Orlando, Florida.

"Out of Africa" documents the early chapters of black American history. It addresses the trans-Atlantic slave trade from Africa, slave life in the American colonies, the abolition movement, and colonization efforts by free blacks in West Africa. Five sites presented "Out of Africa," including the Seattle Public Library in Seattle, Washington; Delta College in University Center, Michigan; and the African American Museum in Hempstead, New York.

SITES has selected both "Climbing Jacob's Ladder" and "The Real McCoy" to be traveling exhibitions. "Climbing Jacob's Ladder" will go on tour as early as April 1990. Anacostia is currently redesigning three other traveling exhibitions: "Out of Africa," "The Frederick Douglass Years" and "Mary McLeod Bethune and Roosevelt's 'Black Cabinet'." These lightweight redesigns will be suitable for community centers, schools, and other nontraditional sites for Smithsonian exhibits.

Public Education and Orientation - During FY 1988, the Museum presented a number of public programs to complement the "Climbing Jacob's Ladder" exhibition, which the Museum's visitors and the community received enthusiastically. Capacity crowds attended a series of programs held at Our Lady of Perpetual Help Church. Two of these were Toshi Reagon's "Tribute to Dr. Martin Luther King, Jr.: Songs of the Civil Rights Movement" and a concert by D.C.'s award-winning Eastern Senior High School choir, which later won second place at the International Youth and Music Festival in Vienna, Austria, in July 1988. Hundreds of senior citizens enjoyed "The Life and Times of Richard Allen," presented jointly by the Museum and the National Museum of American History. The Museum also presented the program at Savoy Elementary School and at Eastern Senior High School for elementary and senior high school social studies teachers and community residents.

During the year, the Museum sponsored many other public programs, including:

- "Poetry in the Spiritual," by singer and performance poet Kweli Smith;
- A Lunch Bag Forum slide lecture by Richard Powell of the Washington Project for the Arts on "Religion and Afro-American Art";
- A storytelling session featuring tales in the Black folktale tradition by Lorr (sic) Lorenzo Calender II;
- A concert and lecture by noted scholar and musician Pearl Williams-Jones on "Climbing Jacob's Ladder: The Evolution of the Spiritual in Black Worship";
- A concert of black sacred music presented by The Brothers, Inc.; and,
- A second Lunch Bag Forum presenting "A Parting of the Ways: The Conservative/Progressive Controversy and the Post-Bellum Black Church" by Dr. Clarence G. Newsome, assistant dean of the Howard University School of Divinity.

The Museum's concern with preserving Afro-American artifacts led to a seminar on conservation in February 1988. More than 50 people, mostly representing black



churches and other institutions, met at nearby Emmanuel Baptist Church. A historian from the Smithsonian Institution Archives and conservators from the Conservation Analytical Laboratory, the National Museum of American History (NMAH), and the National Museum of African Art (NMAfA) provided assistance to the seminar participants. Since the initial meeting, seminar group members have continued to meet for monthly discussions at the Museum. They also have participated in a workshop on paper conservation conducted by a NMAH staff member.

Some 200 children and adults participated in a series of summer aerospace workshops sponsored jointly by the Anacostia Museum and the National Air and Space Museum. These intergenerational workshops offered young people the opportunity to build and launch kites, hot air balloons, and rockets. While participants came from all over the city, most were neighborhood residents.

Future Space Development of the Museum - In May 1987, the Anacostia Museum opened its new public exhibition and education facilities at Fort Stanton Park. The expanded facility provides better visitor services, including off-street parking, and houses formerly dispersed museum programs. The Museum soon will initiate a master plan to determine the long-range space needs for its research, exhibition, and public service programs. This plan would reflect long-range requirements for artifact storage and space for exhibitions and staff. It will also assess the need for an auditorium to accommodate the large numbers of people who attend the Museum's educational programs. Based on the master plan, the Museum will evaluate different alternatives for future facilities development. Among them would be the relocation of the Museum to National Park Service land at Poplar Point, near the future Anacostia Metrorail Station on the Green Line.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An annual allotment supports the salary costs of a woodcrafter. During FY 1988, the woodcrafter completed new exhibit cases and other display materials for the exhibition "Climbing Jacob's Ladder." Additional funds derived from donations and exhibition rentals purchase supplies and materials to support the Museum's programs.

Restricted Funds - These are gifts which organizations and individuals have designated to support specific Museum programs.

CONSERVATION ANALYTICAL LABORATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	37	2,533	-	-	-	100	1	43	-	11
FY 1989 -Estimate	41	2,519	-	-	-	43	1	47	-	17
-Base	41	2,568								
FY 1990 Estimate	42	2,628	-	-	-	50	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	41	1	42
11 Personnel Compensation.....	1,524	42	1,566
12 Personnel Benefits.....	226	18	244
21 Travel.....	55	-	55
22 Transportation of Things.....	14	-	14
25 Other Services.....	400	-	400
26 Supplies & Materials.....	149	-	149
31 Equipment.....	200	-	200
Total	<u>2,568</u>	<u>60</u>	<u>2,628</u>

Analysis of Increase

Necessary Pay.....	16
Program Funds.....	44

ABSTRACT - The Conservation Analytical Laboratory is the Smithsonian's specialized research facility for wide-ranging aspects of the conservation and technical study of museum objects. CAL advises and assists Smithsonian and other museums in the study, preservation and conservation of objects of artistic, scientific, cultural, and historical importance. CAL performs research on the conservation-related properties of these materials, the improvement of conservation treatment technology, and the extraction of historical information from the technical record of these materials. CAL applies the knowledge gained from scientific research directly to the actual treatment of objects, while the diversity and the wide variety in the state of preservation of these objects provide the overview needed to define

directions in conservation research. Experience with a large range of materials and broad expertise in analytical and technological studies enables CAL to engage successfully in a wide spectrum of interactive and collaborative research with anthropologists and art historians.

CAL conducts a conservation training program which includes basic and advanced conservation training, supports and organizes workshops and seminars, and disseminates the latest knowledge in the field of conservation and cultural materials research to museums and research professionals throughout the United States and the world. The Institution requires \$16,000 for Necessary Pay for existing staff funded in this line-item.

The resources contained in the CAL line-item for the hiring of an art historian reflect 1 workyear and \$44,000 associated with the Institution's special employment initiative. Justification for these resources appears in the Central Special Employment Initiative section of this budget.

PROGRAM - Archaeometry - In the field of archaeometry, CAL scientists develop or apply methods of chemical and physical analyses of museum objects and related materials, and integrate the results of such analyses with archeological, anthropological, or art historical data on the same materials. These analyses provide data concerning materials, dates, provenances, attributions, and historical technologies, which, in combination with contextual information and typological and stylistic analyses, help answer questions on the history of these cultures.

CAL scientists generate analytical data on archeological ceramics and clay resources as a major endeavor. They analyze materials from major culture areas in the Old and New Worlds for chemical and mineralogical constituents in order to identify place of origin and directions of trade. They design and execute these projects in collaboration with scholars representing institutions from all over the world. For example, in the American Southwest, they have conducted research on Hopi pottery. This research has resulted in over 1,000 analyses useful in developing models of socioeconomic obligations and reciprocity in pottery production and trade between 1300-1890. Investigators use their knowledge of the technical variability seen in the Hopi yellow wares to trace the changes that occurred before and after the Spanish arrived in 1540. In a second phase, they are examining this Spanish influence by incorporating ethnohistory to gain a perspective on changes in style.

In an innovative outreach project, CAL staff taught a science course at the Hopi Junior/Senior High School, constructed around the methodology and results of the research on Hopi ceramics. Students from the school spent a one month internship at CAL to gain practical experience with the analytical techniques.

Scientists conduct other New World projects in Mesoamerica and Central America involving the chemical characterization of ceramics. A CAL scientist involved in a long-term project in Greater Nicoya in Central America has recently received a research appointment to the University of Costa Rica in recognition of his work.

CAL is internationally active in a similar manner in projects involving the Old World. In a major study of production and distribution of Middle Eastern ceramics, researchers summarize their data while devoting a new effort to understanding the diffusion of early ceramic technologies. An Italian collaborator, who is spending a year at CAL as a Postdoctoral Materials Analysis Fellow, is a contributor to the latter. Staff have undertaken additional projects concerning the technological



history of Far Eastern porcelains, stonewares, or glazes from Egypt, the Middle East, and Far East. In these projects, the staff supplement the data derived from chemical analysis with information obtained from such techniques as scanning electron microscopy and xeroradiography.

Using lead isotope analysis, CAL scientists also completed work on a project to identify Mexican ore sources, potentially used for lead glazes on Spanish-Colonial majolica ceramics. Thus they demonstrated the use of New World raw materials for glaze production in the 16th century complementing their other work identifying the clay sources used in this ware.

CAL recently hired an art historian to collaborate in the joint program with the National Bureau of Standards and the National Museum of American Art on autoradiographic studies of paintings. This is a technique that uniquely reveals areas of initial paint application overlaid with subsequent paint films. The team has gained new insights regarding the painting techniques of two American artists, Thomas W. Dewing and Albert P. Ryder.

Conservation Science - CAL's conservation science program pursues research into the chemical and physical processes involved in the deterioration of materials in museum collections and into the parameters, both external and internal, which affect the rates of these processes. On the basis of specific Smithsonian requests, CAL scientists perform chemical, physical, and other technical analyses for conservators and curators Institution-wide.

As an example of a new research area, a materials research engineer has designed and constructed innovative testing equipment to determine variations in the strength of organic materials, such as paint layers and paper objects, under environmentally controlled conditions. In cooperation with conservators, he has established programs to evaluate the effectiveness of lining treatments and materials used for fabric supported paintings. These programs also evaluate the changes seen in paper objects when using water in their treatment. In addition, these programs determine the effect of humidity, temperature, and aging on the mechanical properties of a range of materials. By using computer models, this research engineer has predicted the effect of these changes in selected real life situations.

Scientists continue the long-term project to evaluate accelerated aging tests for paper and other cellulosic materials. Short-term tests must model long-term effects if researchers worldwide are to introduce new treatments with confidence.

This year, conservators and scientists initiated a joint program to study the effects of the various cleaning methods that conservators use to remove old varnish from paintings. They will examine the effects of different solvents on the paint layer in a project that has important implications for the conservation of paintings.

In joint programs with other institutions, CAL staff have established new ties with the Carnegie Institution to examine the organic phase of archeological bone for traces of ancient disease. This research will also provide evidence of prehistoric diets and a methodology of preparing unadulterated microsamples from collagen-derived amino acids for carbon 14 dating. In another program with the Canadian Conservation Institute and the Getty Conservation Institute (GCI), organic chemists are nearing completion of an investigation on the effect of sulphuryl fluoride fumigant on a wide range of materials. CAL is investigating proteinaceous materials and textile dyes

while the other laboratories study the rest of the materials range. GCI provides part of the financial support for this program.

A special committee for the new research program on the conservation of photographic materials advised on program directions and helped select a senior investigator. This photographic scientist joined CAL in late FY 1988 and is investigating glass collodion negative plates, a significant part of Smithsonian and other photographic collections worldwide.

Conservation Treatment - CAL conservators pursue a variety of projects aimed at the development, improvement, and testing of treatment technology.

Paintings conservators are investigating lining adhesives and supports for use in the tropics, organic coatings for paintings, and the identification of pigment sections from paintings using the scanning electron microscope. CAL undertook paintings conservation for NMAH and the Cooper-Hewitt Museum.

The furniture conservators not only participated extensively in the Conservation Training Program, but also assisted the National Gallery of Art, the White House, and the National Trust for Historic Preservation.

During FY 1988, CAL conducted textile conservation for NASM and NMAH. The textile conservator completed a research project on the stability of pigment printed textiles--now 70 percent of the American printed textile market--for museum conservators; continued research on the cause of silk flag deterioration; and devised a new method for displaying spacesuits at NASM.

The objects conservators used various techniques (x-radiography, xeroradiography, scanning electron microscopy, x-ray diffraction and mechanical testing) to examine Chinese ceramic tomb figures; to determine the process for manufacturing 6000 BC Near-Eastern plaster figures and to ascertain methods of strengthening these fragile objects; and to evaluate the effectiveness of a marble cleaning procedure. They worked on projects for the Sackler Collection, the Freer Gallery, NMAH, and NMNH. One conservator established an excavation site laboratory at Harappa, Pakistan and worked on objects from the site.

Paper conservators and interns responded to requests from NMAH, SI Archives, NMNH, NMAA, and NASM. CAL staff researched various wet light-induced bleaching treatments and tested for the effects of a range of aqueous and solvent treatments on the texture and strength of paper artifacts.

CAL and the Department of State will write a manual about the care of artistically and historically valuable embassy property.

Conservation Training - CAL increased the diversity of its Conservation Training Program activities in the last year. A committee of Smithsonian-wide chief conservators selected six individuals for CAL funded postgraduate internships to work in conservation laboratories throughout the Smithsonian. CAL also initiated a joint doctoral program with The Johns Hopkins University to train conservation scientists and in FY 1988 matriculated two students into the program. CAL ensured continuing financial support for the three national graduate level conservation training programs by again allocating Congressionally provided funds in support of their activities.

CAL's postgraduate Furniture Conservation Training Program is in its second year. With the completion next year of the formal training phase for the first class, CAL will select a new group of students for the second one. All of the students interested in working in museums found conservation positions while attending the Program. The placement record of the first class underscores the success of this new program.

CAL conservators and scientists organized and taught, with the help of outside lecturers, ten advanced courses for practicing conservators. The topics included the identification of natural and of early synthetic dyes on historic textiles; coatings and colorants for furniture; the technology and history of ancient jewelry; and the deterioration and conservation of stone.

CAL supported a number of interns at various levels of experience and expertise. This continues previous years' sponsorships but at an increased level. Seven summer interns, two graduate interns, and two of the above-mentioned postgraduate interns obtained practical experience in CAL's laboratories.

Information - CAL's information program provides specialized bibliographic and reference research support to professionals in the Smithsonian Institution and other museums. It maintains current information files on conservation and archaeometry literature, technical information, commercial products data, and internally generated reports. Users can access data on CAL Conservation Reports electronically through the Smithsonian Institution Bibliographic Information System (SIBIS). CAL maintains on-line access to the conservation literature data base of the Bibliographic Conservation Information Network (BCIN) which includes the Art and Archaeology Technical Abstracts (AATA). BCIN is a cooperative network founded by the Getty Conservation Institute in cooperation with CAL, the Canadian Conservation Institute, the International Center for Conservation (ICCROM) in Rome, the International Council on Museums (ICOM) in Paris and the International Council on Monuments and Structures (ICOMOS) also in Paris. CAL devotes considerable staff effort to combine these institutional data bases which are available to conservators worldwide. New accessions further increased CAL's unique collection of reprints from the professional literature in conservation, archaeometry, and related subjects, and this resource now contains over 19,000 reprints.

The public information program continues to provide information in response to questions ranging from the general public to conservation professionals. On the average, CAL answers 60 questions from the general public and 25 from professionals each month. In addition, CAL has given out over 1,200 copies of their 165-page text Approaches to Pest Control in Museums in answer to questions and as supplements to courses since its publication in FY 1986.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These derive from the fees charged to participants in the advanced conservation specialist programs sponsored by CAL. These fees partially offset the expenses incurred in organizing these courses. Support from the Educational Outreach Program enabled the outreach project with the Hopi Junior/Senior High School. A grant from the Scholarly Studies Program provided support for the study of paintings by Thomas W. Dewing. Grants from the Research Opportunities Fund supported a number of ongoing research projects.



Restricted Funds - Funds provided in 1987 by the Getty Conservation Institute partially supported in 1988 a multiyear study on the effects of fumigants on materials in museum collections.

OFFICE OF EXHIBITS CENTRAL

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	47	1,880	-	-	-	-102	-	-	-	-
FY 1989 -Estimate	46	1,900	-	-	-	152	-	-	-	-
-Base	46	1,947								
FY 1990 Estimate	46	1,963	-	-	-	152	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	46	-	46
11 Personnel Compensation.....	1,426	11	1,437
12 Personnel Benefits.....	225	5	230
21 Travel.....	4	-	4
23 Rent, Communications & Utilities.....	1	-	1
24 Printing & Reproduction.....	-	-	-
25 Other Services.....	101	-	101
26 Supplies & Materials.....	150	-	150
31 Equipment.....	40	-	40
Total	<u>1,947</u>	<u>16</u>	<u>1,963</u>

Analysis of Increase

Necessary Pay..... 16

ABSTRACT - The Office of Exhibits Central (OEC) is essential to the success of many Smithsonian exhibitions. OEC's specialists and up-to-date facilities offer Smithsonian units with little or no exhibition capability expertise in all phases of exhibit design and production. Most OEC projects are unique and involve the exhibition of objects from the Institution, other museums, and private collections. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Office of Exhibits Central. The Institution requires \$16,000 for Necessary Pay for existing staff funded in this line-item.

PROGRAM - The Office of Exhibits Central provides comprehensive service and expertise in exhibition design and production. "King Herod's Dream: Caesarea on the Sea," produced in FY 1988 for the Smithsonian Institution Traveling Exhibition Service (SITES), provides a sample of the range of OEC work:

- Design. OEC designed every feature for the SITES' traveling exhibition and for the installation in the Evans Gallery at the Natural History Museum, from exhibit case details to typography for labels, and from selection of the wall colors in the gallery to the placement of objects in cases;
- Editing. OEC received large portions of the script in outline form. The OEC editor researched, using materials provided by the curators, and wrote or rewrote the majority of the copy. In addition to revising for accuracy, OEC edited the script to make it appropriate for a lay audience;
- Graphics. The graphics lab silk-screened labels, text panels, diagrams, and maps; mounted photographs; and mounted and framed prints;
- Models. OEC built several models employing a variety of techniques, including: (1) a model of a merchant vessel from 100 C.E. (Common Era), using drawings of several shipwrecks and frequent consultations with the curator, (2) a scale model of a trench showing archaeologists at work as well as tools and equipment, (3) a full-size fiberglass model of a balk, the earth wall of the excavation, and (4) a life-size reproduction of a Crusader burial;
- Brackets. OEC fabricated custom brackets for about 140 objects to secure them in position while on display and in some cases to secure them permanently for travel. Of particular note is the bracket for the tyche, a 1200-pound marble statue of the city's goddess. After consulting with conservators, OEC decided that the existing bracket might damage the statue during travel. A new bracket, designed and produced under OEC supervision, will protect the statue while it travels;
- Fabrication. OEC built all the components and furniture for the exhibit. This included text and photo panels, wall-hung vitrines, free-standing exhibit cases, the colonnaded street, and pedestals for objects in cases as well as for large objects such as the tyche. OEC also built shipping containers with custom interiors which will ensure the safety of the objects during travel.

Although "King Herod's Dream" was the largest and most complex project in FY 1988, OEC completed more than 200 other projects. Projects produced for the Smithsonian Institution Traveling Exhibition Service include: "Field to Factory," a panel exhibition adapted from the American History Museum's exhibition; "Soundtracks," a children's exhibition about sounds in the environment with numerous inter-active components; "Victorian Gardens," produced in cooperation with the Office of Horticulture; and "Rainforests," for which OEC edited the script, created the 12-foot fig tree model, and made the life-size figures for the pygmy and rubber tapper dioramas.

OEC supports nearly every Smithsonian office and bureau each year. In FY 1988 projects included:



- Natural History Museum. OEC built more than 100 exhibit cases for "Crossroads of Continents: Cultures of Siberia and Alaska" and made models of Devonian Era trees, bushes, and ground-cover plants for the "Conquest of Man" exhibition;
- American History Museum. OEC painted a mural for "A Material Culture" and designed an exhibition about Irving Berlin;
- Visitor Information and Reception Center. OEC designed new pylons to advertise summer hours at the museums;
- Folklife Festival. OEC fabricated panels, mounted photographs, and silk-screened text.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Proceeds from the sale of the OEC book A Freeze-Dry Manual through the Smithsonian Institution Press and reimbursements from internal Smithsonian units provide these funds. OEC uses the funds to purchase supplies, materials, and services in support of OEC activities; to defray costs associated with special events; and to supplement travel expense.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	13	660	8	300	23	3,063	1	947	-	24
FY 1989 -Estimate	15	688	8	314	23	1,560	-	1,685	-	9
-Base	15	703								
FY 1990 Estimate	15	708	8	314	20	1,881	-	1,643	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	15	-	15
11 Personnel Compensation.....	450	4	454
12 Personnel Benefits.....	76	1	77
21 Travel.....	10	-	10
22 Transportation of Things.....	53	-	53
25 Other Services.....	94	-	94
26 Supplies & Materials.....	5	-	5
31 Equipment.....	15	-	15
Total	<u>703</u>	<u>5</u>	<u>708</u>

Analysis of Increase

Necessary Pay.....

5

ABSTRACT - The Smithsonian Institution Traveling Exhibition Service (SITES) is prepared to meet a challenging mandate in FY 1990 by strengthening its efforts in these three areas: the circulation of Smithsonian collections and research; the development of exhibitions that address the needs and cultural interests of minority audiences; and the distribution of low-cost programs to museums and other educational institutions with limited budgets. SITES operates the largest traveling exhibition service in the world. Commensurate with this role is a responsibility to ensure that SITES programs reach not only large numbers of people, but also audiences of all ages and backgrounds. However, the Smithsonian is not seeking additional funds for FY 1990 programmatic increases for SITES. The Institution requires \$5,000 for Necessary Pay for existing staff funded in this line-item.

PROGRAM - SITES exhibitions draw upon the collections of the Smithsonian, United States and foreign museums, foreign governments, private individuals, and organizations throughout the world. The subject matter represented in these programs encompasses the diverse disciplines of the Smithsonian, including the arts, natural history, design, archeology, anthropology, science and technology, decorative arts and crafts, and popular culture. For a participation fee which the exhibitor pays to SITES, the exhibitor receives an exhibition for a period of four to eight weeks, as well as one-way shipping costs and comprehensive insurance. Every exhibition includes curatorial and registrarial information, handling instructions, technical information, publicity materials, suggested educational activities and public programs, and often publications.

Apart from its exhibition program, SITES regularly advises colleagues at other museums on various professional topics such as shipping and insuring of artifacts, installation techniques, exhibition security, design and upgrading of museum spaces, and contract matters.

At any given time, more than 120 SITES exhibitions are in circulation around the country or globe, or are in some stage of planning and production. An estimated five million people each year view SITES programs in museums, galleries, and educational and cultural institutions around the world. Since its inception in 1952, over 110 million people have visited one of the Smithsonian's traveling shows in some 15,000 communities. The Smithsonian Magazine publicizes the locations of certain SITES shows in each issue, thus helping to increase the Smithsonian's national audience. SITES markets exhibitions directly to more than 9,000 institutions and individuals every year through Update (its annual catalogue of available exhibitions), and a quarterly newsletter called Siteline.

During FY 1988, 98 SITES exhibitions traveled in the United States to 202 cities in 43 states and the District of Columbia. Total exhibition bookings came to 333 in FY 1988, including 13 bookings outside the United States.

Alabama 4	Montana 1
Alaska 1	Nebraska 3
Arizona 2	Nevada 2
Arkansas 3	New Hampshire 2
California 24	New Jersey 1
Colorado 5	New Mexico 11
Connecticut 4	New York 26
Delaware 0	North Carolina 8
District of Columbia 6	North Dakota 0
Florida 26	Ohio 8
Georgia 10	Oklahoma 1
Hawaii 1	Oregon 5
Idaho 0	Pennsylvania 13
Illinois 11	Rhode Island 0
Indiana 7	South Carolina 2
Iowa 6	South Dakota 0
Kansas 8	Tennessee 10
Kentucky 5	Texas 24
Louisiana 0	Utah 6
Maine 1	Vermont 0
Maryland 8	Virginia 6
Massachusetts 9	Washington 7



Michigan 13  
Minnesota 5  
Mississippi 3  
Missouri 7

West Virginia 3  
Wisconsin 12  
Wyoming 0

SITES maintains an active international program, sharing collections from the Smithsonian and other sources in addition to exhibition expertise with millions of people outside the U.S. In FY 1988, 13 SITES exhibitions reached audiences abroad. Four shows traveled to Canada: "Twenty-five Years of Manned Space Flight" (two bookings); "Audubon: Science into Art"; "Beauties of the Coral Reef"; and "Athletes: Photographs, 1860-1986." Four others toured in Israel, Luxembourg, Japan, and Puerto Rico, respectively: "Twenty-Five Years of Manned Space Flight"; "Beauties of the Coral Reef"; "Hollywood: Legend and Reality"; and "Diamonds Are Forever: Artists and Writers on Baseball." "New Horizons: American Painting, 1840-1910" visited four cities in the U.S.S.R.

Smaller museums and organizations look to SITES for light-weight, easily installed, low-cost exhibitions. SITES developed this type of show during the 1970s. Another specialized exhibition format SITES initiated is the poster panel exhibition of which four currently are available for direct purchase. These exhibitions range in subject matter from black history to science. In FY 1987, SITES published a poster panel show, "Diversity Endangered," which explores the global problems of vanishing species and habitats. For the first time, SITES offered with this program cardboard kiosk mounts and an educational videotape.

Since moving to the S. Dillon Ripley Center in FY 1987, SITES hired an Education Coordinator to plan and host workshops for museum colleagues about various aspects of managing traveling exhibitions; planned for the proper outfitting and installation of exhibitions (two to date) in a small Introductory Gallery; worked closely with the International Center to produce "Generations"; installed the second major exhibition in the International Gallery, "Tropical Rainforests: A Disappearing Treasure"; and contributed to the Smithsonian's international program through Quincentenary exhibition planning.

SITES estimates that 53 new exhibitions will begin their tours during FY 1989 and FY 1990. Among the major new exhibitions for FY 1989 are: "American Art from the Cooper-Hewitt"; "Frank Lloyd Wright: Preserving an Architectural Heritage"; "Views of Rome: Watercolors and Drawings from the Collection of the Biblioteca Apostolica Vaticana"; "Climbing Jacob's Ladder"; and "Crossroads of Continents: Cultures of Siberia and Alaska." The number of new exhibitions each year fluctuates between 25 and 30. Each exhibition, whether from Smithsonian or external sources, requires approximately two years to develop and fabricate. In May 1988, the major SITES exhibition "Tropical Rainforests: A Disappearing Treasure" opened in the International Gallery of the S. Dillon Ripley Center.

SITES' chief priority now is two-fold: to develop more exhibitions that originate from Smithsonian collections and research; and to develop more exhibitions in the SITES program that are low-cost and that address the cultural interests and contributions of minority audiences.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Most of SITES' operating budget comes from participation fees collected from museums, universities, historical societies, and other recipients of traveling exhibitions. These funds, supplemented by an allotment, support exhibition development costs including salaries and benefits, exhibition production, publications, materials, outside specialists, and contractual services. The Institution supports SITES exhibitions on a selective basis with monies from the Special Exhibitions Fund (SEF). In 1988, for example, the SEF funded "King Herod's Dream: Caesarea on the Sea," which opened at the National Museum of Natural History and subsequently began a two-year nationwide tour.

Restricted Funds - Individuals, organizations, and corporations donate gifts and foundation grants for specific SITES projects. During FY 1988, SITES received several grants: from the Goodwill Games for "Treasures from Moscow and the Kremlin"; from a private donor for "Views of Rome: Watercolors and Drawings from the Collection of the Biblioteca Apostolica Vaticana"; from Phillips Petroleum for "Ceramics of the Weimar Republic"; from American Express for "Diamonds are Forever: Artists and Writers on Baseball"; from the MacArthur Foundation, the Gund Foundation, and the Wrigley Foundation for "Tropical Rainforests: A Disappearing Treasure"; from United Technologies Pratt & Whitney for "Into the Sunlit Splendor: The Aviation Art of William S. Phillips"; and from the 28th International Geological Congress for "Inside Active Volcanoes: Kilauea and Mount St. Helens."

During FY 1989 and FY 1990 SITES plans to conduct major funding appeals for the following exhibitions: "Coming of Age in America"; "The Hopi Experience"; "In Time of Plague"; "In Splendor and Seclusion: Women in Art and Life in the Court of Benin"; "Treasures from Moscow and the Kremlin"; "The Homeless Project"; and a special exhibition on world geography that will circulate to the nation's public schools.

Government Grants and Contracts - Various levels of government provide funds for support of specific exhibitions. For example, a contract with the U.S. Fish and Wildlife Service will enable SITES to circulate the National Museum of American History exhibition about duck stamps, entitled "The Legacy Endures."

PUBLIC SERVICE





ASSISTANT SECRETARY FOR PUBLIC SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	23	1,261	42	2,743	-	273	-	422	-	51
FY 1989 -Estimate	23	1,298	43	2,713	-	207	-	33	-	-
-Base	23	1,329								
FY 1990 Estimate	25	1,450	46	2,926	-	79	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	23	2	25
11 Personnel Compensation.....	931	87	1,018
12 Personnel Benefits.....	138	34	172
21 Travel.....	24	-	24
22 Transportation of Things.....	1	-	1
23 Rent, Communications & Utilities.....	27	-	27
24 Printing & Reproduction.....	57	-	57
25 Other Services.....	100	-	100
26 Supplies & Materials.....	31	-	31
31 Equipment.....	20	-	20
Total	<u>1,329</u>	<u>121</u>	<u>1,450</u>

Analysis of Increase

Necessary Pay.....	10
Program Funds.....	111

ABSTRACT - The Office of the Assistant Secretary for Public Service encourages and supports the development of programs to advance the Institution's objectives in education, publication, information, electronic media, folklife programs, and the development of wider audiences. It advises the Secretary on general policy issues and program planning for Public Service activities. This line-item includes the Office of the Committee for A Wider Audience, the Office of Telecommunications, the Visitor Information and Associates' Reception Center, and the Office of Public Affairs. The Institution requires \$10,000 for Necessary Pay for existing staff funded in this line-

item. Contained in this line-item is an amount of 2 workyears and \$111,000 associated with the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - I. The Office of the Assistant Secretary for Public Service: The Office of the Assistant Secretary for Public Service coordinates and supervises the Institution's general information/educational and public service programs and advises the Secretary on the development of policies and activities for these programs. The bureaus and offices reporting to the Assistant Secretary include the Office of Telecommunications; the Visitor Information and Associates' Reception Center; the Office of Public Affairs; the Smithsonian Institution Press; Smithsonian magazine and Air and Space magazine; the Office of Folklife Programs; the Office of Interdisciplinary Studies; the Office of Elementary and Secondary Education; the Office of the Committee for A Wider Audience; the National Science Resources Center; and the Office of Conference Services.

II. Office of Telecommunications: The Office produces radio, film, and television programs on various Smithsonian research and scholarly activities. These wide-ranging programs, distributed nationwide and overseas, inform the public, and support the research, exhibitions, and educational goals of the Institution.

The Office produces two major program series. "Here at the Smithsonian..." an award-winning series of video features, launched its seventh season with 180 subscribing stations, reaching more than 50 percent of the prime-time viewing audience in the United States. "Radio Smithsonian," a weekly half-hour series, is broadcast on 90 stations nationally, with a potential weekly audience of 4 million people. Programs in the series focus on exhibitions, research, and performance activities throughout the Institution.

In FY 1988, the Office completed several film and video projects and laid the foundation for expanded national programming. For the National Museum of American History (NMAH), the Office produced interactive video components for the major exhibition, "A Material World," demonstrating the selection and testing of materials for use in making familiar objects. Also for NMAH, the Office completed an exhibition videotape on the music of Irving Berlin, marking the composer's 100th birthday. The film, "Magnificent Voyagers," produced for the National Museum of Natural History, chronicles the U. S. Exploring Expedition of 1838-1842 (the Wilkes Expedition), which first gained worldwide attention for American science. "The Reel Jungle," a video program produced to accompany a Smithsonian Institution Traveling Exhibition Service exhibition, shows the myths and misconceptions of tropical rainforests that artists and filmmakers created over many years. For the Museum Support Center, the Office produced a new 15-minute videotape, giving a comprehensive overview of the workings of this innovative facility. The tape acquaints museum professionals around the world with the latest techniques for collections management and preservation. "Building an Ocean: The Creation of a Model Biosphere," a one-hour film, depicts the exhaustive efforts of the Smithsonian's Marine Systems Laboratory to create model ecosystems of the Chesapeake Bay estuary and the Florida Everglades. The model improves research on the life cycles of these systems and helps in developing self-sustaining colonies in space.

The Office is producing two major components for the new Smithsonian Information Center, set to open in the "Castle" in July, 1989. One element is a 20-minute orientation program, which will run continuously in two identical theaters. The other component is an interactive videodisc program for visitor use at several kiosks in the



Castle's Great Hall. This program will provide visitors with information to plan effectively their time at the Smithsonian. Using today's developing technologies, computer based information about each of the Institution's Washington, D.C. museums and the Zoo will be readily accessible, along with details about visitor services; new exhibitions; tours; demonstrations; special attractions for children; and the location of popular permanent exhibits.

Also in FY 1988, the Office devoted extensive efforts to launching the Smithsonian Video Collection, aimed at creating programs specifically for home video. With financing from Eastman Kodak Company, the programs explore Smithsonian collections and research. The first three programs will debut early in 1989, with a minimum of 12 shows completed by the following December.

Looking to the future, the Office plans several projects intended to bring wider audiences in touch with the Smithsonian. In its continuing series, the Office has worked to present the widest possible cultural diversity, as reflected in the programs of Smithsonian museums. In addition, staff members joined with the Office of Interdisciplinary Studies to plan and produce a national live teleconference on "Afro-Americans and the Evolution of a Living Constitution." With the Office of the Committee for a Wider Audience and Smithsonian magazine, the Office is planning a series of short radio features designed for Black commercial radio, to increase Black Americans' awareness of the Smithsonian and its programs. The Office also conducted an extensive study of Hispanic television outlets in the United States and is developing a series of Spanish-language TV features for this market. Working with other Smithsonian units, the Office will continue to explore new possibilities for wider-audience programming.

Development is moving forward on two large-scale projects. In FY 1988, the Office produced a pilot program for a new, expanded version of "Radio Smithsonian." This program, designed to provide a broader picture of the Institution, prominently features music and culture from around the world. Efforts are now under way to raise private funds for the series. With funding in place, the program could debut in early 1989. The Office is proceeding with a major project for children ages 9-12, combining an interactive videodisc and a television series on the years leading to and following 1492. Developed with Bank Street College of Education, the project explores the uses of new technology to support learning by discovery.

III. Visitor Information and Associates' Reception Center: The Visitor Information and Associates' Reception Center (VIARC) operates a daily, Institution-wide information/assistance program for the public, Associate members, staff, volunteers, and interns. VIARC coordinates and directs volunteers that are a primary source of support for the Institution's information programs and for project assistance behind the scenes.

VIARC's information services include staffing museum information desks; answering the Institution's public inquiry telephone lines; providing daily recorded information on Dial-A-Museum and Dial-A-Phenomenon; and responding to the Institution's public inquiry mail. VIARC also administers an exterior graphic information program and operates mobile information units out-of-doors during summer months; and regularly conducts behind-the-scenes tours of the Castle. Other services include recruiting and placing of volunteers; registering and orienting Smithsonian interns; and promoting pre-visit education and membership.

Construction and programming for the new Smithsonian Information Center in the Castle began FY 1988. The new Center will be operational in July 1989.

Museum information desk services expanded substantially. Major recruiting and training activity increased the volunteer information specialists corps to 534. This level will meet the 62 daily assignments required to staff 16 desks in 11 buildings. Outreach efforts increased minority participation in this program to 13.8 percent. The Telephone Information Service handled more than 430,000 calls in FY 1988. The popular Dial-A-Phenomenon recording on short-lived celestial events attracted 47,000 interested callers; special recorded information lines provided highlights of Smithsonian activities during Black History Month, Women's History Month, Asian-Pacific Week and Hispanic American Heritage Week. The Public Inquiry Mail Service received and handled some 55,000 pieces of general information and research mail. This included fulfillment of special requests for information related to minority constituencies.

The Commission of Fine Arts and the National Capital Planning Commission endorsed the design concept and construction materials for the Institution's Exterior Graphic Information System. As part of this project, work started with the National Park Service updating the general information directories on the Mall.

VIARC expanded public information services on the Mall in FY 1988. VIARC, with the National Park Service, redesigned pylons, originally used during summer months for year round use to orient and inform visitors. The public enthusiastically received the new format that included various perspective maps. The Mobile Information Program distributed orientation leaflets to some 120,000 visitors. A pilot program, SI Shutterbugs, also began operation out of doors. Volunteers assisted visitors by taking group photos using the visitors' camera at popular photo locations.

Some 1,500 behind the scenes volunteers were active during the year. Four hundred seventy nine provided short term assistance on special projects and the translation services group expanded to 60 participants providing capabilities in 38 languages. In all, VIARC translated 167 documents for Smithsonian departments and divisions.

IV. Office of Public Affairs: The Office of Public Affairs (OPA) acquaints the public with the programs and policies of the Institution.

The Smithsonian News Service provides some 2,500 daily and weekly newspapers with a free, monthly package of four feature-style articles on subjects in art, history, science, technology, and contemporary life. The News Service translates one of the four articles into Spanish. This translation accompanies the English versions to 100 Hispanic and bilingual newspapers in the United States (including Puerto Rico) and Canada and more than two dozen newspapers and publications in Latin America. In FY 1989, the News Service will emphasize more stories of particular interest to Hispanics and will expand its coverage further into Latin America.

In FY 1988, OPA substantially expanded its programs to reach a broader range of ethnic communities, including Afro-Americans and Hispanics. The program involves the coordinated preparation and distribution of news releases, brochures, public service announcements for radio and television, and direct media contact. The theme of this program is "The Smithsonian is for Everybody." OPA produced media-related programs for the Afro-American community, including two television public service announcements, radio, newspaper and magazine advertisements, a monthly calendar of



events for Afro-American newspapers, and bus and subway posters. Besides the Spanish edition of Smithsonian News Service, OPA prepares news releases and radio public service announcements, a calendar of events, a television public service announcement, and a brochure of Latino resources. The staff also produced two television public service announcements with a multi-heritage focus. The Office began an American Indian internship and increased direct-media contact with Asian American journalists and other ethnic groups.

OPA focuses on the communication of research activities to the media through direct contact with journalists, resulting in many major articles appearing in such national publications as The New York Times and The Washington Post. The circulation of Research Reports, a periodical devoted to reports on research in the arts, history, and science, reached a record in FY 1988 of nearly 55,000 readers, including the scholarly community, foundations, universities, and Smithsonian contributing members.

The Office prepares a wide variety of other publications, including a monthly staff newspaper, The Torch, visitor brochures in English and six foreign languages, a guide for disabled visitors, a brochure for journalists on the Smithsonian, a monthly calendar of events, and flyers for various bureaus such as the Smithsonian Tropical Research Institute and the Anacostia Museum.

OPA conducts and coordinates extensive media campaigns on behalf of the Institution to publicize many events. In FY 1988, these included the observance of the fifth anniversary of the Museum Support Center, the exhibition, "Tropical Rainforests: A Disappearing Treasure," ethnic week celebrations, "Crossroads of Continents," and "Roots, Rights, and Responsibilities."

OPA also advises Smithsonian bureaus and offices on public information policies and programs. OPA monitors their public information materials, the Institution's many relations with corporate and other sponsors, and the advertising and promotional plans and materials of corporate sponsors. OPA informs management of public and media attitudes and needs.

The Office continues to receive acclaim for the work of its staff from the National Association of Government Communicators and the Society for Technical Communications.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. The Office of the Assistant Secretary for Public Service: Annual allotments provide for the salary, benefits, and support costs of staff members assigned to the immediate Office of the Assistant Secretary for Public Service, and consultants for electronic media activities. Trust funds also support expenses associated with the Office of the Committee for A Wider Audience, including the Cultural Education Committee, which fosters the development of pan-Institutional outreach efforts designed to attract diverse cultural audiences. Special purpose funding provides for the Educational Outreach Fund, which fosters research on improved, expanded, and innovative methods of outreach activity. While estimated expenditures for FY 1989 and FY 1990 are reflected under this Office, the recipient organizations' accounts reflect the actual expenditures for FY 1988.

II. Office of Telecommunications: An annual operating allotment provides support for nine full-time staff members and costs associated with the production of educational and informational materials for television, film, and radio. Nominal

subscription fees received for some programs help defray production and distribution costs. The sale of films and videotape programs provides additional funds. In addition to individual programs, the Office produces two continuing series of programs that reach the American public regularly through radio and television. "Here at the Smithsonian..." is a series of television features, and "Radio Smithsonian" is a weekly, half-hour magazine program.

III. Visitor Information and Associates' Reception Center: An annual operating allotment supports the Center's work as the Institution's public service bureau responsible for the information and assistance activities described in the program statement.

IV. Office of Public Affairs: Allotments provide funds which support public outreach activities such as publication of the Institution's Welcome brochure, The Washington Post calendar, and other advertisements, wider audience advertising with the Afro-American, Hispanic, American Indian, and Asian American media, and public service announcements for radio and television.



SMITHSONIAN INSTITUTION PRESS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	26	1,234	37	15,305	-	54	-	22	-	8
FY 1989 -Estimate	29	1,239	40	15,055	-	1	-	-	-	-
-Base	29	1,274								
FY 1990 Estimate	29	1,286	40	19,490	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	Base FY 1989	Proposed Adjustments	Est. FY 1990
FTE Allocation.....	29	-	29
11 Personnel Compensation.....	1,142	8	1,150
12 Personnel Benefits.....	40	4	44
21 Travel.....	3	-	3
23 Rent, Communications & Utilities.....	2	-	2
24 Printing & Reproduction.....	40	-	40
25 Other Services.....	20	-	20
26 Supplies & Materials.....	12	-	12
31 Equipment.....	15	-	15
Total	<u>1,274</u>	<u>12</u>	<u>1,286</u>

Analysis of Increase

Necessary Pay..... 12

ABSTRACT - A member of the Association of American University Presses since 1966, the Smithsonian Institution Press (SIP) is responsible for editing, designing, producing, and distributing books, sound recordings, and other printed materials prepared by staff scientists, historians, and curators, as well as scholars from educational institutions around the world. Such materials also include research monographs, technical and scientific series, exhibition catalogues for Smithsonian museums, educational pamphlets, and informational leaflets. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Smithsonian Press. The Institution requires \$12,000 for Necessary Pay for existing staff funded in this line-item.

PROGRAM - The Federal publication activity of the Press is a fundamental extension of the Smithsonian's basic research activities. The scientific, technological, and historical monographs that the Press publishes propagate research of Smithsonian curators and staff experts to libraries, museums, research institutions, and interested members of the public throughout the United States and abroad. Because of the Smithsonian's extensive use of computers to compile research results, it is possible for the Press to assemble a wholly electronic typescript of each federally funded research monograph. The Press' Desktop Publishing equipment eliminates the cost of phototypesetting for all of these publications. The savings on typesetting expenses in the first year of use (FY 1987) covered the cost of equipment. Continued savings in FY 1988 enabled sponsoring Smithsonian bureaus to restrain the escalation of their publications budgets without having to curtail their publishing programs. In addition to publishing research findings, the Press edits and designs exhibition catalogs, educational pamphlets, and informational leaflets that serve the millions of visitors to the Smithsonian in Washington, D.C., and the extensive programs conducted nationwide and worldwide.

Additionally, the Press acts as the official agent of the Smithsonian Institution in procuring services from the U.S. Government Printing Office to create government forms, museum guides, and instructions, as well as in providing professional assistance to Smithsonian authors upon request. The Press also edits, designs, and produces Smithsonian Year, the Institution's annual report to the Regents and the Congress.

Federally funded books published during FY 1988 include A Monograph of the Lichen Genus Parmelia, by Mason E. Hale, Jr. (Smithsonian Contributions to Botany, #66); Hydrographic and Meteorological Studies of a Caribbean Fringing Reef at Punta Galeta, Panama, by John D. Cubit et. al. (Smithsonian Contributions to the Marine Sciences, #32); The Cretaceous Birds of New Jersey, by Storrs L. Olson and David C. Parris (Smithsonian Contributions to Paleobiology, #63); A Survey of Internal Oral Features of Leptodactyloid Larvae (Amphibia: Anura), by Richard J. Wassersug and W. Ronald Heyer (Smithsonian Contributions to Zoology, #457); and Late Holocene Fossil Vertebrates from Burma Quarry, Antigua, Lesser Antilles, by Gregory K. Pregill et. al. (Smithsonian Contributions to Zoology, #463).

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The sale of trust-funded books and recordings, royalties, and special publishing services produce these resources. They support the necessary services required to develop, market, warehouse, and distribute records and scholarly and general interest books published in connection with the Institution's research collections, exhibitions, and other programs.

University Press Division - During FY 1988, a priority publication of the Press in conjunction with the major international exhibition at the National Museum of Natural History was Crossroads of Continents: Cultures of Siberia and Alaska, edited by William W. Fitzhugh and Aron Crowell. Grass Systematics and Evolution, by Thomas R. Soderstrom et al. is a landmark work.

The Smithsonian Institution Press book program continues to publish books acclaimed by critics and reviewers, such as Galapagos: Discovery on Darwin's Island, by David W. Steadman and Steven Zousmer, and Fragonard in the Universe of Painting, by the leading scholar and art critic, Dore Ashton. The University Press division published an important book on Washington architectural and social history, Best

Addresses: A Century of Washington's Distinguished Apartment Houses, by James M. Goode. The New Directions in American Art series published these new titles: Millennial Desire and the Apocalyptic Vision of Washington Allston, by David Bjelajac, Frederic Edwin Church and the National Landscape, by Franklin Kelly, and Plain Painters: Making Sense of American Folk Art, by John Michael Vlach. Among the Press's new titles in the sciences were North American Owls: Biology and Natural History, by Paul A. Johnsgard, and The Bald Eagle: Haunts and Habits of a Wilderness Monarch, by Jon M. Gerrard and Gary R. Bortolotti. New books on aviation history included From the Ground Up: The Autobiography of an Aeronautical Engineer, by Fred E. Weick and James R. Hansen, Pacific Air Race, by Robert H. Scheppler, and Test Pilots: The Frontiersmen of Flight, by Richard P. Hallion.

The University Press division also inaugurated Exploring the American West, a series featuring reprints of rare and out-of-print reports, with two titles: Report of the Exploring Expedition to the Rocky Mountains in the Year 1842, by John C. Fremont, with a new introduction by Herman J. Viola and Ralph Ehrenburg, and Exploration and Survey of the Valley of the Great Salt Lake, by Howard Stansbury, with a new introduction by Don D. Fowler. A volume of special interest was The Rise of Black Churches in Eastern American Cities, 1740-1877; the main title is Climbing Jacob's Ladder, by Edward D. Smith. Among the art history books produced were Giacometti, by Valerie J. Fletcher, in collaboration with the Hirshhorn Museum, and Paulanship, by Harry Randin, in collaboration with the National Museum of American Art. For the National Museum of African Art, the Press distributes The Art of West African Kingdoms, edited by Edward Lifschitz.

Three new titles published in the Smithsonian Series in Ethnographic Inquiry are: Raramuri Souls: Knowledge and Social Process in Northern Mexico, by William L. Merrill, Raiders & Refugees: Trends in Chamba Political Development, by Richard Fardon, and The Hold Life Has: Coca and Cultural Identity in an Andean Community, by Catherine Allen. Three titles published during FY 1989 in the Smithsonian Series in Archaeological Inquiry include: Prehispanic Settlement Patterns in the Lower Santa Valley, Peru, by David J. Wilson, Status and Health in Prehistory: A Case Study of the Moundville Chiefdom, by Mary Lucas Powell, and Stylistic Boundaries among Mobile Hunter-Foragers, by C. Garth Sampson.

Smithsonian Collection of Recordings - This office publishes both popular recordings suitable for direct mail marketing to Smithsonian Associates and recordings of scholarly interest. During FY 1988, the Recordings program released Jump for Joy, a 1941 musical revue with music by Duke Ellington and program notes by Ellington scholar Patricia Willard. Another release was the six-disc Beethoven: Early Years through the "Erotica" performed by the Smithsonian String Quartet and the Smithsonian Chamber Orchestra, an original instruments recording. The Recordings program co-produced with the Indiana Historical Society The Classic Hoagy Carmichael, and with the German company Deutsche Harmonia Mundi Servais's Souvenirs and Caprices, Mozart's Concertante/Concertone, and Haydn's String Quartets, Opus 77 & 103. This year (as in 1985, 1986, and 1987) a Smithsonian Collection release, Singers and Soloists of the Swing Bands, programmed by Martin Williams with album notes written by Mark Tucker, received a nomination for a National Academy of Recording Arts and Sciences (NARAS) "Grammy" award in the categories of Best Historical Album and Best Album Notes. Jimmie Rodgers: America's Blue Yodeler, with notes written by Nolan Porterfield, also garnered a nomination for a Grammy for Best Album Notes, and received a Deems Taylor Award from American Society of Composers, Authors and Publishers (ASCAP) for the album notes.



Smithsonian Books - The "popular book" division of the Press, Smithsonian Books, publishes books for a general audience on subjects that relate to Smithsonian collections and research interests. These books, marketed primarily by direct mail to Smithsonian Associates and other lists, are also available to the general public through several trade publishers, including the sales force of the University Press division. Some of the titles currently available are In the Age of Mankind: A Smithsonian Book of Human Evolution; Exploring the West; The Smithsonian Book of Flight; The Smithsonian Book of North American Indians; Treasures of the Smithsonian; and The National Museum of Natural History. The goal of the program is to continue publishing well written, carefully researched, commercially successful, and critically well acclaimed books of general interest.

In fiscal year 1989, Smithsonian Books will begin publishing a 12-volume continuity series, Guides to Historic America; a book about birds entitled Lords of the Air; and a video production that accompanies the published book, The World's Whales.



INTERNATIONAL ACTIVITIES



INTERNATIONAL ACTIVITIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	7	637	10	630	-	129	-	-234	-	52
FY 1989 -Estimate	7	791	10	649	-	150	-	161	-	-
-Base	7	800								
FY 1990 Estimate	8	839	11	692	-	150	-	103	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	7	1	8
11 Personnel Compensation.....	359	28	387
12 Personnel Benefits.....	57	11	68
21 Travel.....	45	-	45
25 Other Services.....	329	-	329
26 Supplies & Materials.....	10	-	10
Total	<u>800</u>	<u>39</u>	<u>839</u>

Analysis of Increase

Necessary Pay.....	3
Program Funds.....	36

ABSTRACT - The International Center (formerly the Directorate of International Activities) monitors, coordinates, and enhances Smithsonian-wide endeavors in the international field. The Center provides Institution-wide support for the diverse range of Smithsonian international programs through the work of several independent activities: the Office of International Relations; the International Gallery; the Office of Quincentenary Planning; and the Office of Conference Services. Through the International Center, the Smithsonian also supports international research programs such as UNESCO's Man and the Biosphere Program and the Council of American Overseas Research Centers. The Institution requires \$3,000 for Necessary Pay for existing staff funded in this line-item. Contained in this line-item is an amount of 1 workyear and \$36,000 associated with the Institution's special employment initiative.

Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - International programs have played an important role within the Smithsonian from its earliest days when Joseph Henry established his global network of correspondents. The Institution's international activities occur at many levels, from informal scholar-to-scholar correspondence to highly structured Institutional undertakings.

In FY 1985, the Smithsonian established the Directorate of International Activities to facilitate the Institution's international research, especially in the fields of the natural sciences; to encourage collaborative work involving individuals and institutions in other countries; and to advance the objectives of the Smithsonian's charter by serving as an example of international cooperation. During the later part of FY 1987, the Institution conducted an internal review of the operations of the Directorate. In April 1988, as a result of this review, the Institution reorganized the various parts of the former Directorate of International Activities into a new International Center. A new International Activities Council, consisting of the Assistant Secretaries for Research, Museums, Public Service, and External Affairs, provides oversight and policy guidance for the International Center and for the wide range of international programs sponsored throughout the Institution.

Located in the S. Dillon Ripley Center in the Quadrangle, the International Center provides a venue for discourse and exhibition on a wide array of international topics. A major objective of the Center is to assist the Institution in putting scholarly inquiry at the service of the general public's desire to understand a changing international scene. In this way, the Center's programs focus not merely on contemporary concerns but place them in historical context. Bureau-generated programs, facilitated by the International Center, include exhibitions, conferences, colloquia, performances, film showings, lecture-discussion meetings, seminars, symposia, and intensive workshops.

As a result of the reorganization, the Smithsonian created several new offices within the Center. Each conducts Institution-wide support functions and each reports directly to the appropriate Assistant Secretary. Under the Assistant Secretary for External Affairs, a new Office of International Relations combines the former Office of Service and Protocol and the Foreign Currency Program staff. Under the Assistant Secretary for Museums, the International Gallery continues to sponsor the development and installation of exhibitions in the International Center. Under the Assistant Secretary for Research, the Office of Quincentenary Planning supports the development of a wide range of programs to commemorate the 500th anniversary of Christopher Columbus' voyages of exploration. Under the Assistant Secretary for Public Service, a new Office of Conference Services schedules and coordinates conferences and workshops initiated by scholars and staff throughout the Institution. (In July 1988, the Smithsonian transferred responsibility for the Smithsonian International Exchange Service, formerly known as the Office of Publications Exchange, to the Smithsonian Institution Libraries.)

Office of International Relations - The Office of International Relations provides the basic services necessary to coordinate the international aspects of Smithsonian research and museum programs. This includes:

- providing support, guidance, and information on foreign affairs and international relations as related to Smithsonian programs,



- obtaining passports and visas for Smithsonian travelers,
- facilitating communications and logistical arrangements for research and participation in meetings abroad,
- assisting in the drafting and implementing of agreements relating to international cooperative programs,
- providing assistance to foreign dignitaries and scholars who participate in Smithsonian programs in the United States, and
- compiling and updating the "Summary Profile of Smithsonian International Activities."

The Office also manages the Smithsonian Foreign Currency Program and other international research exchange grants programs.

International Gallery - "Generations," a multidisciplinary, multicultural investigation of the art and rituals associated with birth from ancient times to the present, celebrated the opening of the International Center in September 1987. Developed by the Smithsonian Institution Traveling Exhibition Service (SITES), it linked many diverse Smithsonian scholarly resources and collections in an exploration of the richness and diversity of cultures worldwide as they celebrate this milestone of human experience. The interpretation of non-Western materials was of particular importance in the exhibition. The exhibition concentrated on the ways certain cultures view this subject, how they incorporate it in their world view, how they deal with its reality as well as its symbolism, and how they express these ideas and concepts in material form.

A second major exhibition, "Tropical Rainforests: A Disappearing Treasure," also organized by SITES, opened in May 1988. This show allows the Smithsonian to present the results of scientific research on the destruction of the world's tropical forests, the Earth's most biologically diverse habitat. The exhibition addresses this timely and vital problem with a cross-disciplinary approach and draws extensively upon research conducted at the Smithsonian Tropical Research Institute, the National Museum of Natural History, and the National Zoo as well as other international research centers. The goals of this exhibition are to alert the public to the problems confronting tropical ecosystems, especially forests, and to illustrate current programs in research and conservation that address tropical deforestation.

To derive the maximum potential for educating the public, the Institution is sponsoring a parallel series of outreach programs. These programs are an integral part of the tropical forest exhibition. They provide more comprehensive information on a variety of topics that are too complex for, or otherwise not easily translatable into, a museum exhibition. The programs assume three different formats -- a film series, a public lecture series, and scientific symposia and seminars -- to appeal to a broad audience. This programming, developed for use at the Smithsonian, will also serve as a model for programming for the traveling exhibition version scheduled for presentation in 12 other museums. The first in this series, a Festival of Rainforest Folklife, Passport to the Tropics, drew 25,000 visitors in November 1988.

In FY 1989, the International Gallery will sponsor an exhibition organized by the St. Louis Art Museum entitled "Caribbean Festival Arts." The exhibition focuses on the arts of three pan-Caribbean festivals: a widespread masquerade commonly known as Jonkonnu, an Islamic festival commemorating the death of Husein, and the pre-Lenten Carnival culminating in Mardi Gras. It will explore the European, Middle Eastern, and African sources for festival themes, costumes, and accoutrements; the development of these arts in the Caribbean; their present reality in the lives of Caribbean

populations; and the diffusion of these festivals to sites such as New York, Toronto, Miami, New Orleans, and London. Ancillary programming for the public will be extensive and will include some activities, such as a Caribbean marketplace, in the open Concourse area of the Quadrangle. The Institution will emphasize the dissemination of information on the exhibition to the West Indian communities that have not routinely visited the Smithsonian.

Office of Quincentenary Planning - During the next few years, the attention of the Smithsonian and, indeed, the Nation will become increasingly focused on the commemoration of the 500th anniversary of Christopher Columbus' 1492 voyage to the Americas. For the Smithsonian Institution, this occasion offers an opportunity to take a closer look at the past, present, and future implications of this anniversary. The Institution has promoted the development of a centrally coordinated, pan-Institutional Quincentenary program that will reflect the diversity of Smithsonian research interests and provide the general public with the broadest understanding of the significance of the Columbian voyage.

The Office of Quincentenary Planning coordinates and assists in the development of pan-Institutional programs related to the commemoration of the 500th anniversary of the Columbian voyages to the New World. Because of the Quincentenary's potential hemispheric, if not global, impact, part of the Office's mission is to ensure that the Institution's Quincentenary activities explore and diffuse the breadth and complexity of the issues related to the encounter to the largest possible audience.

In the spring of 1988, the Institution sponsored a scholarly symposium entitled "Explorations, Encounters, and Identities: Musical Repercussions of 1492." Teachers, professors, students, and the interested public attended the all-day symposium. The Office plans many public programs for subsequent years. In May 1989, the Office will co-sponsor with the University of Maryland a public symposium entitled "Violence and Resistance: The Legacy of Conquest." Planning for future Quincentenary symposia includes a tele-conference that will focus on ecological exploitation and its effects on indigenous populations, using the Andean countries as a case model. The symposium will use satellites to link communities in the United States to others in South America.

Office of Conference Services - The Smithsonian sponsors approximately 50 professional meetings each year, ranging from small workshops to major international conferences. Traditionally, the responsibility for handling all of the logistics of each meeting from the early conceptual stages through the actual meeting has rested exclusively with the sponsoring research or curatorial department. With a large number of such meetings each year, however, a central office can more effectively and efficiently provide this logistical support. The new Office of Conference Services will work with the sponsoring bureau, offering, on a case by case basis, the necessary level of central support required for the specific type of meeting. In FY 1989, the office is supporting a number of major conferences including the Forum on Global Change, Violence and Resistance in the Americas, and the World Food Prize Symposium.

Support for International Research - In addition to the new offices established within the International Center, the Smithsonian will continue to support several programs in international research through the International Center. These programs include the Institution's Man and the Biosphere Program, and affiliated independent organizations such as the Council of American Overseas Research Centers, and the International Union for the Conservation of Nature and Natural Resources.



Man and the Biosphere: In 1986 the Center, in cooperation with the National Museum of Natural History and the Man and the Biosphere-UNESCO Program, began a new international program on biological diversity inventory procedures. The sponsoring organizations designed the program to develop a high resolution data base management system. That system will provide, in time, nearly complete biological inventories of selected species-rich sites such as Biosphere Reserves, National Parks and Reserves, and other protected areas of developing countries. (A Biosphere Reserve is an area selected for protection and study because it is a representative example of one of the world's major ecosystems.) With such a methodology, comparative work can proceed more efficiently and accelerate the pace of understanding the scope and scale of biological diversity in the world.

One of the most important aspects of this new program is the training of biologists and other related professionals from developing countries. This training will permit them to conduct their own biological inventories and assist in cataloguing bio-resources within their respective countries. With support from the United States Agency for International Development, the World Heritage Program of UNESCO, and the Man and the Biosphere-UNESCO Program, the Institution conducted field training workshops in 1988 in Bolivia, Peru, and Puerto Rico. These workshops trained participants in the field in the methodology of conducting biological inventories and at the National Museum of Natural History in collections management and computer techniques. The Institution is presently negotiating with other national and international organizations to expand this program to other countries abroad. Within the Institution, the program complements the Biological Diversity in Latin America Program (BIOLAT), a research initiative of the National Museum of Natural History.

Some of the most important goals for the Program in FY 1990 will be 1) to develop a strong partnership with the UNESCO-Man and the Biosphere Program, 2) to expand the scope of the program internationally, 3) to conduct integrated field training workshops in conservation, management of protected areas, ecology of wildlife management, systematics, and others, and 4) to coordinate national and international events related to cultural and biological diversity, such as forums, symposia, and tele-conferences.

Council of American Overseas Research Centers (CAORC): American overseas research centers are the recognized extensions of the advanced foreign research programs of major American universities and museums. They constitute the channel through which research information about countries important to U.S. interests invigorates American academic institutions. Centers operating in Italy, Greece, Turkey, Cyprus, Tunisia, Morocco, Iran, Egypt, Jordan, Israel, Yemen, India, Pakistan, and Hong Kong provide fellowship funds, access to local research resources, logistical support, liaison with host-country officials, and library and housing facilities to thousands of American academics. Their facilities offer contacts for U.S. scholars and their host-country colleagues, and their publication and seminar programs disseminate research results worldwide. The private structure of the centers and the unbiased research they promote make them respected foci of American academia in the countries in which they operate. As the result, they contribute considerably to a positive U.S. image abroad.

CAORC facilitates and coordinates the work of its 11 member institutions. Existing centers federated in 1981 to create a forum to identify and address common concerns. CAORC links its member research centers, U.S. and foreign institutions, and scholars into a global information network. CAORC fosters collaboration among research centers to strengthen academic programs and administrative procedures and

sponsors international research projects. CAORC undertakes the establishment of new centers in areas where research exchange opportunities are lacking.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Allotments provide these funds which support planning and development of research and exhibition programs for the International Center and for administration of the Quincentenary Commemoration. A special purpose fund provides stipend support for international scholarly exchanges aimed at strengthening the Smithsonian's institutional linkages.

Restricted Funds - Restricted funds consist of gifts, grants, and other donations from individuals, foundations, organizations, and corporations for specific purposes, such as mounting exhibitions and staging performances, film showings, and other public presentations in the International Center.



SPECIAL PROGRAMS



AMERICAN STUDIES AND FOLKLIFE PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	10	790	15	882	-	382	-	68	-	595
FY 1989 -Estimate	9	908	15	795	-	180	-	606	-	1,833
-Base	9	923								
FY 1990 Estimate	10	937	15	795	-	117	-	2,332	-	2,908

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	9	1	10
11 Personnel Compensation.....	435	10	445
12 Personnel Benefits.....	61	4	65
21 Travel.....	27	-	27
22 Transportation of Things.....	5	-	5
23 Rent, Communications & Utilities.....	20	-	20
24 Printing & Reproduction.....	65	-	65
25 Other Services.....	246	-	246
26 Supplies & Materials.....	44	-	44
31 Equipment.....	20	-	20
Total	<u>923</u>	<u>14</u>	<u>937</u>

Analysis of Increase

Necessary Pay..... 14

ABSTRACT - The Office of American Studies conducts a graduate program in the field of American material culture. Through teaching, lecturing, and publishing, the director, cooperating scholars, and graduate students disseminate the knowledge acquired during course study and research performed at the Smithsonian. The Office of Folklife Programs (OFP) researches, conserves, and presents living folklife traditions found in the United States and abroad. Major activities include the annual Festival of American Folklife, Smithsonian Folkways Records, the Smithsonian Folklife Studies Series of publications and documentary films, research projects, museum exhibits,

symposia, educational projects, and the Folklife and Folkways Archives. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the American Studies and Folklife Programs. The Institution requires \$5,000 for Necessary Pay for existing staff funded in this line-item, along with .50 workyears and \$9,000 to annualize the partial year funding for two new positions approved in the FY 1989 budget.

PROGRAM - I. The Office of American Studies: The Office of American Studies sponsors a graduate program in American material culture in cooperation with various universities located in the Washington, D. C. area and in other cities. The director of the program and cooperating scholars teach three or four seminars a year which are offered to graduate students for academic credit.

The graduate program in American material culture provides a means for scholars and students to pursue American studies utilizing the unique resources of personnel, objects, manuscripts, and books available in various bureaus of the Smithsonian. It provides opportunities for graduate students in American studies or American history departments of affiliated universities to undertake a program of formal course work at the Smithsonian.

II. Office of Folklife Programs: The Office of Folklife Program's curatorial staff researches American and worldwide folklife traditions and publishes and presents research to scholarly and public audiences. OFP conserves folklife traditions through documentary and archival collections of music, narrative, performance, and material culture. The annual Festival of American Folklife, held on the National Mall, provides national recognition to thousands of traditional musicians, crafts people, and other artists. The Festival encourages participants to maintain and transmit their cultures to future generations. Other OFP activities allow the public to learn about diverse American cultures and cultures of other nations. OFP cooperates with other Federal and state agencies to advance the Nation's interest in folklife.

Research and Publications - OFP currently engages in research on folklife traditions in Massachusetts, Hawaii, Washington, D.C., and the Caribbean; the traditions of the elderly; immigrants from Jamaica and southeast Asia; Navajo music; Ojibwa wild rice culture; American Indian cultural resource issues; Creole and Cajun culture; Appalachian flat foot dancing; African epics; Indian puppetry; Soviet music; and Brazilian music and culture. OFP disseminates research through scholarly journals and presentations, Festival program book articles, Smithsonian Folkways Records, and the Smithsonian Folklife Studies Series. Series releases this year include the documentary film, "Kathputli: The Art of Indian Puppeteers" and the republication of Working Americans. Other projects include a book on Ojibwa culture; a book on the folklife of the elderly; and a radio series on American and world music traditions. Initial Smithsonian Folkways publications, including albums with scholarly notes, are Folkways: The Original Vision (Woody Guthrie and Leadbelly) and Musics of the Soviet Union.

Exhibitions and Public Programs - The Festival of American Folklife, held annually on the National Mall since 1967, has stimulated broad interest in traditional culture and provides a model for the research-based presentation of culture. In 1988 the Festival featured programs on "Ingenuity and Tradition in Massachusetts"; "Migration to Washington, D.C."; "Music from the Peoples of the Soviet Union"; "The Centennial of the American Folklore Society"; and a main stage featuring a range of American musics. The Festival drew an estimated 1.5 million visitors and generated massive media attention and critical acclaim. The Festival had effects beyond the Mall:



Massachusetts restaged the program in that state; area schools and community centers are using the D. C. migration materials; and the American Folklore Society remounted the folklore centennial program in Cambridge, Massachusetts. As part of a Smithsonian cultural exchange with the Soviet Ministry of Culture, American musical groups--Indian, Cajun, Puerto Rican, Anglo-American, and Afro-American--traveled to Moscow to participate in the International Folklore Festival in August, 1988.

In FY 1989, OFP plans Festival programs with Hawaii, French and Franco-American traditions, the Caribbean, and demonstrations on how American Indians use natural resources to maintain their cultures. OFP plans future programs with the states of New Mexico and Missouri and with the Virgin Islands; the folklife traditions of the family farm; and the unofficial culture of government. OFP is discussing country programs with China, the Soviet Union, the Arab Gulf States, Thailand, Indonesia, Australia, Pakistan, Madagascar, Senegal, Spain, and many Latin American nations.

In FY 1988, OFP sponsored several public performance programs, a lecture series on the cultural consequences of apartheid in South Africa (which OFP is now editing for publication and radio broadcast), and the first in a series of Quincentenary symposia dealing with new world cropping systems and related cultural expressions. OFP through Smithsonian Institution Traveling Exhibition Service currently is touring "The Grand Generation," an exhibition on the folklife of the elderly. Future plans include museum and traveling exhibitions on southeast Asian immigrants and American Indian cultures.

Archives and Education - The Folklife and Folkways archives contain audio tapes, records, videotapes, photographic images and film, paper files, and books documenting folklife traditions from all parts of the United States and some 46 countries. Highlights of the collection include materials on occupational folklife, family folklore, immigration stories, American musical traditions, and the performance traditions of Afro-Americans, American Indians, and other ethnic groups. With 1989 funding, the Office of Folklife Programs will be able to better preserve these unique historical and cultural materials and make them available for folklore scholarships.

The archives is a valuable resource for ongoing research. In FY 1988, visiting fellows used the archives to research Hispanic culture, Black American performance traditions, American Indian programs, southeast Asian immigrant folktales, and other topics. Major archival activities include accessioning of Folkways materials and conserving and systematizing Folklife materials.

Educational projects include folklife workshops and courses for area social studies teachers, using the Festival as a resource; the development of OFP materials for school room use around the country; the initiation of a summer folklore institute for community based "amateur" researchers, particularly from minority groups; and D. C. community inreach. The "inreach" programs of OFP are different from the typical "outreach" programs. OFP organizes community inreach projects to encourage cultural groups to conserve their own heritage; in a regular outreach project, OFP would introduce a cultural group to the traditions of another people.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds: I. Office of American Studies: OAS offers graduate courses and receives tuition reimbursement from cooperating universities, principally George Washington University and the University of Maryland.

The tuition reimbursement refunds the Smithsonian Institution for the use of its facilities by the students participating in Smithsonian classes and, in addition, provides honoraria and reimbursement for the services of outside experts participating in the program.

II. Office of Folklife Programs: Allotments and concessions at the Festival of American Folklife provide these funds, which support salaries and related program costs. The Institution's Educational Outreach Program, Special Exhibition Program, and Research Opportunity Funds provide funds for such projects as the lecture series on South African cultures, D.C. community inreach, the planning of an exhibit on the experience of southeast Asian immigrants, and the conduct of scholarly research.

Restricted Funds - Individual gifts and grants from private foundations and corporations support specific programs or components of programs. Funds in FY 1988 provided partial support for the Metropolitan Washington, D.C. program, the American music program at the Festival of American Folklife, the Moscow tour of American music groups, and the publication of Folkways Records.

Government Grants and Contracts - Various state and local governments provide funds to support performances and programs at the annual Festival. In FY 1988, OFP received state government support for the Massachusetts program. A grant from the State of Hawaii will support research and presentation of Hawaii's folklife at the 1989 Festival.

INTERNATIONAL ENVIRONMENTAL SCIENCE PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	10	785	-	-	-	-	-	-	-	-
FY 1989 -Estimate	13	770	-	-	-	-	-	-	-	-
-Base	13	778								
FY 1990 Estimate	13	781	-	-	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	13	-	13
11 Personnel Compensation.....	242	2	244
12 Personnel Benefits.....	54	1	55
21 Travel.....	91	-	91
22 Transportation of Things.....	3	-	3
23 Rent, Communications & Utilities.....	1	-	1
24 Printing & Reproduction.....	16	-	16
25 Other Services.....	291	-	291
26 Supplies & Materials.....	58	-	58
31 Equipment.....	22	-	22
Total	<u>778</u>	<u>3</u>	<u>781</u>

Analysis of Increase

Necessary Pay..... 3

ABSTRACT - The International Environmental Science Program (IESP) is a multi-bureau interdisciplinary effort to coordinate the Institution's long-term monitoring and study of unique and significant ecosystems. The goal of the Program is to evaluate and eventually predict the impact of human activities and natural change on selected ecosystems. Research sponsored by the IESP occurs at two permanent Smithsonian sites -- the Tropical Research Institute (STRI) in Panama and the Environmental Research Center in Maryland -- and several non-permanent sites throughout the world. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the International Environmental Science Program. The



Institution requires \$3,000 for Necessary Pay for existing staff funded in this line-item.

PROGRAM - The International Environmental Science Program sponsors research to meet the urgent need for long-term studies of the world's ecosystems, especially in tropical and subtropical regions where the rapid rate of tropical deforestation, loss of suitable soil, and resulting threat to wildlife are of critical importance. The Program provides funds for teams of scientists to monitor natural variations in specific environments unspoiled by humans. Recent United States Government and international commissions have reemphasized the need to expand long-term monitoring activities to gain further insight into biological diversity and to help in the survival of rapidly disappearing ecosystems.

Scientists maintain permanent IESP research sites at the Rhode River Estuary at Edgewater, Maryland; the tropical lowland forest of Barro Colorado Island (BCI); and the Galeta Reef on the Atlantic side of the Isthmus of Panama. For over 15 years, scientists have developed a data base on the biological, physical, and chemical components of these ecosystems. Analyses of this data have produced speculations and verifiable hypotheses about long-term patterns in climate and about disturbances resulting from human activity.

Research sponsored by the IESP also occurs at non-permanent sites on Aldabra in the Seychelles and in Nepal, Venezuela, Brazil, Mexico, and the Amazonian regions of Peru and Bolivia. Smithsonian scientists, with support from the host governments, are continuing their efforts at these sites to gather descriptive data that will aid in the development of verifiable hypotheses about genetic diversity, animal management, and natural area management.

The following highlights IESP's research accomplishments for FY 1988 at the Program's permanent and non-permanent sites.

Edgewater, Maryland - The blue crab is important both as a commercial foodstuff and as a predator in the Chesapeake Bay. Direct observations of crab movements and feeding activity are impossible because visibility in these waters is poor. A cooperative project between the Smithsonian Environmental Research Center and North Carolina State University has developed and tested ultrasonic crab biotelemetry hardware. Researchers are able to track individual blue crabs to identify their location and determine their feeding activity. Each crab's telemetric unit transmits data at different defined frequencies for reception by underwater hydrophones. Electrodes, inserted in the crab's mandibular muscles, detect jaw activity during feeding. This represents the first study of blue crab movement patterns and feeding rates in their natural habitats.

After an 11 year study of the population dynamics of two woodland herbs common in Maryland forests, the summary of results is available. Among the findings, a major factor in the success of *Tipularia discolor*, a deciduous orchid, is the impact of the grazing by deer and small mammals. Few plants escape leaf removal by deer for more than two or three years. The deer usually remove all an individual plant's leaves; the removal affects the plant's future growth, delays flowering, and reduces the likelihood of reproduction. Small mammals increase plant mortality by eating underground plant growth. Grazing deer and small mammals killed two-thirds of the total plant population during the 11 year study. In contrast, *Cynoglossum virginianum*, commonly known as wild comfrey, has suffered very little mortality due to grazing animals. In areas where storms have downed individual canopy trees, the



increased light intensity through the canopy gap has increased this species' sexual reproduction and resultingly its abundance threefold.

Researchers now monitor air quality continuously to determine ozone, sulfur dioxide, and nitrogen oxides levels and to provide information on potential environmental impacts of these pollutants. Ozone concentration measured in the 1988 growing season was high. Because ozone is one air pollutant that damages forest communities, this data is important in studying the effects of ozone on these communities. Researchers are developing improved methods of measuring dry and wet deposits from the atmosphere in forests. Researchers are testing several independent methods for measuring chemical components of the atmosphere and its transference to forests on the earth's surface. Data from companion studies will help determine how atmospheric conditions effect ecological processes in forests. Researchers will use these data to study the effects of nutrients and toxic materials on terrestrial and aquatic ecosystems.

Aldabra - Surveys of the flora and fauna of the atoll continue. Funded by UNESCO, researchers completed the second phase of the feral goat control program on the atoll. Other completed milestones of this project include:

- sorting all the quantitative seagrass, reefcrest rubble, and sinkhole samples;
- collating various data for analysis from the marine surveys;
- assembling field notes and collecting data from all collectors of the first five years of the current project to provide a central data base for specialists working on the many invertebrate and the few vertebrate groups represented; and
- distributing specimens of polychaete worms, echinoderms, sipunculans, marine and terrestrial mollusks, and terrestrial isopods to specialists both in the U.S. and abroad.

Staff at Mount Desert Research Laboratory, Maine processed the shrimp collected from several sinkholes. The physiological data obtained deals with temperature tolerance and water and ion balance. Analysis of this data will explain how some organisms adapt so well to the fluctuating temperatures and salinities of the Aldabran sinkholes. Analysis of the algal mats lining the sinkholes' walls has yielded several new types of seaweeds for the Indian Ocean. This data revealed several previously unknown organisms inhabiting the algal mats, among these a new genus of abundant snail. A study on a representative sinkhole will report on the fecundity and abundance of shrimp and fish collected during previous expeditions.

Polychaete, crustacean, and paleontological studies continue on material collected over the last five years. The list of new isopod crustacean species now contains over 20. A report will incorporate these findings into a broad Indian Ocean review dealing with material from the granitic Seychelles, Mozambique, Chagos, and Diego Garcia. A major portion of a Ph.D. dissertation presented in 1988 at The George Washington University deals with the fabriciine polychaete worms taken during the sinkhole study on Aldabra. Several of these worms are new species, and their existence has caused scientists to revise the hypothesis about the evolution and distribution of this abundant and ecologically important worldwide group. During 1988, the Smithsonian published the proceedings of the International Aldabra Workshop held in 1987 at the Institution.

Nepal - For the third consecutive year, scientists completed a population count of endangered Greater One-horned Rhinoceros in Royal Chitwan National Park. Researchers photographed, identified, and entered into a photo register nearly all the rhinos. Based on these data, scientists are analyzing the population viability to determine the long-term survival of rhinos in Chitwan, Bardia, and the Dudhwa Wildlife Reserves. The Smithsonian/Nepal Terai Ecology Project supported relocation efforts at the latter two sites.

For the first time, researchers obtained data on the population genetics of free-ranging Greater One-horned Rhinoceros. The surprising results show that Chitwan rhinos have maintained high levels of genetic variability. Efforts are under way to obtain samples from zoo animals, which represent rhinos from the other large populations in Asia, the Kaziranga Reserve in Assam, India. The rapid turnover among breeding males maintains this high level of genetic variability in Chitwan rhinos.

The results of these studies will enable park managers to better conserve and manage these highly endangered species on the Asian subcontinent. The success of the Smithsonian program in Nepal has encouraged the interest of the Agency for International Development and the World Wildlife Fund in joining with the Institution to expand the present research camp in FY 1990 into a regional wildlife research and training center.

Venezuela - During FY 1988, researchers conducted eight projects at the field site at Hato Masagural, Venezuela. Two of these projects were studies on the red howler monkey. Researchers increased the scope of this long-term demographic study of this species by adding 20 social groups that inhabit the gallery forest within the field site. The previous study population of 35 groups occupied the savannah woodland habitat. Researchers conduct monthly censuses on all groups comprising the study population in order to develop a data base for inter-habitat comparisons. The investigation of the red howler diet initially involved detailed field observations of feeding in several social groups. Subsequently, researchers captured all members of one social group and housed them in specially constructed cages.

Scientists conduct preliminary experiments on the captive animals to determine the total food intake, nutrient content, and the digestibility of certain plants the red howlers eat. Future experiments will include using other food plants and more controlled conditions. The research project on the Cebus, the other primate species found within the study area, included two separate investigations. One focused on the relative importance of demography, kinship, and dominance on social interactions within Cebus groups. The other dealt with behavioral responses of Cebus to the presence of predators in the environment.

Research continues on the snail kite, an endangered species in the United States. This study intends to determine why this highly specialized feeder has diversified its diet to include a substantial proportion of crab in the llanos of Venezuela. The research will include diet choice experiments, a study of seasonal changes in food abundance, and nutrient analysis of snail and crab meat. Nutritional analysis was also important in the investigations of the dietary ecology of the hoatzin, a bird which feeds upon several kinds of leaves red howlers also eat. This investigation provides an opportunity to compare how sympatric species, from unrelated taxa and with different life styles and gut morphology, contend with the digestive and nutritional problems of folivory. An ornithological project continues to monitor the long-term demographic and compositional changes in two Venezuelan bird communities.



Other studies included investigations on caimans and the local moths. The long-term demographic study of caimans involved the continued monitoring of nearly 400 individually identifiable animals. During this process, the data collected about the caimans included ranging patterns, reproductive biology, and growth rates. The research has important implications for the conservation and management of caimans, which is the most exploited genus of the world's crocodylians. The investigation of moths involved a short-term project including a taxonomy, distribution, and life history of certain species. National Museum of Natural History Entomologists are examining and identifying these moth specimens collected in Venezuela.

**Brazil (Golden Lion Tamarin Project)** - IESP funding of the Golden Lion Tamarin Conservation Program continued to break new ground as an applied conservation program, melding basic research with a reintroduction project. During FY 1988, scientists closely monitored the released golden lion tamarins at and near the Poco das Antas Reserve in Brazil. Seven groups, totaling 30 animals, remain from the original animals released between FY 1984 and FY 1987. Additionally, scientists released 15 animals in FY 1988. Released tamarins have borne a total of six litters from which eight young survive. Major causes of death of released animals include predators and disease. An analysis of survival has revealed that younger animals survive better, especially if reintroduced within their family group. Scientists are releasing untrained family groups on non-Reserve property to involve local landowners directly in conservation and make preparation and training techniques less costly.

Other studies of wild golden lion tamarins continue. Although the vast majority of groups appear to contain a monogamous breeding pair, there are instances of polygyny and polyandry. Monitoring of the wild population continues so that scientists can characterize the age and sex distribution of the species and the dispersal patterns of young over the long-term. Scientists have been able to follow the movements of seven young, five females and two males. They have found that groups expel females more often than males and that tamarins may travel as far as four kilometers seeking mates. Smithsonian researchers are testing theoretical predictions about the genealogical relationships of adults that assist in rearing young to determine if "helpers" aid because of kin selection or reciprocal altruism. Researchers are continuing the genetic analysis of the tamarin population in the wild and in captivity and have initiated a survey of small mammal densities and distribution, a study of tamarin energetics, and an investigation of feeding ecology, diet, and nutrition in golden lion tamarins. Research continues to determine the impact on local attitudes of conservation issues. Researchers conducted workshops in FY 1987 and FY 1988 for park and reserve education personnel and will complete a manual for conservation education programs in March 1989. Additionally, by controlling hunters, squatters, and fires, scientists continue to monitor and protect this very endangered habitat with its unique fauna. Scientists conducted considerable research during FY 1988 which identified additional habitats on private land that is suitable for the release of tamarins.

**Brazil (Neotropical Lowland Research Project)** - In FY 1988, scientists conducted field and laboratory work in archeology, botany, entomology, ichthyology and herpetology on the Amazonian and Atlantic Forest biota. Results of these investigations added important new information on the composition and distribution of the Neotropical biota. These data are important for completion of several major publications and conservation planning. Specific highlights during the past year include the editing of the results of an "International Workshop on Neotropical Distribution Patterns," co-sponsored by the Smithsonian Institution and the Academia Brasileira de Ciencias with additional support provided by the National Science

Foundation and the Conselho Nacional de Desenvolvimento Científico e Tecnológico. The publication, published in December 1988, includes six papers by Smithsonian participants.

Panama - IESP-funded research on Barro Colorado Island (BCI) continues to provide important new information of major significance to the development of techniques for agroforestry and reforestation. Continuing studies include: how water and light affect forest structure and productivity; and how seasonal rhythms in fruit and leaf production affect fluctuations in animal populations dependent upon these items for food. The BCI forest irrigation project is entering its fourth year. Over the past three dry seasons, experimental elimination of soil drought stress has provided fundamental insights into forest dynamics. Although several plant species altered growth and reproduction patterns in response to irrigation, many did not. Factors other than wetness of the soil, such as relative humidity and day length, influence climate-induced biology cycles. Researchers used new portable instruments to measure plants' photosynthetic carbon gain and associated water loss in the field during the past dry season. These pioneering studies showed that forest plants can adjust the physiology of individual leaves to tolerate drought. Plants' ability to adapt to changing conditions helps to explain their lack of dramatic response to dry season irrigation.

Long-term monitoring of reef and mangrove communities is continuing at Galeta, providing invaluable background for analyses of the impact of the April 1986 oil spill on these areas. The IESP studies are supplemented by a \$3.0 million, five-year contract to STRI from the Mineral Management Services of the Department of the Interior. STRI received this contract because of IESP's unequalled biological record at Galeta and because previous monitoring activities will continue indefinitely.

Work will continue at all Program sites for the next five years. Selected new initiatives scheduled for the future will improve the Institution's capabilities to monitor additional subtropical and tropical sites. The diminution of natural habitat in these areas makes it essential that researchers gather scientific data now on areas that may disappear and that researchers help develop plans to conserve other areas before those are lost.

Mexico - In FY 1988, the Smithsonian International Environmental Sciences Program began to fund a long-term ecological study in a forest in the State of Quintana Roo, Mexico. Previously, a private sector grant funded the work which focused on three related issues: 1. habitat requirements of migratory birds that breed in North America and winter in the Yucatan Peninsula of Mexico; 2. factors that control production of tropical forests; and 3. development of agricultural methods that utilize litter from the forest to increase food production and decrease the need to cut tropical forests. FY 1988 results showed that migratory bird species were common in mature tropical forests and some disturbed habitats. Agricultural fields and pastures had the lowest diversity of migratory birds. The amount and timing of precipitation controls forest productivity. Intensive agricultural methods have the potential to increase food production for humans and animals.

In late FY 1988, Hurricane Gilbert did extensive damage throughout the northern Yucatan Peninsula, including the present research sites. That event provides a unique opportunity to study how tropical plant and animal communities recover from catastrophic events. In FY 1989, the project will emphasize: 1. colonization of the damaged forest by new plant species; 2. growth rates of plants which survived the



hurricane; 3. the rate at which the large amount of dead wood will become incorporated into the soil; and 4. patterns of recovery of the bird community.

ACADEMIC AND EDUCATIONAL PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	18	1,039	11	698	-	1,984	-	126	-	-
FY 1989 -Estimate	24	1,170	11	740	-	1,938	-	37	-	-
-Base	24	1,197								
FY 1990 Estimate	25	1,266	13	913	-	2,047	-	27	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	24	1	25
11 Personnel Compensation.....	783	56	839
12 Personnel Benefits.....	129	13	142
21 Travel.....	35	-	35
22 Transportation of Things.....	2	-	2
23 Rent, Communications & Utilities.....	9	-	9
24 Printing & Reproduction.....	56	-	56
25 Other Services.....	153	-	153
26 Supplies & Materials.....	22	-	22
31 Equipment.....	8	-	8
Total	<u>1,197</u>	<u>69</u>	<u>1,266</u>

Analysis of Increase

Necessary Pay.....	16
Program Funds.....	53

ABSTRACT - Research and education are among the principal objectives of the Smithsonian. To attain these goals, the Institution promotes scholarly and academic ties with other learned institutions. The Smithsonian offers resources to the general public as well as the academic community. Scholarly and academic ties develop and flourish through competitive awards for research projects, programs in higher education, symposia and seminars, and learning opportunities at the elementary and secondary levels. This line item includes the Office of Fellowships and Grants (OFG), the Office of Interdisciplinary Studies (OIS), the Office of Elementary and Secondary

Education (OESE), and the National Science Resources Center (NSRC). The Institution requires \$9,000 for Necessary Pay for existing staff funded in this line-item, along with .25 workyears and \$7,000 to annualize the partial year funding of 1 new position approved in the FY 1989 budget.

Contained in this line item is an increase of 1 workyear and \$53,000 associated with the Institution's strengthened special employment initiative plan. Justification for these resources appears in the central Special Employment Initiative section of this budget.

PROGRAM - I. The Office of Fellowships and Grants - With base funding of 9 workyears and \$357,000, the office manages: centralized fellowship and internship programs, all other stipend appointments, and other programs which support research. Trust funds support most of these programs. These programs facilitate communication and collaboration between the Institution and universities, museums, and research centers. They strengthen international and minority participation in Smithsonian research.

A number of programs enable students and scholars to visit the Institution. In FY 1988, the Institution-wide program awarded 108 predoctoral and postdoctoral fellowships. Twenty-five of these recipients were foreign students and scholars from 16 countries. In addition, federal and trust funds, allotted to the bureaus for specific programs, supported twenty-four fellowships. Under the Short-Term Visitor Program, 138 persons came to the Institution. Seventy-four of the participants represented thirty-one countries. The Regents Program continues to bring eminent scholars to the Smithsonian. Two fellows began their residencies in FY 1988. Six Smithsonian staff members received the James E. Webb Fellowship. The fellowships will allow recipients to further their specific administrative goals and promote excellence in management of cultural and scientific not-for-profit organizations. The Office also administered internship stipend awards for 145 students in FY 1988.

Several programs provide scholarly support to Smithsonian professional staff. Under the competitive Scholarly Studies program, 40 research proposals received grants. Some of these awards involved collaborative studies with scholars from other institutions. The Research Resources Program, established in FY 1988, supports archival projects. After review by an outside committee, OFG awarded seven grants. The workshop program provides funding for Smithsonian staff to organize seminars, symposia and conferences. These activities bring together scholars from around the world to discuss a variety of subjects; 19 received support in FY 1988.

The Office administers a number of programs to increase minority participation in Smithsonian research. Forty-six students joined ongoing research and museum studies in the Minority Internship Program. In addition, three students received appointments under the Cooperative Education Program. Two former appointees returned to complete their tour-of-duty. The Native American Awards Program appointed 16 Native American students and scholars to work on Native American resources and activities at the Institution. A second session of a Howard University/Smithsonian field studies course occurred at the Smithsonian Environmental Research Center in Edgewater, Maryland. This program encourages minority students to consider careers in natural history. Six students and two faculty from Howard participated, and three faculty from other historically Black colleges also attended. Under the Faculty Fellowship Program, six minority faculty members received awards to conduct research in residence.

II. Office of Interdisciplinary Studies: With base funding of 3 workyears and \$161,000 OIS presents findings of new research in the physical, natural, human sciences, and the humanities. Through symposia, colloquia and seminars, the Office explores questions about issues and trends in modern civilization and publishes books and other educational material based on these encounters. Thus it serves both internal and external audiences. It is a vital public service link between the Smithsonian and partners in the world of learning.

A major symposium in FY 1988 was "Afro-Americans and the Evolution of a Living Constitution." On March 15-16, 1988, this program assembled leading Constitutional scholars. Their pioneering work has advanced scholarship on the relationship of Afro-Americans to the United States Constitution. Present were prominent scholars, historians, political scientists, jurists, and public figures. The symposium's outreach efforts actively engaged a national audience. Efforts included a workshop for educators on "Teaching a Living Constitution"; a teleconference via satellite and cable television to colleges, universities, and the public. OIS developed a published summary of the symposium for distribution to 1,500 public and academic libraries across the nation; and produced educational materials tailored to junior high and high schools nationwide.

As an outgrowth of the May 1987 five-day international symposium "Constitutional Roots, Rights, and Responsibilities," a video-documentary is in production for use as supplementary instructional material in government and civics classes. The video entitled "Democracy and Rights: One Citizen's Challenge," explores the story of one citizen's pursuit of equal rights in the context of desegregation.

In 1989 a major international symposium, "Les Droits de l'Homme and Scientific Progress," will commemorate the 200th anniversary of the U.S. Bill of Rights, the French Revolution, and the French Declaration of the Rights of Man and Citizen. The Smithsonian and the National Academy of Sciences will co-sponsor the symposium in cooperation with the University of Virginia and the American Committee on the Bicentennial of the French Revolution. The OIS will produce a book and other educational materials.

Consultation is under way in various parts of the United States and abroad, including Native American research and education institutions, for ideas to incorporate in the 1992 symposium, "Exploring the Unknown," as part of the Smithsonian's commemoration of the Columbus Quincentenary.

III. Office of Elementary and Secondary Education: With base funding of 7 workyears and \$403,000, the Office is the Smithsonian's central education office. As such, it designs, develops and effects Institution-wide programming in education. OESE disseminates the products of this programming locally, nationally, and internationally. It also develops Institution-wide policies and goals for education. National programs that exceed the scope of the individual museums and their respective education offices receive special attention.

The Office offers a number of programs to encourage cooperation and exchange of information between the Smithsonian and schools in the metropolitan D. C. area. Let's Go (a newsletter published five times a year) informs more than 11,000 Washington area educators about the variety of learning opportunities available at the Smithsonian. In addition, a multidisciplinary workshop and seminar program for teachers includes one-week courses on topics such as teaching life sciences through direct observation, using community resources to teach about the United States Constitution, and teaching



American cultural history through art. Accredited by all of the metropolitan area school systems, these courses served more than 350 teachers and administrators in FY 1988.

To share these same teaching concepts with a national audience, the Office distributes ART TO ZOO. Since 1976, ART TO ZOO has been a highly regarded national publication and a staple of OESE programming. It represents a cost effective way of interpreting Smithsonian resources for a large and culturally diverse national constituency of teachers, students, and museum educators. Reaching over 25,000 schools and 100 museums, this publication costs less than 27 cents per issue, a very low per teacher price. Free-of-charge, OESE circulates slide-loan-packages and curriculum kits, (advertised in ART TO ZOO) which reach an estimated 5,000 students yearly.

With the signing of the Rehabilitation Act of 1973, the Smithsonian became legally responsible for making its programs accessible to people with disabilities. OESE created a program of which the primary objective is making Smithsonian educational offerings accessible to students with hearing impairments. The program now serves as the central Smithsonian resource on museum access. The program offers staff and docent training sessions and programs for and about disabled individuals. It also provides sign language instruction for SI employees and sign language interpreters for a wide-range of Smithsonian programs. (Since 1983, the demand for interpreter services increased by 30 percent.)

Throughout FY 1988, the Office continued its work to make Smithsonian programs accessible to disabled visitors. Interpreters were available at special events, lectures, and tours. OESE provided guidance to various Smithsonian museums seeking ways to improve programming for retarded, learning-disabled, hearing-impaired, and blind visitors. In addition, the Office disseminated to more than 300 organizations a manual and videotape package designed to help museums, zoos, and historic sites across the country serve disabled people.

Planning for program expansion will occur over the next five years. OESE will reach disabled individuals, who are also members of ethnic and racial minorities. The Office will sponsor seminars and symposia for SI staff on topics of accessible exhibition and publications design and emergency procedures for evacuating disabled visitors.

IV. National Science Resources Center - With base funding of 5 workyears and \$249,000, the National Science Resources Center is a joint undertaking of the Smithsonian Institution and the National Academy of Sciences. Its mission is to improve the quality of science and mathematics teaching in the nation's schools. The NSRC identifies, develops, and disseminates science and mathematics teaching materials that are imaginative, classroom-tested, and scientifically up-to-date. The Center also organizes leadership development institutes for school system personnel. These institutes encourage the sharing of successful resource materials and help build a talent pool to staff local program improvement efforts. The NSRC staff works with teachers, state and local school systems, research scientists, educational and scientific organizations, science museums, private foundations, and corporations to develop these programs.

In 1987, the Smithsonian Institution and the National Academy of Sciences established an Advisory Board for the National Science Resources Center. The membership of the NSRC Advisory Board includes representatives from several major

corporations, eminent scientists, and educational leaders from throughout the country. The NSRC Advisory Board counsels the NSRC executive director on broad policy issues and helps prioritize the Center's programmatic activities.

Because there is a special need to increase the scientific and technological literacy of young children, the NSRC has undertaken several projects to improve the teaching of science in the nation's elementary schools. The NSRC has developed an Elementary Science Resource Collection and Computer Information Database for use by school systems and science museums that are initiating projects to improve the teaching of science in elementary school. This database includes brief annotations, as well as bibliographic information, about the materials in the NSRC elementary science resource collection. The database is available to school systems across the nation through a computer telecommunications network.

In October, 1988, the NSRC published an elementary science resource guide entitled Science for Children: Resources for Teachers. In addition to information about the materials in the NSRC resource collection, this guide includes a directory of science museums and other organizations that provide "hands-on" science kits and assistance to elementary school teachers. NSRC has distributed copies of this guide to the nation's 16,000 superintendents of schools and to the members of the National Science Supervisors Association. Teachers, principals, parents, and the general public can obtain copies of Science for Children from the National Academy Press.

Science and Technology for Children (STC) is a four year NSRC elementary science curriculum development project supported by a grant from the John D. and Catherine T. MacArthur Foundation. The STC project will develop curriculum units for grades 1 through 6 in the areas of physical science, life science, earth science, and technology. The STC program will assist teachers to use simple inexpensive materials in an elementary school setting. The units will link science to the broader curriculum through an emphasis on reading, writing, art, and mathematics. Teachers across the country will field-test the STC units to refine and validate them.

NSRC is developing an Elementary Science Network of teachers, scientists, science educators, and school administrators who are working to improve the teaching of elementary school science. The NSRC is also sponsoring leadership development institutes to prepare selected teachers, science supervisors, and principals to organize hands-on elementary science programs in their school districts. The Center will also provide technical assistance to help school systems design effective in-service education programs, establish science materials support systems, and develop community support for their elementary science programs.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. Office of Fellowships and Grants - These funds, provided from allotments, are primarily for the Institution-wide fellowship programs. Shorter visits by scholars and students also receive support. A program allotment supports a part of the administrative expenses of the Office of Fellowships and Grants. The Regents Fellowship program continues to bring distinguished visiting scholars to the Institution.

In addition, these funds provide for: minority internships and faculty fellowships; minority students pursuing graduate degrees under the Education Fellowship Program; and the Native American Awards Program. The Scholarly Studies Program encourages research by Smithsonian staff in science, arts and the humanities.



While OFG administers this competitive Program, actual expenditures are reflected by the recipient organizations.

II. Office of Interdisciplinary Studies - An annual allotment funds salaries and partial office support costs. In addition, the allotment supports certain program development costs including honoraria, publications, and travel costs for speakers appearing in the symposia and colloquia.

III. Office of Elementary and Secondary Education : As part of the Institution's affirmative action effort, a Career Awareness Program (CAP) for the District of Columbia Public Schools introduces minority young people to career opportunities at the Smithsonian. OESE plans and runs CAP with help from the various Smithsonian museums, whose staff members work directly with the students, providing first an overview and then more profound exposure to a wide variety of Smithsonian careers. Through the District's Summer Youth Employment Program, 50 CAP graduates from this and past years worked at the Smithsonian during the summer of 1988. In addition, eight CAP graduates worked as junior interpreters at the National Museum of American History during the 1987/88 school year. Also, after extensive evaluation of CAP, plans are under way to extend the program nationally through development of a manual for use by teachers and museum educators. These materials, slated for publication in FY 1989, will enable local museums to institute programs that will interest minority young people in museums and museum careers.

In FY 1988, the Office continued to sponsor Regional Workshops in communities across the United States for the purpose of promoting the use of museums as educational resources. Among the regions holding these one-day events in FY 1988 were Wilmington, North Carolina; Tucson, Arizona; and St. Louis, Missouri.

For the second year OESE brought five teachers, from communities where Regional Workshops took place, to the Smithsonian for four weeks of thorough training in the Internship Program for High School Teachers. Designed to have a multiplier effect, the program trains master teachers to serve as catalysts for the creation of more effective museum/school programming in their home communities. This program carries three graduate credits from the University of Virginia.

A High School Intern Program, now in its 13th year, gave 40 graduating seniors an opportunity to participate in a learning/service program at the Smithsonian, working behind the scenes with curators and other museum professionals. Young people from all 50 states and the District of Columbia are eligible to apply for admission to either of two, five-week sessions.

In April of 1988, the Office convened the second annual meeting of the Smithsonian Advisory Council on Education, embodying a panel of 5 outside experts to the Institution to advise about developing a wider audience. In a related effort, the Office convened monthly meetings of education staff from throughout the Institution to discuss issues of common concern.

IV. National Science Resources Center - An allotment from unrestricted funds provides partial funding for the core operations of the National Science Resources Center. These resources provide support for salaries and core support necessary for the development of program initiatives to attract further support from the private sector, with the assistance of the National Academy of Sciences.

Restricted Funds - I. Office of Fellowships and Grants - These funds consist of restricted endowments, gifts, and grants from individuals and foundations for a particular project. They include: an endowment from the Walter Rathbone Bacon Scholarship for research on fauna outside the U.S.; the James E. Webb Fellowship to promote excellence in the management of cultural and scientific organizations; and a Rockefeller Foundation Grant to support residency fellowships at the National Museum of African Art and the Center for Asian Art.

II. Office of Interdisciplinary Studies - Funds provided are in the form of restricted endowments which specify the use of donations or bequests and of gifts and foundation grants by individuals, organizations, or corporations for specific purposes. Examples of these funds are the Sergei N. Grimm endowment, which finances research related to scientific urban planning, and the Barrick W. Groom endowment, which perpetuates both the interbureau and the interdisciplinary program. During FY 1988, OIS received grants from the Rockefeller Foundation, Gannett Foundation, and Ford Foundation for the symposium entitled, "Afro-Americans and the Evolution of a Living Constitution," and the John P. McGovern Foundation to establish an award for work in the behavioral sciences leading to a better understanding of the family.



MUSEUM SUPPORT CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	32	4,426	-	2	-	5	-	-	-	-
FY 1989 -Estimate	41	4,419	-	-	-	77	-	-	-	-
-Base	41	4,455								
FY 1990 Estimate	42	4,491	-	-	-	-	-	-	-	-

\* FTE = Full-time equivalent  
 \*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	41	1	42
11 Personnel Compensation.....	815	26	841
12 Personnel Benefits.....	130	10	140
21 Travel.....	14	-	14
22 Transportation of Things.....	1	-	1
23 Rent, Communications & Utilities.....	4	-	4
24 Printing & Reproduction.....	4	-	4
25 Other Services.....	253	-	253
26 Supplies & Materials.....	83	-	83
31 Equipment.....	3,151	-	3,151
Total	<u>4,455</u>	<u>36</u>	<u>4,491</u>

Analysis of Increase

Necessary Pay..... 36

ABSTRACT - The Museum Support Center (MSC), located in Suitland, Maryland, adjacent to the Institution's Suitland Facility, provides a state-of-the-art complex for the care, conservation, and storage of the Institution's collections. The conservation facilities at the MSC include the Conservation Analytical Laboratory and laboratories for the National Museum of Natural History/Museum of Man (NMNH/MOM) and the National Museum of American History (NMAH). The collection storage area at the MSC occupies four discrete sections (or pods) and provides three types of storage space: collections storage in cabinets; "wet" collections storage on open shelving

for biological specimens in alcohol (both referred to as "high density"); and "high-bay" storage for very large objects.

For FY 1990, a total amount of 42 workyears and \$4.491 million will permit the Institution to pursue several efforts related to the Museum Support Center, including purchasing collection storage cabinets and components (\$3.058 million); continuing the preparation and transfer of collections to the MSC (\$286,000); providing administrative and building management services at the MSC (36 workyears and \$1.037 million); and continuing the development of a program to evaluate the effectiveness of asbestos decontamination techniques used on museum objects prior to their move to the MSC (6 workyears and \$110,000). The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Museum Support Center. As part of the FY 1990 level of funding, the Institution requires \$12,000 for Necessary Pay for existing staff funded in this line-item, along with 1.5 workyears and \$24,000 to annualize the partial year funding of 6 new positions approved in the FY 1989 budget.

PROGRAM - The Museum Support Center, located in Suitland, Maryland, provides a state-of-the-art facility for the storage of museum collections; the conservation and preservation of museum objects; and conservation training. The unique design of the MSC creates two wings (a laboratory wing and a storage wing) on either side of a central corridor. Conservation facilities occupy a significant portion of the laboratory wing, and their activities include conservation treatment, scientific analysis, and training. The Conservation Analytical Laboratory (CAL), the Anthropology Conservation Laboratory of the Museum of Natural History, and some of the facilities of the Division of Conservation of the Museum of American History are at the MSC. The Museum Support Center branch of the Smithsonian Institution Libraries system, one of five conservation libraries in the world and the only one in this country that provides a reference service on conservation, maintains a collection of more than 15,000 books and 160 periodical titles.

The Smithsonian Oceanographic Sorting Center, a specialized research and service unit of the National Museum of Natural History, also occupies space in the laboratory wing. The Sorting Center sorts and classifies animals and plants which oceanographic expeditions collect, and then distributes these specimens to scientists around the world.

During FY 1988, the National Museum of Natural History established a new Molecular Systematics Laboratory at the Museum Support Center. This laboratory builds upon the Museum's broad expertise in systematic and evolutionary biology and incorporates historical and ecological perspectives. It will enable molecular study of the genetics of organisms by the largest single team of systematic biologists in the world. The laboratory will focus on DNA molecular analysis.

The storage wing consists of four storage pods, each approximately the size of a football field and 28 feet high. Collections stored in cabinets on three levels of concrete decks will occupy approximately five-eighths of the total storage space (Pods 1 and 2, and a portion of Pod 4). In addition, Pod 3 provides open shelving storage for "wet" collections (those in alcohol), and a portion of Pod 4 will allow "high-bay" storage for very large objects.

The move of millions of objects and specimens to the Museum Support Center is unprecedented in the museum world. The volume, characteristics and variety of the collections and the distance of the transfer pose special challenges.

Since FY 1983, museum technicians working on the MSC Move staff have prepared collections from MNMH/MOM and MNAH for the move. Their efforts range from cleaning and stabilizing the objects, to packing and moving them to staging areas and then to the MSC, and performing needed conservation treatment. The MSC Move staff has developed and follows a plan to coordinate each phase of the move using the "Critical Path Method" (CPM), a systematic planning technique for highly complex projects. The staff has automated information on relevant variables which affect the complex schedules and updates that information continuously. In addition, the MSC Move staff has determined the specific methods of packaging and modes of transport appropriate to the particular collections and objects involved. Move efforts will continue at least through FY 1994.

Museum Support Center Collections Storage Equipment - Between FY 1981 and FY 1989, the Institution obligated approximately \$28.3 million to purchase and install storage equipment for both the "wet" storage (Pod 3) and the "high-density" storage areas (Pods 1, 2, and 4). While the Institution completed the installation of the "wet" collections storage equipment in FY 1984, it has to date been unable to realize the potential of the Museum Support Center. This is due to the cumulative effect of various difficulties in purchasing and installing "high-density" storage equipment for the other three storage pods. The initial problems with the "high-density" storage equipment resulted from the contractor's inability to provide a three-level self-supporting collections storage system, as originally planned, to meet the requirements for a bug-free and airtight enclosure. The alternative recommended by the contractor was to change to a more conventional collections storage system, consisting of pre-manufactured storage cabinets on three levels of concrete decks. However, the General Contractor's failure to make adequate progress in constructing the concrete decks and designing and manufacturing the storage cabinets continued to hamper the acquisition of this collection storage system. Finally, on July 15, 1987, the General Services Administration (GSA), in managing the construction contract for the MSC project, determined that the General Contractor's performance on this contract was unsatisfactory and terminated the contract for default.

GSA is currently proceeding to reprocur this storage equipment and recover the Institution's losses caused by the default, although recovery of funds may take several years. Approximately \$21.6 million, which the Smithsonian has transferred to GSA through FY 1988, is currently available for the reprocurement. An additional sum of \$3.058 million appropriated in the FY 1989 budget will be transferred to GSA early in 1989. GSA is pursuing reprocurement through a number of bid packages. One bid package covers the general construction components, including the structural deck system and related work. Several separate packages would cover the reprocurement of the various types of collections storage cabinets and components.

Current Status of MSC Collections Storage Equipment Reprocurement (Dec 1988) - GSA completed the reprocurement documents for the general construction work and awarded this contract in October 1988 at a cost of \$4.45 million. GSA is splitting the reprocurement of the storage cabinets, compactor frames, and cantilever shelving for the initial move into several smaller packages in an attempt to reduce delivery time and to obtain the best pricing. During FY 1988, GSA engaged a consultant to conduct a market survey of the storage industry and to advise it on the best type of procurement(s) for the storage equipment packages. During FY 1988, GSA, in consultation with the Institution, will make the final decisions on how to procure each type of storage equipment. GSA issued one of several requests for proposals for storage equipment in November 1988. GSA issued a second request in December 1988. These two packages contain a large majority of the cabinets that GSA will order. GSA



will issue several smaller packages beginning in January 1989, with the last one issued by the summer of 1989.

The Institution will utilize the FY 1990 funding, which maintains the FY 1989 base level of \$3.058 million, to continue the purchase of collections storage cabinets, drawers, and shelves for the initial move. GSA now projects far greater procurement costs than it did just after terminating of the contract. GSA currently estimates the total required to produce bid packages, construct, manufacture, and install the decking, utilities, and storage cabinets for the initial move at \$28.1 million. This estimate includes:

- the additional costs resulting from the labor required to complete the design work;
- the repetitive labor required for a new contractor to set up site work and prepare shop drawings, as well as for the government to review new shop drawings; and
- the anticipated inflation through FY 1988 (estimated as high as 15-20 percent per year for storage cabinets).

However, the current estimate does not reflect the cumulative effects of future inflation (based on increases in the producer price index for steel) that may occur between the present time and when the cabinets or components are actually manufactured. GSA and the Smithsonian will revise this estimate in January 1989 after reviewing the bids received in response to the request for proposals GSA issued in November 1988 for storage equipment. GSA and the Smithsonian will revise the cost estimate again after January 31, 1989, upon receipt of the bids for the second storage equipment package which GSA issued in December 1988. These estimates will reflect the cumulative effects of inflation.

Based on the current procurement process schedule, GSA estimates that construction in all three pods will be complete by February 1990 and that final installation of all storage equipment will be complete by December 1992. The work of the general construction contract is phased in order to complete Pod 1 first, then Pod 2, and finally Pod 4. This phasing will allow partial occupancy of a pod as soon as a sufficient number of cabinets are available.

Since the Institution's first priority is to urge GSA to complete the procurement of the "high-density" (three-level) storage equipment in Pods 1, 2, and 4 for the initial move, the Institution has postponed the procurement of the "high-bay" collections storage equipment until FY 1991 or later. However, both the Museums of Natural History and American History critically need this equipment to store very large objects, such as totem poles and whale skeletons. Present estimates are that, with escalation, the cost of the "high-bay" equipment will exceed \$2.0 million by FY 1991. Better estimates of the cost of this equipment will be available closer to the acquisition date. (Actual cost for the "high-bay" storage equipment may vary as the result of actual bids received at the time of procurement and the inflation rate in effect at the time of the bid for the city of the bidder.)

The Smithsonian currently expects to request a level of funding of \$8 million for FY 1991 through FY 1994 to purchase collections storage equipment for the MSC. The Institution will revise future funding projections after the contract awards of the different collection storage packages for the initial move, and will adjust the



estimates in the Five-Year Prospectus, as appropriate. Escalation, in particular, may greatly increase the five-year estimates for the acquisition of collection storage equipment. (Actual costs for the collection storage equipment that the Institution will procure from FY 1991 through FY 1994 may vary as the result of actual bids received at the time of procurement and the inflation rate in effect at the time of the bid for the city of the bidder.)

Move of the Collections to the Museum Support Center - Between FY 1983 and FY 1988, the Institution has spent approximately \$2.6 million to prepare the collections for relocation; to move collections for which there is storage equipment; and to cover the salary costs of the temporary work force engaged in cleaning, packing, and moving collections.

The Smithsonian completed the initial move of over 260,000 specimen lots into the "wet" collection storage equipment in Pod 3 in 1985. Since that time, the MSC Move staff has transferred more than 53,700 additional specimen lots to Pod 3. While the problems in procuring the "high-density" storage equipment have delayed the permanent relocation of other collections to the MSC, the Institution has moved the following NMNH collections to temporary storage locations at the MSC until such time as their permanent storage space becomes available:

- over 195,500 archeological objects (representing 25 percent of those collections) and 17,500 ethnological objects from the Department of Anthropology;
- more than 4,195,000 insect specimens from the Department of Entomology;
- over 36,700 petrology and meteorite specimens from the Department of Mineral Sciences;
- 2,291,390 specimens from the Department of Paleobiology; and
- 213,800 specimens from the Department of Botany, including diatoms and algae.

The MSC Move staff has inspected these objects for pests and conservation problems and has properly stabilized these collections. The relocated collections are in less crowded and better controlled conditions than collections in most other Smithsonian storage areas. As a result, they have far greater potential for long-term preservation and use. As the Move staff continues to prepare more collections, it will continue to transfer these objects to temporary storage in the MSC and the Mall buildings until their permanent storage locations are ready.

During FY 1989, with base funding of \$267,000, the MSC Move staff will continue to prepare collections of the Museum of American History and the various departments of the Museum of Natural History, including Anthropology, Entomology, Mineral Sciences, Vertebrate Zoology, Botany, Paleobiology, and Invertebrate Zoology that will eventually occupy storage space in Pods 1, 2, and 4.

The funding base of \$286,000 requested for FY 1990 will enable the Institution to continue to prepare these collections for relocation and then to move the collections to temporary storage at the MSC. This work can proceed despite the delay in the procurement of the storage equipment. Therefore, the Institution will be able to use effectively the time available prior to the installation of the "high-density" storage equipment. The Institution will reevaluate the future funding requirements for the Move based on the new delivery schedules of the collections storage equipment as a result of the reprocurement and the future effects of the reduced base level of funding as a result of Congressional action on the FY 1989 budget.

Asbestos Decontamination Techniques - With funding appropriated in FY 1989, the Institution initiated a program to evaluate the effectiveness of various asbestos decontamination techniques to clean museum objects prior to their move to the Museum Support Center. The decontamination is necessary because asbestos has contaminated these objects' present collections storage areas in the Museum of Natural History, the Museum of American History, and the Institution's Suitland Facility. An evaluation of various cleaning techniques will ensure that the collections are effectively cleaned and that these collections pose no health threat to researchers or the public when they are placed on display. The evaluation will utilize strict surface testing and air monitoring methods. These methods determine the level of contamination, both before and after cleaning. The Institution will continue this project to evaluate a variety of cleaning techniques used with the wide range of museum object types.

Administration and Facility Management - With base funding of 36 workyears and \$1,008,000, the Office of the Director of the Museum Support Center coordinates activities of the various user and support units; oversees the automated data processing center used for registration and collections management activities, including the move to the MSC; and arranges services to meet the research and informational requirements of the occupants. The Office also oversees the procedures established to control and account for the flow of collections into and out of the MSC and ensures the safety of the collections against pest infestations and other hazards. Under the general supervision of the MSC's Office of the Director, the facility manager is responsible for providing shipping and receiving services, moving equipment and objects, overseeing safety and security operations, and cleaning and maintaining all aspects of the building. Because of the need to maintain very strict environmental standards, cleanliness is a fundamental requirement for the successful operation of a collections management facility.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An allotment has supported the purchase of special laboratory equipment for the Conservation Analytical Laboratory. CAL expects to complete the purchase of this equipment by the end of FY 1989.

ADMINISTRATION





ADMINISTRATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	272	16,140	203	10,379	20	3,048	-	122	-	-
FY 1989 -Estimate	320	18,098	203	12,645	17	2,898	-	131	-	-
-Base	320	18,507								
FY 1990 Estimate	356	21,187	214	14,755	17	2,555	-	126	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	<u>Base FY 1989</u>	<u>Proposed Adjustments</u>	<u>Est. FY 1990</u>
FTE Allocation.....	320	36	356
11 Personnel Compensation.....	10,959	1,002	11,961
12 Personnel Benefits.....	3,436	1,321	4,757
21 Travel.....	139	11	150
22 Transportation of Things.....	25	-	25
23 Rent, Communications & Utilities.....	118	407	525
24 Printing & Reproduction.....	76	30	106
25 Other Services.....	2,656	-112	2,544
26 Supplies & Materials.....	682	13	695
31 Equipment.....	412	8	420
41 Grants.....	4	-	4
Total	<u>18,507</u>	<u>2,680</u>	<u>21,187</u>

Analysis of Increase

Necessary Pay.....	404
Program Change.....	1,070
Federal Employees Retirement System.....	730
Health Insurance Benefits.....	476

ABSTRACT - Administration includes central management, planning, oversight and review provided by the Offices of the Secretary, Under Secretary, Assistant Secretary for Administration, General Counsel and Treasurer. It also covers a wide range of specialized administrative and technical offices, such as Audits and Investigations, Business Management, Congressional Relations, Equal Opportunity, Facilities Services

(responsible for Design and Construction, Plant Services, Protection Services, Environmental Management and Safety Programs and Architectural History and Historic Preservation), Financial Management and Planning, Accounting and Financial Services, Risk Management, and Sponsored Projects. Other offices comprising this grouping include Information Resource Management, Management Analysis, Personnel Administration, Printing and Photographic Services, Planning and Budget, Procurement and Property Management and Travel Services. These organization units receive both appropriated funds and nonappropriated unrestricted Trust funds for their operating support in approximate balance to the overall funding of the Institution. However, Trust funds entirely support some offices, such as Business Management, Sponsored Projects, and Risk Management.

For FY 1990, the requested increase for administrative units totals 17 workyears and \$1,221,000. The increase will enable the Institution to implement the new financial and accounting system (16 workyears and \$652,000), increase its internal auditing capacity (1 workyear and \$39,000), and provide space on the Mall for expanded programmatic activities through the acquisition of additional rental space and preparations (\$530,000).

The Office of Procurement and Property Management requests 1 workyear and \$79,000 for management and technical costs associated with the enhancement of the Smithsonian's repairs and restoration programs. The Repairs and Restoration section of this budget request contains the justification for these and other administrative costs.

The Institution requires \$136,000 for Necessary Pay for existing staff funded in this line-item, along with 8.50 workyears and \$268,000 to annualize the partial year funding of 34 new positions approved in the FY 1989 budget.

Also contained in this line-item are 10 workyears and \$450,000 associated with the upward mobility program in the Institution's special employment initiative. Justification for these resources appears in the central Special Employment Initiative section of this budget. In addition, the Institution requests \$730,000 for increased FERS costs and \$476,000 for increased Health Insurance costs. The Uncontrollable Increases section of this budget request contains the justifications for these increases.

Decreases of \$680,000 partially offset the requested increases. The decreases reflect nonrecurring expenditures in FY 1989 for the Financial Management System (\$400,000), automation for the Office of Audits and Investigations (\$30,000), and a decrease in Unemployment Insurance costs (\$250,000) resulting from improved management practices.

PROGRAM - The Office of the Secretary, with the assistance of the Office of the Under Secretary, is responsible for management and administration. This includes policy determination, program planning, legislation, and oversight and performance evaluation of activities. The Office of the Assistant Secretary for Administration, with the assistance of the Director of Facilities Services, is responsible for administrative and facilities services.

The Office of Audits and Investigations (OAI) performs all internal and external audits and investigates any fraud, waste, abuse, or white collar criminal activity. OAI audits Federal programs as well as Trust-funded activities on a cyclical basis. The Office reports audit results and recommends measures to improve program

administration. OAI also audits claims, cost proposals, and cost and pricing data arising from contracts, grants, and other financial agreements. OAI investigates allegations of criminal activities by employees or contractors. The results of these inquiries serve as the basis for appropriate criminal, civil or administrative remedies. OAI staff also investigate areas with the potential for fraud and abuse. The Smithsonian's public accountants consider the work of the Office in determining the nature, timing and extent of their audit procedures. The Institution provides reports on audits and investigations to the Audit and Review Committee of the Board of Regents.

The Office of the General Counsel provides counseling to the Smithsonian Board of Regents and the Secretary. The Office also advises other Institutional officers on pertinent legal matters; coordinates and oversees litigation and other adversarial proceedings; and reviews administrative claims arising out of Smithsonian operations. Generally, the Office monitors all aspects of Smithsonian activities for legal implications as new developments in the law affect the Institution.

The Office of the Treasurer oversees financial management and certain Institutional income producing activities. These include Museum Shops, Mail Order, Product Development and Licensing, and Concessions. Financial management duties rest in the Office of Financial Management and Planning, Office of Accounting and Financial Services, the Office of Sponsored Projects (formerly named the Contracts Office), and the Office of Risk Management. These offices handle accounting, payroll, financial reporting, financial systems development, administration of grants and contracts, insurance matters, Treasury and bank relations, and investment management.

The Office of Congressional Relations (formerly named the Office of Congressional Liaison), reporting to the Assistant Secretary for External Affairs, develops and maintains the Institution's relationships with the Congress; prepares and clears legislative materials; arranges Smithsonian participation at legislative hearings; and acts as central liaison with Federal agencies and organizations with related interests.

The Office of Equal Opportunity plans, conducts, and monitors a positive action program to ensure equality in employment practices and program activities. Major efforts include affirmative action programs, program and facility access for disabled persons, employee counseling and complaint processing, upward mobility, programs for women and Hispanics, and community outreach to minority and women's groups in Washington, D.C. and elsewhere.

The Office of Information Resource Management (OIRM) oversees planning for new automated systems and technologies; helps determine information resource management policy; ensures the integrity and security of Institutional data; applies modern computer and communications technology to the Smithsonian's scientific, scholarly and management information needs; ensures compatibility of hardware and software; and fosters user access information systems and computing power. OIRM acquires, develops, and maintains automated information processing and data communications systems; administers the Smithsonian's data processing cost centers; operates computer systems and voice and data communications networks; and offers pertinent training to users.

The Management Analysis Office provides advisory assistance to Smithsonian administrative operations. The Office studies organizations, systems, and procedures; prepares and distributes management's policy statements and operational guidelines; and oversees the Institution's forms management program.



The Office of Personnel Administration provides personnel services, advice, and assistance to managers and employees of the Institution. Within the laws, rules, and regulations of Federal oversight agencies and within the policies of the Institution, the Office oversees recruitment, staffing, and position classification; wage and salary administration; performance management and merit pay systems; employee relations; and benefits administration. The Office also is responsible for labor-management relations; training and career development; employee assistance; job and retirement counseling; workers' compensation; unemployment insurance; personnel policy development; personnel management evaluation; and records and data processing and maintenance.

The Office of Printing and Photographic Services offers technical advice, guidance, and photography and duplicating services to curatorial, scientific, technical, and administrative staff. Photographic services include studio and on-site photography, photographic copy restoration, printing, preservation of originals under archival conditions, the development and maintenance of an automated catalogue of photographs, the investigation and application of new photographic technologies, and sale of materials to the public.

The Office of Planning and Budget (OPB) coordinates Institution-wide long-range planning efforts, advises management on related matters and prepares the Five-Year Prospectus. The Office also formulates the Institution's consolidated Federal and nonappropriated Trust fund budgets and submits them for review and approval by the Secretary and the Board of Regents. OPB prepares justifications for approved budgets for submission to the Office of Management and Budget (OMB) and to the Congress. OPB serves as liaison with OMB and Congress on budgetary matters. OPB monitors appropriated budgets and nonappropriated Trust fund budgets to ensure that the Institution meets program needs, achieves budgetary goals, and maintains accountability. The Office maintains central financial information data bases for use in management reports, budgetary planning, and special analyses.

The Office of Facilities Services directs a wide range of security, operation, maintenance, and repair programs for Smithsonian facilities. It oversees modifications and improvements to the physical plant to support growth of programs and activities and conducts long-range planning for facilities development and utilization. Reporting to the Director of Facilities Services are the Office of Environmental Management and Safety (OEMS) and the Office of Architectural History and Historic Preservation (OAHHP). OEMS advises and assists Smithsonian bureaus concerning fire protection for their facilities and the National Collections. OEMS also monitors occupational safety and health, including industrial hygiene and hazardous materials control; and reviews, disseminates, and implements the requirements of all new fire, safety, health, and environmental laws, regulations, and standards. OAHHP compiles and updates the architectural history of the Smithsonian for research and publication, reviews design and construction projects as they apply to historic preservation regulations to ensure compliance with section 106 of the National Historic Preservation Act, and oversees the Smithsonian furnishings collection.

The Office of Procurement and Property Management (OPPM) provides central logistical support and acquisition policy guidance. This is achieved through policy, planning, management, and coordination of the Procurement, Contracting, Property Management and Supply programs. As the Institution's principal acquisition service, OPPM procures supplies, materials, contractual services and equipment in support of



research and educational programs. OPPM also acts as the Smithsonian's space-leasing agent. In addition, OPPM provides pre-acquisition policy guidance and administers contracts on behalf of various Smithsonian units. OPPM ensures that the performance of these functions is effective and conforms to Federal and Smithsonian policy, rules, and regulations.

The Travel Services Office makes travel arrangements at the lowest possible cost for Smithsonian employees to comply with Smithsonian and Federal travel regulations. The Office enforces the government contract carrier program and the Fly American Act. The Office works closely with other offices to develop and implement new and revised travel regulations and distributes announcements about pertinent changes.

Progress in Administrative and Technical Support - The Institution has placed major emphasis on administrative and support operations to ensure their responsiveness to needs. Noteworthy during FY 1988 and planned for FY 1989 are the following:

The Office of Audits and Investigations issued 14 internal audit reports during FY 1988. These reports encompassed such diverse operations as the transportation procurement process, small purchase order system, mail management at the Smithsonian, and cash receipts and procurements at the Festival of American Folklife. OAI provided audit reports to the Contracting Officer on 12 contracts which resulted in over \$300,000 in savings for the Institution. The investigations staff opened a total of 41 cases, 18 of which resulted from the Fraud Hotline. The Office referred an additional 13 Hotline complaints to other Smithsonian units for administrative action. Four ongoing surveys to look for fraud, waste, and abuse also began. OAI staff closed 34 cases during the fiscal year resulting in the recovery of funds and Smithsonian property. Seven employees received reprimands ranging from letters of caution to termination for misconduct. The Office referred two of the cases for prosecution, resulting in convictions in Federal court, and three additional cases are pending.

The Institution's diverse programs present a wide range of legal questions and issues for advisement by the Office of General Counsel. Such issues include evolving areas of the law such as hazardous waste management, sexual harassment/discrimination, drug testing, AIDS, and repatriation of Native American remains and artifacts. Ongoing matters entail trust law, Constitutional law, intellectual property rights, cultural property laws and treaties, immigration, real property transactions, contracts, labor relations, endangered species regulations, civil rights, employee standards of conduct and ethics, estates, and tax laws. In FY 1989, the Office of the General Counsel has an authorized staff of 11 attorney positions and 7 support staff. Ten positions (6 attorneys and 4 support staff) are federally funded.

The Office of Congressional Relations oversaw legislative activity surrounding proposals for the disposition of Native American skeletal remains and for a Museum of the American Indian, among other issues. Repatriation and the museum debate are likely to dominate the Office's future activity. Taxation and environmental concerns, as well as proposals to build an extension to the National Air and Space Museum, have required attention this past year and will continue to do so. During the first session of the 101st Congress, the terms of two citizen members of the Smithsonian's Board of Regents will expire, requiring legislation providing for their reappointment or for the appointment of successors.

The Office of Planning and Budget, formerly named the Office of Programming and Budget, conducted a retrospective analysis of changes to budget formulation procedures that the Institution implemented in 1987. The retrospective resulted in a number of

procedural improvements. The Office also expanded the use of automation from the collection of data to assembly of budget narratives; provided expanded analytical support to Assistant Secretaries during the FY 1990 budget formulation process; conducted a comparative analysis on the use of base resources in several bureaus; participated in development of the functional requirements for the proposed new accounting system; developed a requirements statement for a new automated personnel cost projection system; issued two releases of the first Smithsonian Institution Budget Manual; installed a local area network; and provided Institution-wide training on how to write budget justifications.

The Office of the Treasurer continues to focus on the improvement of accounting and financial management systems. The Smithsonian has contracted with the U. S. Department of Agriculture's National Finance Center to process both its Civil Service and Trust payrolls. Conversion occurred in November 1987. Beginning in April 1988, the Institution set up specifications for new accounting software as a first step in developing a new financial system. One of the goals of this project is to respond to the directives of the Office of Management and Budget. The Treasurer's Office is especially interested in using off-the-shelf software and in standardizing the Institution's general ledger consistent with government-wide efforts.

With the addition of another staff member in FY 1988, the Travel Services Office has improved its services and response time for travelers. The staff provided support for the growing number of conferences and workshops arranged through the Smithsonian ranging in size from 5 to 50 persons. There has been an average of two conferences or workshops per month. In FY 1988, the Office, with the Office of Accounting and Financial Services and the Management Analysis Office, completed and distributed to bureaus and offices the revised Travel Handbook. This is the first comprehensive revision of this handbook in more than 11 years, and it incorporates the most recent changes in the government per diem system. The Office is realizing a financial benefit by using North Atlantic Travel Antitrust Litigation Settlement Coupons obtained through a recent U.S. Government legal action. During FY 1988 and FY 1989, the Office will save over \$5,000 on air fares to and from the United Kingdom.

The Office of Printing and Photographic Services (OPPS) initiated three projects of national importance. Since it opened almost six years ago, the cold storage facility has become one of the most successful and imitated photographic facilities of its type. OPPS has scheduled its expansion in early FY 1989 to keep pace with the increasing numbers of photographs maintained in the collection. Under a research program in applied photographic preservation, OPPS continues testing a new toning solution. The OPPS' use of the solution could eliminate a suspected carcinogen from Smithsonian photographic laboratories. OPPS modified its testing procedures to include newly developed hydrogen peroxide fuming equipment which will increase the validity of the project results. In its continuing experiments with still video systems for collections management projects, the Office is learning how to adapt photography to a new technology of electronic still imaging. These experiments will offer state-of-the-art techniques for capturing and using collection images for a wide range of applications. The Office has reached agreement with the School of Visual Communications, Ohio University to use electronic images experimentally for newspaper reproduction.

The Office of Information Resource Management, with staff from the Office of Procurement and Property Management, awarded a contract for a new integrated system to serve the two Associate membership programs. OIRM installed an on-line collection cataloging system on the Institution's IBM mainframe for the Department of



Invertebrate Zoology as one step in implementing a new Collections Information System. The outcome of prototype-testing now underway will determine the Institution's options with respect to new accounting/budgeting/procurement software. The Institution will decide upon the software in FY 1989. The Institution has completed the transfer of personnel/payroll functions to the National Finance Center (NFC), and NFC is developing reports drawing on that data base. The Institution has increasingly emphasized training so Smithsonian staff can fully utilize the growing number of microcomputers and the new mainframe applications. OIRM added eight new courses and trained about 1,000 staff in FY 1988. OIRM established a "Help Desk" to provide call-in help to computer users. The Desk handles about 300 calls each month.

The Office of Procurement and Property Management processed approximately 10,000 transactions amounting to approximately \$104,000,000. Contracting projects became more complex and the total dollar value and number of requisitions increased. OPPM acted upon all contracts for goods and services within 30 days and awarded most construction contracts within 45 days. OPPM delegates small purchasing authority throughout the Institution to eliminate the need to process large volumes of small dollar requisitions. Contractors completed construction of the National Air and Space Museum Restaurant in July, and the restaurant is now operational. Contract administration for the construction of the Tupper Research Facility and Conference Center in Panama and the Barro Colorado Island research facility improvements continue. The Smithsonian Information Center construction contract also continues. The Property Management Program continues to produce savings for the Institution. In FY 1987, only 0.5 percent of the total items of property were lost or stolen.

Major activity in the Office of Personnel Administration included the conversion to the National Finance Center personnel/payroll system. A substantial effort to inform and educate employees accompanied the conversion, including a hotline for payroll problems. The Office reorganized to handle better the requirements of the new system.

In FY 1988 and FY 1989 the Office of Facilities Services implemented a more formal goal setting process to define program direction and provide a framework for strengthening program management and increasing support provided to the Institution's activities. Human resources and organizational development are key issues, and goals for the coming year emphasize leadership, cross development and training for individual growth of staff members for increased productivity. The Office will also work to improve the quality of new hires, with emphasis on attracting minority and women candidates for professional and managerial positions. In addition, the Office will focus on development of management systems for tracking facilities management activities and analyzing program effectiveness, and implementation of automated systems to improve the sharing of information within the Facilities Group and with other Smithsonian organizations. The Office will further define the process for long-range facility planning and development.

The Office of Environmental Management and Safety revised the Smithsonian handbook on Safety and Environmental Management to expand its scope and current relevance. Additionally, working with the Office of Museum Programs, the Office conducted a three-day workshop for small domestic and foreign museums and other educational and cultural institutions. This unique workshop addressed program development and problem-solving for fire protection, disaster planning, occupational safety and health, and environmental management.

The Office of Architectural History and Historic Preservation researched the architectural history of the National Zoo and the National Museum of Natural History. The Office organized the architectural records and photographs and augmented those materials with records from the Smithsonian Archives. The Smithsonian Furnishings Collection of 3,000 furniture and decorative arts items, from the mid-19th to late-19th century, has grown. OAHHP has contracted for the reproduction and sale of pieces in the collection. Royalties on the sales will allow OAHHP to make future acquisitions for the collection.

EXPLANATION OF PROGRAM INCREASES - For FY 1990, the requested increase for administrative units totals 17 workyears and \$1,221,000 as follows:

The Office of Accounting and Financial Services requires 15 workyears and \$601,000 to implement a new accounting system which will enhance the Institution's financial accountability. The Office of the Treasurer requires 1 workyear and \$51,000 to monitor the progress of the new accounting system. The Office of Audits and Investigations requires 1 workyear and \$39,000 to resolve the growing caseload at the Institution and to deter criminal activity.

A decrease of \$680,000 associated with nonrecurring expenditures in FY 1989 and a decrease in Unemployment Compensation costs offsets these increases. The reductions include: the Financial Management System (\$400,000), the Office of Audits and Investigations Local Area Network (\$30,000), and lowered Unemployment Compensation costs (\$250,000) resulting from improved management practices.

Office of Accounting and Financial Services (OAFS) (15 workyears and \$601,000)- The requested resources will enhance Smithsonian financial accountability. The enhancement is part of the Institution's effort to strengthen its management infrastructure and administrative practices. The proposed new accounting system replaces the current 20-year-old system. Growth in the dollar volume of Federal appropriations and Trust funds and related transactions has exceeded the monitoring capacity of the old system. The current accounting system is only semi-automated, and it uses now obsolete equipment. Replacement parts for the computer it resides on are difficult to find and costly. The Institution completed the first step toward replacing its accounting system in FY 1988 when it converted to payroll processing services by the National Finance Center of the Department of Agriculture.

The requested funding will pay costs to install new general ledger and accounts payable programs in FY 1990. Both programs will meet the requirements of the Federal Government's Joint Financial Management Improvement Program and will address deficiencies cited by internal and external auditors. The new program will permit the Institution to post transactions, pay bills, update accounts, access and retrieve data, and prepare financial reports in a more timely manner and with fewer opportunities for error. To operate the new system and improve services, the Office will hire four accounting technicians, two system accountants, one accountant, one records clerk, and seven temporary accounting technicians. Also, the new positions will allow for parallel processing on the new and old systems to ensure accuracy and a smooth transition. Other related expenses include training and related travel, system documentation, computer usage and communications, space renovations, and supplies.

The new accounting system will accommodate 20 years of transaction growth. The Institution will be able to provide more reliable financial reports for internal and external audits, thus improving financial accountability.



Office of the Treasurer (1 workyear and \$51,000) - The requested resources will further enhance Smithsonian financial accountability. The requested position will assist the Treasurer in monitoring the progress and utilization of the new financial accounting system. In addition, the assistant will prepare and distribute reports, utilizing information from the new system, to management and appropriate organizations within the Institution to ensure efficient use of resources. The Treasurer needs the direct assistance of a financial analyst to obtain required data from the new system for this statistical and financial analysis and reporting.

The requested increase is part of a greater effort to improve financial accountability of the Institution. The Institution will achieve this goal by replacing its current accounting system and hiring qualified staff to use it as a management information system.

Office of Audits and Investigations (1 workyear and \$39,000) - By increasing the number of comprehensive investigations the requested increase will deter criminal activity and other forms of misconduct at the Institution and will resolve more quickly a growing caseload.

The investigative function within the Office of Audits and Investigations is growing in scope and complexity. Because of the growing confidence of employees in the Fraud Hotline, the number of referrals and requests for investigations continues to increase. Requests to investigate suspected criminal activity or misconduct require staff hours that are currently unavailable. The inquiries often involve the need to follow leads in the private sector and throughout the United States. Because of the growing confidence of employees in the Fraud Hotline, the number of referrals and requests for investigations continues to increase. The current resources that can be dedicated to the investigative function are marginal. Other audit activities cannot be halted to give increased attention to investigations. The requested position for a criminal investigator will meet a growing demand for investigative services.

Additional Space Rental Requirement (\$530,000) - In FY 1989, the Institution is making a number of changes to space assignments in the Arts and Industries (A&I) Building to accommodate program support requirements. Specifically, space is needed on the Mall for the establishment of a child care center and an employee and visitor health unit for emergency and other care. To free space for these needs and to relieve increasingly overcrowded conditions in the A&I building, most of the Office of Personnel Administration will move to rental space in L'Enfant Plaza. This move will also improve communications and working relationships between the Office of Personnel Administration and the Office of Accounting and Financial Services on payroll and other matters of mutual concern.

For FY 1989, the Institution is funding this move through one-time reprogrammings within the Administration line-item. Total cost to the Institution for the lease of appropriate additional space at L'Enfant Plaza in FY 1990 is \$560,000. The Institution requests \$390,000 to help defray this cost and is requesting a one-time increase of \$140,000 to partially cover the costs of space preparations and other modification requirements for space reassignments at L'Enfant Plaza. The Institution's nonappropriated Trust funds will cover the remaining \$170,000 required for rent costs and \$60,000 for space modifications.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Funding of these centralized services from both appropriated and nonappropriated sources produces a ratio of Federal and Trust fund administrative support approximately in proportion to the operating program expenditures of the Institution as a whole. The amounts shown under Unrestricted General represent administrative expenditures for those units that are organizationally under Administration. Other units that receive administrative allotments appear in the appropriate section of the budget request. For example, administrative costs for the Smithsonian Astrophysical Observatory appear within its nonappropriated Trust funds section. This section also includes expenditures for producing, distributing and marketing photographic material and slide sets, and funds to help defray the costs of the Office of Printing and Photographic Services. The Office of Equal Opportunity receives a program allotment, which supports community outreach through exhibits and publications, specifically aimed at women and minorities. Funds also provide for the costs of the identification and implementation of new financial and administrative management systems. Special Purpose funds include gifts received through unrestricted bequests which in accordance with the Bylaws of the Board of Regents subsequently transfer to the endowment. Anticipated expenditures in the Special Purpose category include support of studies in ornithology, computer conversion costs, a computer cost center, and small amounts used for legal seminars, and research.

Restricted Funds - This category includes endowment bequests and foundation grants for scientific research publications and general research projects.

FACILITIES SERVICES





OFFICE OF DESIGN AND CONSTRUCTION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	37	2,165	9	358	-	14	-	-	-	-
FY 1989 -Estimate	40	2,504	9	447	-	12	-	-	-	-
-Base	40	2,567								
FY 1990 Estimate	48	2,933	9	434	-	-	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	Base FY 1989	Proposed Adjustments	Est. FY 1990
FTE Allocation.....	40	8	48
11 Personnel Compensation.....	1,769	239	2,008
12 Personnel Benefits.....	235	79	314
21 Travel.....	22	6	28
23 Rent, Communications & Utilities.....	39	20	59
24 Printing & Reproduction.....	50	-	50
25 Other Services.....	288	8	296
26 Supplies & Materials.....	40	6	46
31 Equipment.....	124	8	132
Total	2,567	366	2,933

Analysis of Increase

Necessary Pay.....	84
Program Funds.....	282

ABSTRACT - The Office of Design and Construction (ODC) provides professional architectural and engineering services to support the development, operation, maintenance, repair, and improvement of the Smithsonian's physical plant. These support services include: short- and long-range feasibility analyses, master plans, design and engineering studies, design development, contract document preparation, project management, contract administration, and preparation of cost estimates for budgets and construction. The ODC staff reviews contracts, plans interior design and space renovations, provides technical consulting support, and operates construction field offices.

The Institution requests for the Office of Design and Construction funds totaling \$282,000 and 6 workyears for management and technical costs associated with the enhancement of the Smithsonian's repairs and restoration programs. The Repairs and Restoration section of this budget request contains the justification for these funds and other administrative costs.

The Institution requires \$21,000 for Necessary Pay for existing staff funded in this line-item, along with 1.75 workyears and \$63,000 to annualize the partial year funding of seven new positions approved in the FY 1989 budget.

PROGRAM - The Office of Design and Construction staff consists of electrical, mechanical, structural, and civil engineers; architects, construction and program managers; planners, estimators, technicians, computer specialists, and administrative support positions. The main function of the Office of Design and Construction is to provide the expertise necessary to plan, design, construct, and administer a program for all construction, renovation, and repair projects for the Smithsonian buildings and museums. The buildings, museums, and research facilities serviced are primarily in the Washington metropolitan area. Other facilities serviced include: the Smithsonian Environmental Research Center near Edgewater, Maryland; the Cooper-Hewitt Museum in New York; the Astrophysical Observatory in Massachusetts; the Whipple Observatory in Arizona; and the Tropical Research Institute in Panama.

The Office's major responsibility is to administer the Repair and Restoration (R&R) and Construction programs. The R&R program preserves, repairs, rehabilitates, and corrects code violations of an aging physical plant. The ODC staff provides professional and technical support to guarantee a safe and proper environment for visitors, staff, and the National Collections. The Office also provides professional assistance to bureau managers on exhibition construction and space modification projects.

Smithsonian bureau and organization managers receive the expert services of ODC which require:

- providing program management assistance for major museums with construction, renovation and other related needs;
- preparing contract documents including: designs, specifications, and cost estimates for construction projects;
- preparing master facility plan studies and related analyses;
- planning for construction and facility development and physical plant utilization; and
- developing related budget, construction, and change order estimates for R&R and Construction Programs.

The Office maintains an extensive file system of technical specifications and drawings related to facility projects and programs which involve, with the exception of the National Zoo, all Smithsonian buildings and sites. ODC and other Smithsonian organizations use this source of information to support current and future work.

Annually, funds committed total over \$40,000,000 for various facilities and exhibition projects. These funds come from Construction, Repair and Restoration, Salaries and Expense appropriations, and Trust funds. Recent major construction, repair and restoration projects include:

- Air and Space Museum Terrace Restaurant;
- Quadrangle link to the Freer Gallery of Art;
- Additions and alterations to the Freer Gallery of Art;
- Arts and Industries building exterior renovation;
- Tupper Laboratory and Conference Center at Tropical Research Institute;
- Major Construction at Barro Colorado Island in Panama;
- Mathias Laboratory at the Environmental Research Center;
- Museum of American History exterior and interior repairs and roof replacement;
- PCB transformer replacement at all existing locations;
- Asbestos removal from various facilities; and
- Repairs, including fire protection, disabled access, health and safety improvements for various buildings and museums.

In addition to current activity, ODC planners and design professionals prepared detailed and preliminary facility requirements data and planned projects for future years. The detailed plans include the Whipple Observatory Base Camp construction and the Tropical Research Institute facility development. Preliminary construction plans include: the Silver Hill collections storage facility, Natural History Museum master plan, Museum of the American Indian planning study, and the Air and Space Museum extension site evaluation study.

During FY 1988, ODC's professional staff administered 120 construction contract services and 80 architectural and engineering service contracts. In addition, the staff reviewed 75 exhibit installation projects and supervised 50 interior design and space related projects.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The funds provide salary and partial support costs as ODC services both Trust and federally funded programs.

OFFICE OF PROTECTION SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	704	20,127	-	6	1	168	-	-	-	-
FY 1989 -Estimate	751	21,088	-	8	1	80	-	-	-	-
-Base	751	22,924								
FY 1990 Estimate	757	23,641	-	8	1	80	-	-	-	-

\* FTE = Full-time equivalent

\*\* FTP = Full-time permanent

Detail of Federal Funding

	Base FY 1989	Proposed Adjustments	Est. FY 1990
FTE Allocation.....	751	6	757
11 Personnel Compensation.....	16,777	503	17,280
12 Personnel Benefits.....	2,578	214	2,792
21 Travel.....	38	-	38
22 Transportation of Things.....	3	-	3
23 Rent, Communications & Utilities.....	30	-	30
24 Printing & Reproduction.....	10	-	10
25 Other Services.....	2,794	-	2,794
26 Supplies & Materials.....	329	-	329
31 Equipment.....	360	-	360
42 Insurance Claims & Indemnities.....	5	-	5
Total	<u>22,924</u>	<u>717</u>	<u>23,641</u>

Analysis of Increase

Necessary Pay..... 717

ABSTRACT - The Office of Protection Services (OPS) protects the visitors, staff, collections, and facilities of the Smithsonian Institution by providing guard, physical security, and medical services. The authority of OPS to provide these services derives from Public Law 82-206 and Public Law 88-391, both regarding the policing of Smithsonian buildings and grounds, and from Public Law 91-616, which relates to employee health. The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for the Office of Protection Services. The Institution requires \$612,000 for Necessary Pay for existing staff funded in this line-item, along



with 5.5 workyears and \$105,000 to annualize the partial year funding of 22 new positions approved in the FY 1989 budget.

PROGRAM - OPS is a support organization responsible for protecting the collections, facilities, and other property of the Smithsonian from damage, destruction, or loss from any cause and for creating and maintaining a safe environment for visitors and staff. This broad mission includes a responsibility to determine the protection requirements of Smithsonian facilities and to meet these requirements by operating a guard force; to procure, install, and maintain an alarm network and to respond to its signals; to install and maintain locks and other security hardware in Smithsonian facilities; to plan and provide health services for employees; to take appropriate action to eliminate health hazards from the workplace; to provide emergency medical treatment for the injuries and sudden illnesses of visitors and staff; and to investigate activity involving the physical security of property.

OPS provides security management, guard, investigative, and occupational medical services for the major Smithsonian facilities in Washington, D.C., including 14 museums and art galleries, and to the Cooper-Hewitt Museum in New York City. OPS offers technical assistance and advisory services in security matters to all Smithsonian bureaus. To accomplish its mission, OPS employs a force of security officers and a staff of administrators, training specialists, alarm systems specialists and technicians, investigators, museum security specialists, a medical officer, nurses, emergency medical technicians, and employee assistance counselors.

The security force operates twenty-four hours a day, every day of the year, to patrol and provide access control at major facilities in or near Washington, D.C. and at the Cooper-Hewitt Museum in New York City. Uniformed guards, plainclothes officers, and K-9 (canine) officers patrol both inside and the grounds around Smithsonian buildings day and night. They respond to emergencies; operate and respond to the signals of an alarm network that covers all SI facilities, including the National Zoological Park and the Smithsonian Mail Order Center in Springfield, Virginia; conduct security and fire patrols after the museum buildings close to the public; investigate accidents; report fire and safety hazards and malfunctions associated with mechanical and electrical equipment; and provide information to museum visitors. The Office coordinates protection arrangements, especially those related to VIP visits and exhibitions of international interest, with and supported by the State Department, the Secret Service, the U.S. Park Police, and other Federal and local agencies. In recent years OPS has concentrated on reducing the number of thefts committed in SI facilities. Plainclothes officers patrol areas with high crime rates, and OPS intensively trains its officers in police methods and security practices. Also, OPS thoroughly investigates reported incidents which have increased in recent years (FY 1984, 179; FY 1985, 204; FY 1986, 263; and FY 1987, 327). The number of reported incidents decreased to 279 in FY 1988.

The training of museum security officers is a specialized area in which OPS takes pride and which has gained renown in the museum community. Training staff instructs all new guards (including K-9), prepares guards for higher level officer positions, and conducts refresher courses for the force. OPS training includes internal along with outreach protection education. Over the past several years, the staff has trained K-9 teams from Fairfax and Loudoun Counties, Falls Church, Virginia; Kanawa County, West Virginia, and the Annapolis, Maryland Police Department, as well as guards and guard supervisors from Detroit Institute of Art, The Museum of New Mexico, Virginia Museum of Fine Arts, U.S. Air Force Museum, Amon Carter Museum of Art of Fort

Worth, High Museum of Art in Atlanta, National Aquarium of Baltimore, Bishop Museum of Hawaii, and others across the U. S. OPS assists the Institution's Office of Museum Programs in providing security training for small museums across the U.S. Every year OPS hosts a large museum security conference that has attracted international participants. OPS plays a leading role in improving security of cultural objects.

An expansive network of locks, alarms, and other devices is necessary to control access to and provide protection for SI facilities and property. OPS advises curators and exhibitors on appropriate security systems and plans, designs, acquires, installs, and maintains security systems in SI facilities in the Washington metropolitan area. In addition, OPS provides advice on security systems for facility, exhibit, and collection protection to SI organizations outside Washington and to museums, libraries, churches, historic sites, and corporations.

OPS developed a proprietary security system (SIPSS) to provide complete internal control of the equipment used in and the information provided by its security systems, to improve the timeliness of OPS response to the signals received from its alarms, and to control the costs associated with operating a security system. All Washington-area facilities have SIPSS installed. Changing field wiring and devices from leased telephone lines to Smithsonian owned SIPSS will continue through 1989.

OPS conducts or arranges for security management surveys to determine protection requirements of Smithsonian facilities, investigates alleged and actual violations of the law occurring on Smithsonian premises, and escorts many shipments of valuable objects to and from the Smithsonian. The investigative program resolves collection losses, thefts, and other serious internal matters. Successful resolution of collection losses and thefts requires coordination with the United States Attorney, the Department of Justice, and the court system.

OPS provides occupational medical services and counselling for Smithsonian employees and emergency first aid for employees and visitors. The medical officer, occupational health nurses, employee assistance counselors, and emergency medical technicians assist in identifying and eliminating hazardous work environments, monitor the health of employees exposed to occupational hazards, and provide first aid for on-the-job injuries of employees. Major program elements include general protection and monitoring of employees exposed to various specific hazards (e.g., asbestos, loud noise, pesticides, and other toxic chemicals); medical evaluation of individuals selected for certain hazardous jobs or for certain job duties or functions (e.g., underwater diving evaluations [124], and motor vehicle operating evaluations [23]); employee counseling to deal with substance abuse and emotional problems; routine medical treatments (e.g., allergy shots [1,058], flu shots [671], and dressing changes) requested by an employee's private physician to reduce the amount of time employees miss from work for simple health care; required immunizations for SI employees on official travel (323); and health education, major disease screening programs, and CPR (97); and first aid training for employees (149). OPS provides these occupational medical services at the Washington-area facilities and at major remote facilities as well. There were 21,456 visits to SI health units in FY 1988. This figure includes services performed by health staff during visits to the remote facilities.

The occupational medicine program has expanded rapidly since April 1983, when OPS appointed its first full-time medical officer. Occupational health units operate in NMAH, NMNH, NASM, NZP, MSC, and HMSG, and health services are available in other facilities during regular visits by health staff members. OPS has acquired new



equipment and developed a new examination program for the increasing number of employees identified as being at risk from exposure to asbestos (332 exams) and other toxic substances (154 exams), and animal parasites (102 stool exams). OPS gave audiometric examinations to employees requiring a hearing conservation program (576 exams) and provided hearing protection devices. OPS will continue to develop its current occupational health programs and will undertake additional required programs when the space needed to administer these programs becomes available. The programs expected to grow most rapidly are employee counseling, monitoring of employees exposed to toxic chemicals, health screening tests, and pre-employment physicals. There is also a need to promote all types of voluntary screening programs to increase employee participation. In FY 1988, OPS health personnel completed 4,736 screening examinations.

A staffing shortage was a major problem in FY 1988, but it has improved since OPS introduced special pay rates for occupational health nurses. A shortage of Emergency Medical Technicians remains a problem for OPS.

OPS has expanded its counseling program for employees with alcohol, drug abuse, or emotional problems which affect work performance, bringing the Institution into full compliance with the requirements of Public Law 91-616. A second certified counselor is now available to Smithsonian employees on a full-time basis. The number of referrals is increasing dramatically as the existence of this service becomes publicized more widely to employees and supervisors.

In discharging its responsibilities to ensure diving safety, OPS holds meetings with Smithsonian divers to explain the medical standards consistent with those of the American Academy of Underwater Sciences, Undersea and Hyperbaric Medical Society, and the National Oceanic and Atmospheric Administration. OPS reviews medical qualifications of those planning to dive, performs physical examinations of divers, represents SI on appropriate committees of national diving organizations, especially with regard to scientific diving, and provides liaison on medical aspects of scientific diving with Federal agencies, legislative committees, and scientific societies. The medical officer regularly visits SI research sites in the Caribbean to observe and evaluate health hazards for divers.

An outside contractor is updating the employee medical records system and will complete the extensive computerization in FY 1989. In addition, OPS is now conducting stringent inspections of all SI and NZP food service facilities and requires testing of all food handlers for tuberculosis.

#### NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds -- Allotments and reimbursements provide for the use of guard services at special events and lectures at Smithsonian facilities. These funds support the purchase of related supplies, materials, and equipment.

OFFICE OF PLANT SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1988 Actual	454	36,867	6	774	-	398	-	-	-	-
FY 1989 -Estimate	500	37,496	6	964	-	76	-	-	-	-
-Base	500	37,962								
FY 1990 Estimate	503	41,822	6	1,214	-	74	-	-	-	-

\* FTE = Full-time equivalent

\*\*FTP = Full-time permanent

Detail of Federal Funding

	Base FY 1989	Proposed Adjustments	Est. FY 1990
FTE Allocation.....	500	3	503
11 Personnel Compensation.....	13,379	172	13,551
12 Personnel Benefits.....	2,010	75	2,085
21 Travel.....	25	-	25
22 Transportation of Things.....	2	-	2
23 Rent, Communications & Utilities.....	18,895	3,613	22,508
24 Printing & Reproduction.....	4	-	4
25 Other Services.....	1,051	-	1,051
26 Supplies & Materials.....	2,132	-	2,132
31 Equipment.....	464	-	464
Total	<u>37,962</u>	<u>3,860</u>	<u>41,822</u>

Analysis of Increase

Necessary Pay.....	247
Utilities and rent.....	3,613

ABSTRACT - The Office of Plant Services (OPlantS) operates, maintains, and repairs 14 museums and art gallery buildings and a number of other work and collection storage areas located in the Washington metropolitan area and New York City. In support of research, exhibitions, education, and other public programs, OPlantS provides utilities, transportation, mail services, exhibits renovation, and other program services. OPlantS provides technical service and assistance to several Smithsonian units located outside the Washington metropolitan area. These units



include the Tropical Research Institute in Panama, the Whipple Observatory in Arizona, and the Environmental Research Center in Maryland.

The Offices of Horticulture, South Group Building Management, and Quadrangle Facility Management are a part of this line item also. The Office of Horticulture manages the Smithsonian grounds and provides horticultural assistance to Smithsonian bureaus. A greenhouse-nursery supports the horticultural needs of the Smithsonian. Lectures, seminars, and horticultural exhibitions constitute educational outreach. South Group Building Management offers a full range of maintenance services for the Arts and Industries and Smithsonian Institution Buildings. Quadrangle Facility Management offers a variety of administrative and maintenance support services for the Arthur M. Sackler Gallery, the National Museum of African Art, and the S. Dillon Ripley Center, located in the Quadrangle complex.

The Smithsonian is not seeking additional funds for FY 1990 programmatic increases for this line-item. The Institution requires \$155,000 for Necessary Pay for existing staff funded in this line-item, along with 3.25 workyears and \$92,000 to annualize the partial year funding of 13 new positions approved in the FY 1989 budget.

An increase of \$3,613,000 justified in the Uncontrollable Increases section of this budget will support the Institution's utilities and rent.

PROGRAM - I. The Office of Plant Services - The Office of Plant Services operates, maintains, and repairs over 5.1 million net usable square feet in museums and art galleries in Washington, D. C. and New York City. The Office provides maintenance of building interiors and exteriors; elevators, escalators, mechanical and electrical equipment; and lighting and refrigeration components, as well as oversight of emergency property repairs accomplished by service contracts. Trade and craft support includes plumbing, electrical, woodcrafting, and plastering efforts. In addition to furthering research projects and office relocations and modifications, OPlantS provides these services to support exhibition installations and public events throughout all Smithsonian facilities.

The automated Facility Monitoring System continually analyzes and controls mechanical equipment throughout the Institution. This system monitors areas of buildings requiring stable humidity and temperature control and alerts a control center when deviations from normal conditions occur. Because this automated system identifies abnormalities so quickly, immediate adjustments allow the Smithsonian to avoid costly repairs and prevent damage to the collections. The automated Preventive Maintenance System ensures increased reliability, decreased repair costs, and longer life, by scheduling regular preventive maintenance on building operating systems. This system schedules preventive maintenance for fire prevention systems, guard stations, and automatic lighting, as well as roofing systems and heating, ventilating, and air conditioning systems in all museums and the Environmental Research Center.

The Office maintains and operates a supply warehouse to stock and distribute frequently used supplies and materials. To obtain the best prices, OPlantS purchases materials in bulk and stores them for future distribution. In addition to supporting office relocations and modifications, OPlantS offers packing, crating, warehousing, and moving services for museum objects and collections. The Office also provides a full range of transportation services for the Institution, as well as mail services and postage monitoring.

In FY 1988, OPlantS continued providing program support to museums and other Smithsonian organizations. This support included: preparing halls for new exhibitions; renovating office space to accommodate changing program needs; and installing additional automated exhibit lighting systems. The building inspection program continued to ensure that OPlantS personnel identified and promptly attended to facility repair needs. Automated equipment continued monitoring temperature and humidity conditions in major museums; the Institution installed fire detection and suppression systems; and occupancy of the Quadrangle took place.

Significant accomplishments in FY 1988 include providing trade and craft services such as electrical, plumbing, machine, woodcrafting, and painting in support of more than 80 exhibit projects. Notable among these were: "King Herod's Dream" and "Crossroads of Continents" at the Natural History Museum; "Tropical Rainforests" at the International Gallery in the Quadrangle; "Different Drummer" at the Hirshhorn Museum; and "Clay Revisions" at the Renwick. Other exhibits supported by OPlantS were "Frank Lloyd Wright" at the American History Museum; "Aerospace Computing" at the Air and Space Museum; and "Portraits From Gripsholm" and "The Artist's Mother" at the Portrait Gallery.

II. The Office of Horticulture - The Office of Horticulture (OH) applies the discipline of horticulture in educational, scientific, research, exhibition, and display activities throughout the Smithsonian. There are more than 100,000 plants and artifacts in OH's collections and much of the plant material is used in Smithsonian museum interior and exterior displays. Garden furnishings from the collections and plants propagated and grown at the Smithsonian greenhouse-nursery are also used in landscape design. Grounds management personnel install and maintain the plants. OH units extensively use sources within the Horticulture Branch Library to support these programs. Exterior pest control, removal of trash from the gardens, and snow and ice removal are also the responsibility of this Office.

The Smithsonian Women's Committee contributed funds for the preparation of the east garden beside the Arts and Industries building. The Smithsonian dedicated this area on May 25, 1988 to honor Mary Livingston Ripley, for her contributions to the Smithsonian and as the founder of the Women's Committee. These funds included a stipend for an intern for three months to assist in planning the Mary Livingston Ripley Garden.

In FY 1988, the Office of Product Development and Licensing (OPDL) selected artifacts from the OH collections for reproduction and marketing. OPDL selected cast iron and cast aluminum furniture, and in 1988, Brown Jordan, a major American furniture manufacturer, introduced "The Smithsonian Collection." This Collection includes two patterns, "Day Lily" and "Fern Leaf," to be produced in cast aluminum, and the "Palm Court" pattern fabricated in wicker and based on a design documented in the Smithsonian Institution Archives Center.

The OH participated in the 1988 Philadelphia Flower Show and won the Pennsylvania Horticulture Society's Emile H. Geshick Memorial Award. The exhibit featured 250 orchids, 150 tropical plants, and cast iron artifacts from the OH collections. The theme of the exhibit was the Horticultural Hall on the grounds of the 1876 Centennial Exposition in Philadelphia. The backdrop of this exhibition was a 12' x 50' photographic reproduction of the Hall (enlarged from a stereograph view in the OH collection).

With the Smithsonian Institution Traveling Exhibition Service, the OH researched and designed an exhibition entitled "Victorian Gardens: A Horticultural Extravaganza." This exhibition traces horticulture's rise between the years 1835 to 1900 to "its paramount place in commerce, landscape design, the decorative arts, and costume." This exhibition will visit 15 cities during the next three years.

The OH provides and cares for plant material in all the local Smithsonian museums for use in exhibitions and special events. In FY 1988, various exhibitions used over 2,400 plants. These exhibitions included "Indian Terra Cotta," "Chinese Scholars Studio," "Tropical Rainforest," "Frank L. Wright House," and "Russian and Soviet Paintings, 1900-1930."

The Office of Horticulture's exhibition, "Native American Flora," a salute to former First Lady, Lady Bird Johnson, opened on April 29, 1988 in the Arts & Industries Building. This exhibition focused on the preservation, conservation, and landscape use of wild flowers and included some 100 species of native plants.

OH mounted the 12th annual "Trees of Christmas" exhibition in the National Museum of American History. Unusual, handcrafted ornaments were on all 12 trees. OH based the selection on appropriateness of theme, execution of design, and quality of construction. All of these ornaments became part of the OH collections at the conclusion of the exhibition.

The opening of the Enid A. Haupt and the Mary Livingston Ripley Gardens has prompted requests for guided tours. In response to this demand, the OH has organized a docent program and has trained ten docents. Two interns worked at OH during FY 1988. One assisted with historic research on 19th century horticulture for the "Victorian Gardens" traveling exhibition, and the other drafted and completed a detailed rendering of the Enid A. Haupt Garden.

Frances Jones Poetker donated a collection of some 250 American and European 19th- and early 20th-century hand bouquet-holders. Other gifts include a unique, late 19th-century serpentine cast iron settee from Mrs. Horace Peters. This bench has special significance because of its rare, excellent condition, sophisticated design, provenance, and manufacturer.

III. South Group Building Management - The South Group Building Management is responsible for cleaning, minor maintenance, labor services, lamping, craft services, shipping and receiving, and special events. This Office contracts for and coordinates maintenance, trash removal, pest control, and renovation projects for the Arts and Industries and Smithsonian Institution Buildings.

IV. The Office of Quadrangle Facility Management - The Office of Quadrangle Facility Management provides a wide variety of support services to the Education Center of the S. Dillon Ripley Center, Museum of African Art, Arthur M. Sackler Gallery, Resident Associates Program, National Associates Program, Smithsonian Institution Traveling Exhibition Service, and the International Center. These services include space-scheduling, custodial, labor, rigging, minor maintenance, lamping, shipping and receiving, and other related services. The automated scheduling and maintenance program greatly enhances the reliability and effectiveness of housekeeping, public events, and related support services.



NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Allotments provide Unrestricted Trust funds to cover salaries and support costs in the Office of Plant Services. These allotments also provide the Trust fund share of space rental costs for administrative activities located at L'Enfant Plaza. Reimbursements from Trust-funded client organizations provide Special Purpose funds for support services offered by OPlantS. These funds purchase supplies, services, equipment, and landscaping materials.







FY 1990 Budget Justification  
to Congress

FY 1989 APPROPRIATION  
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(Dollars in Thousands)	FY 1989 CONGRESSIONAL APPROPRIATION	WITHIN GRADE	TWO LESS PAYDAYS	NEW HIRE LAPSE	GRADE TARGET REDUCTION	FERS/HEALTH/SAO /1	REPRO-GRAMMINGS	REVISED FY 1989 APPROPRIATION
RESEARCH								
Assistant Secretary for Research	1,229	(14)	(1)	0	(2)	16	(23) /3	1,205
Astrophysical Observatory	10,416	(101)	(2)	(49)	(13)	470	0	10,721
Smithsonian Tropical Research Institute	5,716	(56)	(1)	(10)	(4)	93	0	5,738
Smithsonian Environmental Research Center	1,413	(13)	0	0	(1)	19	0	1,418
National Zoological Park	13,840	(178)	(4)	(79)	(10)	347	132 /4	14,048
Smithsonian Institution Archives	644	(9)	0	0	(1)	17	(51) /5	600
Smithsonian Institution Libraries	5,054	(53)	(1)	(5)	(5)	138	33 /6	5,161
Major Scientific Instrumentation	1,206	0	0	0	0	0	0	1,206
Subtotal	39,518	(424)	(9)	(143)	(36)	1,100	91	40,097
MUSEUMS								
Assistant Secretary for Museums /2	1,611	(14)	0	0	(2)	38	0	1,633
National Museum of Natural History	26,009	(319)	(7)	(129)	(38)	716	60 /7	26,292
National Air and Space Museum	9,497	(124)	(3)	(38)	(11)	231	0	9,552
National Museum of American History	14,512	(192)	(4)	(35)	(21)	442	0	14,502
National Museum of American Art	5,297	(63)	(1)	(9)	(7)	247	0	5,464
National Portrait Gallery	4,068	(49)	(1)	(9)	(5)	127	0	4,131
Hirshhorn Museum and Sculpture Garden	3,409	(39)	(1)	0	(3)	91	0	3,457
Arthur M. Sackler Gallery/Freer Gallery of Art	4,242	(36)	(1)	0	(4)	99	0	4,300
Archives of American Art	1,100	(13)	(1)	(7)	(2)	23	0	1,101
Cooper-Hewitt Museum	1,193	(16)	0	(9)	(1)	51	27 /8	1,245
National Museum of African Art	3,535	(29)	(1)	(16)	(2)	81	0	3,568
Anacostia Museum	1,016	(10)	0	(13)	(1)	18	0	1,010
Conservation Analytical Laboratory	2,456	(26)	(1)	0	(4)	94	0	2,519
Office of Exhibits Central	1,882	(25)	(1)	0	(2)	46	0	1,900
Smithsonian Traveling Exhibition Service	667	(8)	0	0	(1)	30	0	688
Subtotal	80,294	(963)	(21)	(265)	(104)	2,334	87	81,362
PUBLIC SERVICE								
Assistant Secretary for Public Service	1,294	(17)	(1)	0	(2)	24	0	1,298
Smithsonian Institution Press	1,226	(19)	(1)	0	(2)	35	0	1,239
Subtotal	2,520	(36)	(2)	0	(4)	59	0	2,537
INTERNATIONAL ACTIVITIES /9	884	(8)	0	0	0	62	(147) /10	791
SPECIAL PROGRAMS								
American Studies and Folklife Programs	912	(8)	0	(9)	(1)	14	0	908
International Environmental Science Program	1,093	(4)	0	0	0	17	0	770
Academic and Educational Programs	4,419	(13)	0	(7)	(2)	71	28 /11	1,170
Museum Support Center	7,181	(18)	0	(24)	0	42	0	4,419
Subtotal	7,181	(43)	0	(40)	(3)	144	28	7,267





(Dollars in Thousands)	UNIT	FY 1989				REPRO-		REVISED	
		CONGRESSIONAL APPROPRIATION	WITHIN GRADE	TWO LESS PAYDAYS	NEW HIRE LAPSE	GRADE REDUCTION	FERS/HEALTH/SAO /1	GRAMMINGS	FY 1989 APPROPRIATION
	ADMINISTRATION	21,362	(209)	(4)	(268)	161	(2,785)	(159) /12	18,098
	FACILITIES SERVICES								
	Office of Design and Construction	2,620	(30)	(1)	(63)	(5)	33	(50) /13	2,504
	Office of Protection Services	20,717	(275)	(6)	(105)	(5)	762	0	21,088
	Office of Plant Services	37,168	(242)	(5)	(92)	(4)	521	150 /14	37,496
	Subtotal	60,505	(547)	(12)	(260)	(14)	1,316	100	61,088
	Within Grades	(2,230)	2,230	48					0
	Two less paydays	(48)							0
	Lapse	(976)			976				0
	FERS/Health/SAO Equipment	2,230					(2,230)		0
	GRAND TOTAL	211,240	0	0	0	0	0	0	211,240

- /1 DISTRIBUTION OF FUNDS APPROPRIATED BY THE CONGRESS FOR SAO COMPUTER EQUIPMENT AND INCREASED COSTS RELATED TO HEALTH INSURANCE PREMIUMS AND THE FEDERAL EMPLOYEES' RETIREMENT SYSTEM.
- /2 INCLUDED WITHIN THIS LINE ITEM IS \$500,000 TO CONTRACT WITH THE CAPITAL CHILDREN'S MUSEUM FOR A NATIONAL EDUCATIONAL OUTREACH PROGRAM.
- /3 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION TO THE NATIONAL MUSEUM OF NATURAL HISTORY, ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, AND ONE POSITION TO THE NATIONAL SCIENCE RESOURCE CENTER.
- /4 REFLECTS THE PERMANENT TRANSFERS OF: TWO POSITIONS FROM INTERNATIONAL ACTIVITIES AND ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY.
- /5 REFLECTS THE TRANSFER OF APPROPRIATED FUNDS FOR RENT COSTS TO THE CENTRAL RENTAL ACCOUNT.
- /6 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION TO THE COOPER-HEWITT MUSEUM, TWO POSITIONS FROM THE OFFICE OF PUBLICATIONS EXCHANGE, AND ONE POSITION FROM INTERNATIONAL ACTIVITIES.
- /7 REFLECTS PERMANENT TRANSFER OF ONE POSITION TO THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /8 REFLECTS PERMANENT TRANSFER OF ONE POSITION FROM THE SMITHSONIAN INSTITUTION LIBRARIES.
- /9 INCLUDES FUNDING OF \$125,000 FOR COUNCIL OF OVERSEAS RESEARCH CENTERS.
- /10 REFLECTS PERMANENT TRANSFERS OF: TWO POSITIONS TO THE NATIONAL ZOOLOGICAL PARK AND THREE POSITIONS TO THE SMITHSONIAN INSTITUTION LIBRARIES.
- /11 REFLECTS PERMANENT TRANSFER OF ONE POSITION FROM THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /12 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION TO THE NATIONAL ZOOLOGICAL PARK, ONE POSITION TO THE AS MANDATED BY CONGRESS, ONE POSITION FOR RESEARCH, AND APPROPRIATED FUNDS FOR INCREASED RENT COSTS FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY AND THE OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT TO THE CENTRAL RENTAL ACCOUNT.
- /13 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS TO CENTRAL RENTAL ACCOUNT.
- /14 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS FOR RENT COSTS TO S.I. ARCHIVES, OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT, AND THE OFFICE OF DESIGN AND CONSTRUCTION TO THE CENTRAL RENTAL ACCOUNT.





A.S. Research  
 to NINNH  
 from ORB  
 to NSRC  
 from DEMS

211 (601)  
 1 28  
 111 (281)  
 1 37  
 111 (223)

===== FY 1989 APPROPRIATION =====

FY 1990 Budget Justification  
 to Congress  
 Detailed Back-up Info  
 mpr

UNIT	FY 1989 CONGRESS APPROPRIATION										FY 1989 REVISED APPROPRIATION						
	Round	FTE	DOLLARS	W/in	LESS PAIDAYS	NEW HIRE LAPSE	GRADE TARGET	FERS	FERS/HEALTH/SAP	REPROGRAMMING	FTE	Round	DOLLARS				
RESEARCH																	
Assistant Secretary for Research	31	29	1,229	(14)	(1)	0.00	(2)	4	0	12	16	0	0.00	(23)/3	31	29	1,205
--Immediate Office	26	24	1,014	(11)	(1)	0.00	(1)	0	0	8	8	0	0.00	(23)	26	24	966
--Joseph Henry Papers	5	5	215	(3)	0	0.00	(1)	4	0	4	8	0	0.00	(23)	5	5	219
Astrophysical Observatory	99	108	10,416	(101)	(2)	(0.75)	(13)	150	250	70	470	0	0.00	0	99	107	10,721
Tropical Research Institute	124	125	5,716	(56)	(1)	(0.50)	(4)	15	39	39	93	0	0.00	0	125	125	5,728
SERC - Edgewater	28	29	1,413	(13)	0	0.00	(1)	9	0	10	19	0	0.00	0	28	29	1,418
National Zoological Park	348	342	13,840	(178)	(4)	(2.50)	(10)	179	42	126	347	3	3.00	132/4	351	343	14,048
Smithsonian Institution Archives	13	15	644	(9)	0	0.00	(1)	11	0	6	17	0	0.00	(51)/5	13	15	600
Smithsonian Institution Libraries	106	99	5,054	(53)	(1)	(0.25)	(5)	66	35	37	138	2	2.00	33/6	108	101	5,161
Major Scientific Instrumentation	0	0	1,206	0	0	0.00	0	0	0	0	0	0	0.00	0	0	0	1,206
Subtotal	749	747	39,518	(424)	(9)	(4.00)	(36)	434	366	300	1,100	6	6.00	91	755	749	40,097
MUSEUMS																	
Assistant Secretary for Museums /2	21	24	1,611	(14)	0	0.00	(2)	28	0	10	38	0	0.00	0	21	24	1,633
--Immediate Office	9	9	1,062	(6)	0	0.00	(1)	5	0	4	9	0	0.00	0	9	9	1,064
--Office of Museum Programs	9	12	412	(6)	0	0.00	(1)	14	0	4	18	0	0.00	0	9	12	423
--Office of the Registrar	3	3	137	(2)	0	0.00	0	9	0	2	11	0	0.00	0	3	3	146
National Museum of Natural History	549	574	26,009	(319)	(7)	(4.50)	(38)	344	147	225	716	1	1.00	60/7	550	570	26,292
National Air and Space Museum	225	216	9,497	(124)	(3)	(1.00)	(11)	145	0	86	231	0	0.00	0	225	215	9,552
National Museum of American History	312	335	14,312	(192)	(4)	(1.25)	(21)	270	35	137	442	0	0.00	0	312	334	14,502
National Museum of American Art	108	119	5,297	(63)	(1)	(0.25)	(7)	127	77	43	247	0	0.00	0	108	119	5,464
--American Art	89	102	4,789	(56)	(1)	(0.25)	(7)	109	77	39	225	0	0.00	0	89	102	4,941
--1/2 Bldg. Mgr.	19	17	508	(7)	0	0.00	0	18	0	4	22	0	0.00	0	19	17	523
National Portrait Gallery	79	87	4,068	(49)	(1)	(0.25)	(5)	59	35	33	127	0	0.00	0	79	87	4,131
--Portrait Gallery	61	71	3,559	(42)	(1)	(0.25)	(5)	42	35	29	106	0	0.00	0	61	71	3,608
--1/2 Bldg. Mgr.	18	16	509	(7)	0	0.00	0	17	0	4	21	0	0.00	0	18	16	523
Hirshhorn Museum and Sculpture Gdn	80	78	3,409	(39)	(1)	0.00	(3)	62	0	29	91	0	0.00	0	80	78	3,457
Center for Asian Art	67	68	4,242	(36)	(1)	0.00	(4)	38	0	24	99	0	0.00	0	67	68	4,300
--Freer Gallery of Art	30	30	1,608	(17)	0	0.00	(2)	13	0	12	50	0	0.00	0	30	30	1,639
--Sackler Gallery	37	38	2,634	(19)	(1)	0.00	(2)	37	0	12	49	0	0.00	0	37	38	2,661
Archives of American Art	20	20	1,193	(13)	0	(0.25)	(2)	13	0	10	23	0	0.00	0	20	20	1,101
Cooper-Hewitt Museum	24	31	1,193	(16)	0	(0.25)	(2)	39	0	12	51	1	1.00	27/8	25	31	1,245
National Museum of African Art	58	58	3,535	(29)	(1)	(0.50)	(2)	60	0	21	81	0	0.00	0	58	57	3,568
Anacostia Museum	21	21	1,016	(10)	0	(0.50)	(1)	12	0	6	18	0	0.00	0	21	20	1,010
Conservation Analytical Laboratory	44	41	2,456	(26)	(1)	0.00	(4)	34	42	18	94	0	0.00	0	44	41	2,519
Office Exhibits Central	49	46	1,882	(25)	(1)	0.00	(2)	28	0	18	46	0	0.00	0	49	46	1,900
Travelling Exhibition Service	14	15	667	(8)	0	0.00	(1)	24	0	6	30	0	0.00	0	14	15	688
Subtotal	1,671	1,733	80,294	(963)	(21)	(8.75)	(104)	1,320	336	678	2,334	2	2.00	87	1,673	1,726	81,362



(50000s)

UNIT  
CONGRESSL APPROPRIATION  
FY 1989  
Round  
FTP FTE OLLARS  
W/in GRADE  
TWO LESS PAYDAYS  
NEW HIRE LAPSE  
GRADE TARGET REDUCTION  
FERS/HEALTH/SAO  
FERS Ollars Health \* TOTAL  
/1  
REPROGRAMMINGS  
FY 1989 APPROPRIATION  
Round  
FTP FTE OLLARS

UNIT	CONGRESSL APPROPRIATION	FY 1989	Round	FTP FTE	OLLARS	W/in GRADE	TWO LESS PAYDAYS	NEW HIRE LAPSE	GRADE TARGET REDUCTION	FERS/HEALTH/SAO	FERS Ollars Health * TOTAL	/1	REPROGRAMMINGS	FY 1989 APPROPRIATION	Round	FTP FTE	OLLARS	
PUBLIC SERVICE																		
Assistant Secretary for Public Svc		24	23	1,294	(17)	(11)	0.00	0	(2)	10	0	14	24	0	0.00	0	24	23,000
--Immediate Office		4	4	241	(4)	0	0.00	0	0	0	0	2	2	0	0.00	0	4	4,000
--Telecommunications		5	5	236	(4)	0	0.00	0	(1)	0	0	4	4	0	0.00	0	5	5,000
--VIARC		2	2	179	(1)	0	0.00	0	0	0	0	2	2	0	0.00	0	2	2,000
--Public Affairs		13	12	638	(8)	(1)	0.00	0	(1)	10	0	6	16	0	0.00	0	13	12,000
Smithsonian Institution Press		30	29	1,226	(19)	(1)	0.00	0	(2)	18	0	17	35	0	0.00	0	30	29,000
Subtotal		54	52	2,520	(36)	(2)	0.00	0	(4)	28	0	31	59	0	0.00	0	54	52,000

INTERNATIONAL ACTIVITIES /9

--Immediate Office		0	2	99	(2)	0	0.00	0	0	0	0	0	0	(2)	(2.00)	(87)	(2)	0.00
--Division of Programs		0	0	50	0	0	0.00	0	0	0	35	0	35	0	0.00	0	0	0.00
--International Center		2	2	397	0	0	0.00	0	0	2	0	2	25	(1)	(1.00)	(17)	1	1,000
--Service and Protocol		5	5	221	(4)	0	0.00	0	0	0	0	0	2	(1)	(1.00)	(4)	4	4,000
--Publications Exchange		2	2	44	(1)	0	0.00	0	0	0	0	0	0	(2)	(2.00)	(43)	0	0.00
--Special foreign Currency Adm'n.		2	2	73	(1)	0	0.00	0	0	0	0	0	0	0	0.00	0	2	2,000
Subtotal		11	13	884	(8)	0	0	0	0	2	60	0	62	(6)	(6)	(147)	10	7,000

---Cultural PROGRAMS

American and folklife Programs		7	10	912	(8)	0	(0.50)	(9)	(1)	8	0	6	14	0	0.00	0	7	9,500
--American Studies		2	2	107	(2)	0	0.00	0	0	0	0	2	2	0	0.00	0	2	2,000
--Folklife Programs		5	8	805	(6)	0	(0.50)	(9)	(1)	8	0	4	12	0	0.00	0	5	7,500
Internt'l Environmental Science Pgm		2	13	757	(4)	0	0.00	0	0	15	0	2	17	0	0.00	0	2	13,000
Academic & Educational Programs		21	23	1,093	(13)	0	(0.25)	(7)	(2)	17	0	10	71	1	1.00	28	22	23,775
--Office of Fellowships and Grants		7	9	351	(5)	0	0.00	0	(1)	8	0	4	12	0	0.00	0	7	9,000
--Office of Interdisciplinary Studies		3	3	118	(1)	0	0.00	0	0	0	0	4	4	0	0.00	0	3	3,000
--Elementary and Secondary Education		7	7	396	(5)	0	0.00	0	(1)	9	0	4	13	0	0.00	0	7	7,000
--National Science Resource Center		4	4	228	(2)	0	(0.25)	(7)	0	0	0	2	2	1	1.00	28	5	4,775
Museum Support Center		36	42	4,419	(18)	0	(1.50)	(26)	0	30	0	12	42	0	0.00	0	36	40,500
--Equipment		0	0	3,058	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0.00
--Operations		36	36	992	(12)	0	0.00	0	0	20	0	8	28	0	0.00	0	36	36,000
--Move		0	6	369	(6)	0	(1.50)	(24)	0	10	0	4	14	0	0.00	0	0	4,500
Subtotal		66	88	7,181	(43)	0	(2.25)	(40)	(3)	70	44	30	144	1	1.00	28	67	86,775

7 9 908

2 2 107

7 7 801

13 13 770

24 24 1,170

9 9 357

3 3 161

5 5 249

41 41 4,419

0 0 3,058

36 36 1,008

5 5 353

7 7 791





UNIT	FY 1989 CONGRESS APPROPRIATION										FY 1989 REVISED APPROPRIATION			
	Round	FTE	DOLLARS	W/in GRADE	TWO LESS PAVOAYS	NEW HIRE LAPSE FTE DOLLARS	GRADE TARGET REDUCTION	FERS	HEALTH/SKO	REPROGRAMMING	FTE	FTE	DOLLARS	
ADMINISTRATION														
--Office of the Secretary	6	6	307	(4)	0	0.00	(1)	0	4	0	6	6.00	6	306
--Secretary's Files	4	4	119	(2)	0	0.00	0	0	2	0	4	4.00	4	119
--Office of the Under Secretary	1	1	65	(1)	0	0.00	0	0	0	0	1	1.00	1	64
--Office of Audits and Investigations	14	13	629	(14)	0	(0.25)	(2)	20	7	0	14	12.75	13	631
--Office of the General Counsel	10	10	604	(9)	0	0.00	(1)	7	7	0	10	10.00	10	608
--Office of the Treasurer	1	1	34	(1)	0	0.00	0	0	0	0	1	1.00	1	33
--Financial Management and Planning	4	4	618	(4)	0	0.00	(1)	0	2	0	5	5.00	5	700
--Accounting and Financial Services	35	33	1,856	(15)	0	(1.50)	(2)	10	10	0	35	31.50	32	1,834
--Asst. Secy. for Administration	2	2	198	(2)	0	0.00	0	0	2	0	2	2.00	2	198
--Office of Equal Opportunity	7	7	348	(5)	0	0.00	0	0	4	0	7	7.00	7	347
--Office of Special Events	2	2	68	(1)	0	0.00	0	2	0	0	2	2.00	2	69
--Office of the Congressional Liaison	3	3	161	(3)	0	0.00	0	10	0	0	3	3.00	3	170
--Office of Personnel Administration	53	55	2,113	(42)	0	(1.25)	(4)	20	31	0	53	53.75	54	2,080
--Management Analysis Office	11	10	516	(8)	0	0.00	(1)	2	6	0	11	10.00	10	515
--Travel Services Office	2	2	70	(1)	0	0.00	0	0	2	0	2	2.00	2	71
--Office of Procurement and Property Mgmt.	39	36	1,773	(17)	0	(2.50)	(2)	4	12	0	39	33.50	33	1,642
--Printing and Photographic Services	42	39	1,775	(21)	(1)	0.00	(1)	18	14	0	42	39.00	39	1,762
--Office of Planning and Budget	9	9	425	(5)	0	0.00	(1)	0	4	0	8	10.00	10	395
--Office of Information Resources Mgmt.	49	46	2,755	(30)	(1)	(0.50)	(5)	10	21	(1)	48	44.50	44	2,651
--Workers' Compensation	0	0	881	0	0	0.00	0	0	0	0	0	0.00	0	881
--Unemployment Compensation	0	0	398	0	0	0.00	0	0	0	0	0	0.00	0	398
--Director, Otc. of Facilities Services	8	9	485	(6)	0	(0.25)	(1)	8	4	0	8	8.75	9	479
--Architect, Hist. and Hist. Preservation	5	5	220	(3)	0	(0.25)	(7)	6	2	0	5	4.75	5	218
--Environmental Mgmt and Safety Programs	29	32	1,751	(15)	0	(2.00)	(3)	25	10	(2)	27	28.00	28	1,599
--FERS	0	0	3,381	0	0	0.00	0	0	0	0	0	0.00	0	0
--Grade Target Reduction	0	0	(186)	0	0	0.00	186	0	0	0	0	0.00	0	0
--Unallocated Account (Affirmative Action)	0	0	0	0	0	0.00	0	0	308	0	0	0.00	0	308
Subtotal	336	331	21,362	(209)	(4)	(8.50)	161	(3,237)	308	144	333	319.50	320	18,098

Dem's  
 to NZP <11> <45>  
 to A.S. Research <11> <37>  
 to Child. Health Act <20> <9>  
 <22> <91>



(\$000s)

FY 1989

REVISED  
FY 1989 APPROPRIATION

UNIT	CONGRESS APPROPRIATION										REPROGRAMMINGS		FY 1989 APPROPRIATION								
	FIP	FIE	Round	DOLLARS	W/In	TWO	NEW	GRADETARGET	FERS	FERS/HEALTH/SAO	FIP	FIE	FIP	FIE	Round	DOLLARS					
Office of Design and Construction	45	42		2,620	(30)	(1)	(1.75)	(63)	(5)	12	0	21	33	0	0.00	(50)/13	45	40.25	40	2,504	
Office of Protection Services	753	757		20,717	(275)	(6)	(5.50)	(105)	(5)	563	0	199	762	0	0.00	0	753	751.50	751	21,088	
Office of Plant Services	512	503		37,168	(242)	(5)	(3.25)	(92)	(4)	346	0	175	521	0	0.00	150	512	499.75	500	37,496	
--Immediate Office	390	372		14,717	(188)	(4)	(3.25)	(92)	(3)	237	0	139	376	0	0.00	0	390	368.75	369	14,806	
--Utilities	0	0		16,756	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0.00	0	16,756	
--Rent	0	0		1,894	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0.00	0	2,034	
--Building Manager, South Group	41	41		1,110	(16)	0	0.00	0	0	36	0	12	48	0	0.00	150/14	41	41.00	41	1,142	
--Horticulture	37	46		1,705	(23)	(1)	0.00	0	(1)	36	0	14	50	0	0.00	0	37	46.00	46	1,730	
--Building Manager, Quadrangle	44	44		996	(15)	0	0.00	0	0	37	0	10	47	0	0.00	0	44	44.00	44	1,028	
Subtotal	1,310	1,302		60,505	(547)	(12)	(10.50)	(260)	(14)	921	0	395	1,316	0	0.00	100	1,310	1,291.50	1,291	61,088	
Within Grades				(2,230)																	
Two less paydays				(48)		48															
Lapse				(34)																	
FERS/Health/SAO Equipment				2,230						462 (1,114)(1,578) (2,230)											
GRAND TOTAL, SMITHSONIAN INSTITUTION	4,197	4,266		211,240	0	0	0	0	0	0	0	0	0	0	0.00	0	4,197	4,231.75	4,232	211,240	

- /1 DISTRIBUTION OF FUNDS APPROPRIATED BY THE CONGRESS FOR SAO COMPUTER EQUIPMENT AND INCREASED COSTS RELATED TO HEALTH INSURANCE PREMIUMS AND THE FEDERAL EMPLOYEES' RETIREMENT SYSTEM. → *CAORC*
- /2 INCLUDED WITHIN THIS LINE ITEM IS \$500,000 TO CONTRACT WITH THE CAPITAL CHILDREN'S MUSEUM FOR A NATIONAL EDUCATIONAL OUTREACH PROGRAM.
- /3 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION TO THE NATIONAL MUSEUM OF NATURAL HISTORY, ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, AND ONE POSITION TO THE NATIONAL SCIENCE RESOURCE CENTER
- /4 REFLECTS THE PERMANENT TRANSFERS OF: TWO POSITIONS FROM INTERNATIONAL ACTIVITIES AND ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY.
- /5 REFLECTS THE TRANSFER OF APPROPRIATED FUNDS TO CENTRAL RENTAL ACCOUNT.
- /6 REFLECTS PERMANENT TRANSFER OF: ONE POSITION TO THE COOPER-HEWITT MUSEUM, TWO POSITION FOR THE OFFICE OF PUBLICATIONS EXCHANGE, AND ONE POSITION FROM INTERNATIONAL ACTIVITIES.
- /7 REFLECTS PERMANENT TRANSFER OF ONE POSITION TO THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /8 REFLECTS PERMANENT TRANSFER OF ONE POSITION FROM THE SMITHSONIAN INSTITUTION LIBRARIES.
- /9 INCLUDES FUNDING OF \$125,000 FOR COUNCIL OF OVERSEAS RESEARCH CENTERS.
- /10 REFLECTS PERMANENT TRANSFERS OF: TWO POSITIONS TO THE NATIONAL ZOOLOGICAL PARK AND THREE POSITIONS TO THE SMITHSONIAN INSTITUTION LIBRARIES.
- /11 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION FROM THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /12 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION FROM THE OFFICE OF INFORMATION RESOURCE MANAGEMENT TO THE OFFICE OF FINANCIAL MANAGEMENT AND PLANNING AS HANDOVED BY CONGRESS, ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION TO THE NATIONAL ZOOLOGICAL PARK, ONE POSITION TO THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH, AND APPROPRIATED FUNDS FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY AND THE OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT TO THE CENTRAL RENTAL ACCOUNT.
- /13 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS TO CENTRAL RENTAL ACCOUNT.
- /14 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS TO S-1, ARCHIVES, OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT, AND THE OFFICE OF DESIGN AND CONSTRUCTION TO THE CENTRAL RENTAL ACCOUNT.

SIA \$151  
 OEMS 9  
 OPRM 40  
 OBC 50  
 \$150





CONSTRUCTION AND IMPROVEMENTS  
NATIONAL ZOOLOGICAL PARK

1988 Appropriation.....	\$8,150,000
1989 Appropriation.....	\$5,305,000
1990 Estimate.....	\$6,500,000

Appropriations to this account provide funding for:

- repairs, alterations, and improvements to plant property;
- additions to existing facilities and minor new facilities including exhibits;
- plans and specifications for construction; and
- renovation, restoration, and construction of new facilities outlined in the Master Plan initially approved in FY 1973 by the Commission of Fine Arts and the National Capital Planning Commission.

The Zoo complex includes 163 acres in the Rock Creek Valley of Washington, D.C., and a 3,150-acre Conservation and Research Center located at Front Royal, Virginia. The Zoo contracts for most construction and improvement projects. If contractors' estimates are above acceptable cost levels, a more economical alternative is to hire permanent or temporary labor to accomplish the work. The account also funds related expenses such as relocating animals due to facility construction and major grounds maintenance resulting from storm damage.

Status of the Construction Program - By virtue of its 1889 charter, the National Zoological Park endeavors to "administer and improve" the Zoo for "the advancement of science and instruction and recreation of the people" (20 U.S.C. 81). The Zoo administers two permanent facilities. Since 1890 the center of the exhibition and public educational functions rests in the Rock Creek Valley portion of the National Zoological Park, while the conservation, research, and breeding functions occur both at Rock Creek and at the Conservation and Research Center. Since 1975, the Conservation Research Center has been the primary Zoo site to save threatened and endangered animal species.

The National Zoo's Rock Creek Facilities undergo major renovations and improvements through implementation of the Master Plan. The Congress appropriated a total of \$53,330,000 over the past 16 years (FY 1974 - FY 1989) to provide new or rebuilt exhibits and for facilities conforming to the Master Plan. In November 1986, a revised Master Plan incorporated changes in exhibit concepts. Implementation of the revised Master Plan will place the Park among the world's finest zoos.

Master Plan Construction

Aquatic Habitats - Phase II (Amazonia Exhibit) \$4,500,000 - The Amazon is the most diverse freshwater habitat in the world in species numbers, hydrology and ecology. It is also almost totally interlinked with the rain forests through which it flows. A very substantial part of the foods for the extraordinary array of Amazonian fishes comes directly from the surrounding, overhanging and enclosing forest. Thus an Amazon exhibit is inevitably a forest exhibit that draws, from the flora and fauna of the largest continuous area of forest in the world, an unparalleled diversity of life. The new Amazonia Exhibit will highlight all these themes.



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NATIONAL ZOOLOGICAL PARK

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With FY 1988 funds, the Zoo will modify the existing structural core of the former polar bear exhibit to form the Amazonia Exhibit. In FY 1990, Phase II of the project will concentrate on the actual exhibit construction. The exhibit will display a wide variety of aquatic animals concentrating on fishes and include seldom-seen amphibians, reptiles, birds, and mammals. Visitors will view these animals from above-ground and underwater viewing stations. The exhibit setting, a tropical rain forest, will illustrate the predominant features of tropical biology and emphasize complexity, specialization, and species interactions. Among the aquatic animals that may join this exhibit are giant otters, snakebirds, freshwater sharks, and hundreds of species of Amazon fishes.

#### Renovation, Repairs, and Improvements

Rock Creek - \$1,400,000 - The Zoo is responsible for the repair and preventive maintenance of existing facilities. The Zoo strives to maintain a safe environment for its visiting public and staff, to provide ecologically suitable and comfortable enclosures for the animals, and to maintain buildings in good condition. Funding for FY 1990 will help ensure that the Zoo's future will not include a large backlog of major repairs.

The 163 acres of land in Rock Creek contain over 450,000 square feet of building and more than 160,000 square feet of roofs. Along with the Park's perimeter fence measuring 10,564 lineal feet, the Zoo's in-ground utility distribution system includes over 4,600 lineal feet of high voltage electrical lines, approximately 4,000 lineal feet of medium voltage electrical lines, 16,000 lineal feet of water mains, 6,000 lineal feet of gas mains, 28,000 lineal feet of sewer lines, and 14,000 lineal feet of storm drains. The Zoo's maintenance program includes the care of these utility systems to ensure safe operation of the facilities. The extensive system of pedestrian paths and vehicle roadways requires regular maintenance. The projects planned for FY 1990 for the Rock Creek Park facility include:

- HVAC repair;
- roof repairs to the Bird House, Lion and Tiger Building, Reptile House, and the Panda House;
- bridge repairs and painting;
- repairs to rock work;
- repair and replacement of guard rails; and
- renovation of laboratory space for the molecular biology program.

The Zoo requests \$1,400,000 to continue the program of renovation, repair, and preventive maintenance of existing Rock Creek facilities. Funding at this level will enable the Zoo to implement its FY 1990 program.

Front Royal - \$600,000 - The Conservation and Research Center is a non-public facility devoted to breeding endangered wildlife species and associated conservation and research efforts. Funding in FY 1990 will enable the Zoo to perform the required maintenance for the upkeep of the 3,150-acre facility.

The Center has 89 facilities of various types, containing approximately 236,000 square feet of interior space. The property has two and one-half miles of paved roads, 20 miles of jeep trails, and over 30 miles of fences. The Center must maintain all of these to provide for the safety of the animal collection. The projects scheduled for FY 1990 at Front Royal include:



- the deer stable and hoofed stock sheds;
- the east wing of Small Animal Facility;
- the interior and exterior of building #32;
- fence in Rockhill pasture;
- hoofed stock sheds at Meade #2;
- non-skid flooring material in veterinary hospital; and
- roof repairs in mechanic shop and supply building.

The \$600,000 that the Zoo requests for FY 1990 will extend the Center's preventive maintenance program. The funds will help to reduce potentially more costly future repairs at this very important facility.









REPAIR AND RESTORATION OF BUILDINGS

1988 Appropriation.....	\$19,254,000
1989 Appropriation.....	\$20,735,000
1990 Estimate.....	\$26,653,000

Smithsonian facilities include 14 museums and gallery buildings in Washington, D.C. and New York City and total over 5.5 million square feet of building space. These museum buildings house research and collections management activities and a wide range of exhibitions in the fields of science, history, technology, and art. The Institution also operates and maintains restoration, storage, aircraft, and spacecraft display facilities and the Museum Support Center at Suitland, Maryland; centers for biological research, conservation, and education in Panama and on the Chesapeake Bay near Edgewater, Maryland; a center for astrophysics in Cambridge, Massachusetts; and the Whipple Observatory on Mt. Hopkins in Arizona. These facilities range in age from new to 130 years, and many appear on the registers of historic landmarks.

The Repair and Restoration of Buildings (R&R) account pays the cost of repairs, corrective measures to meet life safety and health regulations, and replacement or renovation of major building components or equipment. This budget document discusses the repairs and renovations at the National Zoological Park as a separate justification.

The heavy public use of buildings, and the demands on building equipment and systems for constant temperature and humidity levels to protect the National Collections, exacerbate the natural aging process of building materials. Eventually, even effective preventive maintenance and regular repair programs cannot keep the machinery components of building systems running. The Institution must overhaul heating, ventilation, and air conditioning (HVAC), electrical and plumbing systems periodically to replace deteriorated equipment, wires, ducts, and pipes. It must repair the effects of weather on the exterior of buildings and guard against interior damage. In addition, the enactment of new codes and regulations call for building modifications to ensure a safe and healthful environment for visitors and staff.

In recent years funding levels for maintenance, repair, and preservation of buildings have not kept pace with the rate of deterioration. A substantial backlog of essential repair work exists. These repairs are essential to ensure continued functionality of building equipment and systems, long-term preservation of the buildings, or compliance with life safety and health codes and standards. The current estimate of the backlog of projects is \$197 million. Only major funding increases will reduce this backlog and preserve buildings for continued use by future generations. Annual funding at the "current services" level in the Repair and Restoration of Buildings program is not sufficient to support the work required. Some of the work is, in fact, more urgent today because inadequate funding in the past prevented the timely repair or replacement of building systems and components.

The Smithsonian separates projects under the R&R program into two categories and accordingly requests funding in two sub-accounts. The first sub-account within the R&R account, called "Major Capital Renewal," includes funds for the cyclical replacement of major building systems and equipment and major renovation projects required to assure long-term preservation of the buildings. These projects are different from ongoing restoration work, preventive maintenance projects, or repairs undertaken when a piece of equipment fails. Their magnitude, expense, and planning complexity distinguish them from this more routine repair work. More than half of the

identified backlog consists of these major replacement requirements for HVAC and electrical systems at the Natural History, American History, Arts and Industries, and American Art and Portrait Gallery buildings.

The second R&R sub-account is Repairs, Restoration and Code Compliance. Funding requested through this sub-account will eliminate, over a period of time, the remainder of the backlog of repairs and other work needed to meet safety and health requirements. This sub-account encompasses six categories of routine maintenance and repair projects, such as:

- general repairs;
- facade, roof and terrace repairs;
- fire detection and suppression projects;
- access, safety and security projects;
- utility repairs; and
- advanced planning and inspection for such projects.

This budget request presents an aggregate amount for each of the six categories above, with a description of the kinds of work planned.

This justification also describes resource requirements to manage effectively the phased elimination of the backlog of deferred repairs. Although the Institution requests these administrative resources in the Salaries and Expenses account, with other operating costs, it describes the R&R related requests here. The Institution treats the discussion in this manner because of the inextricable relationship between expanded project funding and project management costs.

The composition of this year's R&R budget request follows:

REPAIR AND RESTORATION OF BUILDINGS

MAJOR CAPITAL RENEWAL	\$13,625,000
REPAIRS, RESTORATION AND CODE COMPLIANCE	
General Repairs	1,845,000
Facade, Roof and Terrace Repairs	5,710,000
Access, Safety, and Security	2,385,000
Fire Detection and Suppression	460,000
Utility Systems Repairs	1,895,000
Advanced Planning and Inspection	<u>733,000</u>
Subtotal	13,028,000
TOTAL REQUEST	\$26,653,000

Following the narrative description of the program for FY 1990, a listing appears showing by building and by R&R category, all planned projects.

## MAJOR CAPITAL RENEWAL

Projects in this category include:

- replacing HVAC and electrical systems;
- modifying building envelopes for improved energy efficiency;
- installing exhaust air systems and improving automatic temperature control systems;
- installing fire detection and suppression systems;
- emergency replacement of electrical and HVAC equipment for one museum;
- relocating staff and collections; and
- developing design and construction specifications.

For FY 1990, the Smithsonian requests \$13,625,000 for the projects listed below.

American History Building (\$3,675,000) - A 1982 study of the HVAC system of the 25-year old American History Building recommended replacement of the deteriorated heating, ventilation, air conditioning, and refrigeration equipment systems and controls. Replacement of these systems will ensure the continued provision of required environmental conditions in an energy efficient manner. The study also recommended modifications to the building to increase energy efficiency. To complete window and roof replacement and facade repairs, the Institution is using an amount of \$2.8 million previously provided (supplemented with \$1.4 million reprogrammed from the HVAC project at the American Art and Portrait Gallery Building).

The 1986 Master Coordination Plan established a detailed schedule for replacing the HVAC and related systems. This plan also incorporated anticipated fire protection and asbestos removal work so that workmen could isolate vertical portions of the building, and accomplish all work required in each segment at the same time. This scheduling of complex but interrelated projects will result in less disruption to the Museum's activities and save money through a single contract for the entire project.

Work in each vertical quadrant includes replacing the mixing boxes, controls and air-handling equipment; installing new sprinkler and smoke detection systems and other fire protection improvements originally outlined in the Fire Protection Master Plan; and removing asbestos present in mechanical rooms and other areas of the building. The Museum is coordinating this project with its exhibit renewal program. The project includes the cost of relocating artifacts and personnel displaced in the course of the work.

The first phase of this project began with funding received in FY 1987 (\$1.2 million) and includes all work required in the east quadrant of the building. Funding received in FY 1988 (\$1.6 million) and in FY 1989 (\$2.1 million) will fund Phases II and III and will cover the west central and west quadrants, respectively. Of the \$3,675,000 requested for FY 1990, funds will support work for Phase IV in the east central quadrant, (\$3,200,000); design costs for the final phase of the project on the fourth floor, (\$275,000); and relocate staff and collections displaced by the work in progress, (\$200,000).

Natural History Building (\$9,950,000) - Over the past several years the Institution undertook a number of separate studies to address energy conservation, fire detection and suppression, communications, security upgrading, asbestos abatement, and other remedies to building deficiencies, especially in the HVAC system and the electrical systems. The Institution initiated a Master Implementation Plan once staff realized



the magnitude of the work required to keep the building in operational condition. The Institution will schedule work in a way to minimize disruption within the building to one period of time and to reduce costs by grouping tasks.

Guided by a Fire Protection Master Plan developed in 1979, fire protection improvements and asbestos removal and containment work is well underway. However, the replacement of the HVAC and critical electrical equipment is the more significant aspect of this project, and it governs the comprehensive work schedule. The majority of the HVAC equipment is 25 years old and requires replacement to avoid system failure. The automatic temperature control system is obsolete and does not operate satisfactorily. The age of 90 percent of the electrical lighting and power panels in the building is in excess of 20 years. Some of the electrical panels date from 1910 and present a potential safety hazard. Other panels installed in the 1960s are not UL (Underwriters Laboratory) approved as meeting established safety standards, and replacement circuit breakers are no longer available. The main high-voltage switchgear equipment, which serves all the transformers for the Natural History, as well as the Freer Gallery, Arts and Industries, and Smithsonian Institution buildings, is approximately 40 years old. The Smithsonian must completely replace these components and other related electrical equipment because repair parts are no longer available.

Upon completion of the detailed plan for the replacement of building systems at the Natural History Building, the Institution will spread the work over a number of years to provide the most cost effective construction sequence, to minimize disruption of programs, and to obviate Museum closings. The scope of work includes:

- replacing the HVAC system with a new centralized system located in new penthouses over the east and west wings;
- modifying the building envelope, specifically, by installing roof insulation, by replacing single-glazed windows with triple-glazed windows, and by installing air locks or vestibules at entrances and loading docks;
- centralization of laboratories with new exhaust air systems;
- improving the automatic temperature control system;
- and connecting a central control and monitoring system.

The project will incorporate fire protection work originally planned under the Master Plan. Work will also include removing or encapsulating asbestos insulation located in the attics and attached to equipment, duct work and piping throughout the building.

Funds appropriated in FY 1986 (\$235,000) supported the Master Implementation Plan and the evaluation of the potential requirements for interim measures to keep the facility operational through the construction period. Amounts of \$100,000 and \$475,000 received in FY 1987 and FY 1988 respectively, and \$1,000,000 appropriated in FY 1989, will complete planning and begin preparing the design and specifications for the initial phase of work, and planning for the relocation of staff and collections affected by the first stages of construction. During this planning phase the Institution will complete an estimate which will show the costs of the entire project.



For FY 1990, the Institution requests \$9,950,000 as follows: for the first phase of construction and for emergency replacement of electrical and HVAC equipment not expected to remain operative throughout the construction period, (\$9,000,000); for relocating staff and collections, (\$400,000) and for preparing design and specification documents for the next phase of construction, (\$550,000).

#### REPAIRS, RESTORATION AND CODE COMPLIANCE

Projects in this category include:

- minor, unscheduled, but essential repairs to sidewalks, roads, parking lots, waterproofing, correcting electrical and lighting problems and correcting deteriorated plaster walls and cracked marble floors;
- repairs to roofs, facades and window frames;
- asbestos abatement, renovating elevators, correcting exhaust problems, installing an emergency electrical generator system, improving access for the disabled, installing an elevator and lift, and installing surveillance equipment at various Mall buildings;
- installing heat and smoke detection systems, sprinkler and chemical suppression systems, fire doors and walls and improving exit capability;
- repairing and upgrading HVAC systems, plumbing, electrical and communications systems; and
- advanced design of future year projects and long-range planning.

For FY 1990, the Smithsonian requests \$13,028,000 for the projects listed below.

General Repairs (\$1,845,000) - Funds requested in this category support a wide variety of projects. These funds provide resources for minor unscheduled, but essential, repairs which the Institution cannot anticipate specifically or which do not fit into one discrete category. For FY 1990, the Institution requests \$1,845,000 for such projects as:

- repair or replacement of the roll-up door to Pod 4 at the Museum Support Center;
- repair and modification of the public rest room facilities at the Air and Space Building;
- design of repairs and restoration of the lower level of the Old Dominion Building and repairs to the water tower at the Smithsonian Environmental Research Center;
- structural repairs to the Smithsonian Institution Building;
- repairs to sidewalks, parking lots, and roads at various locations;
- general repairs at off-Mall facilities; and
- emergency repairs required throughout the Smithsonian.

In addition, the funds will allow the completion of two projects begun in FY 1989. These projects include:

- renovation and repair of the galleries of the Freer Gallery Building to correct electrical and lighting problems and to replace or recover badly deteriorated plaster walls and cracked marble floors; and
- repairing and waterproofing the pedestrian tunnel between the Smithsonian and the Arts and Industries buildings.

Facade, Roof and Terrace Repairs (\$5,710,000) - Maintaining the integrity of the exteriors of all Smithsonian buildings is critical. This maintenance will prevent major structural and interior damage and deterioration due to age, water intrusion, and weathering. Proper care will ensure a safe environment for visitors, staff, and collections. Also, energy conservation demands weather-tight exteriors. Work in this category includes a variety of projects accomplished cyclically and varies with the life of the materials used. For example, roofs need replacing nearly every 20 years; facade joints need recaulking and repointing about every ten years; and window frames and other exterior trim need repainting every five years. Several Smithsonian buildings now require large-scale restoration. The Institution plans to offer additional protection for building exteriors through an enhanced preventive maintenance and repair program.

For FY 1990, the Institution requests \$5,710,000 for facade, roof, and terrace repairs. Planned projects include roof inspection, repair, or replacement at the American Art and Portrait Gallery Building, the Air and Space Building, the Renwick Gallery Building, the Silver Hill Facility, and the Smithsonian Tropical Research Institute. Funding will support projects at the Air and Space Building to correct original building deficiencies and water intrusion problems by replacing the skylights and windows. Work will continue at the Smithsonian Institution Building to restore the windows and the facade stones and to repoint the building's facade masonry. The Institution will resurface the deteriorated plaza at the Hirshhorn Building and correct a water intrusion problem in the building spaces below the plaza. Other projects funded from this sub-account include:

- exterior painting at the Arts and Industries Building to ensure long-term preservation of the recently restored painted facade elements;
- repairing, restoring, and painting the fence at the Cooper-Hewitt Museum;
- facade pointing and exterior lighting repair at the Freer Gallery Building; and
- repairing and painting wooden and metal facades and building elements at a variety of locations.

Access, Safety and Security (\$2,385,000) - The Institution continues to emphasize correcting facility conditions that threaten the security of the National Collections, improving environmental conditions for the health and safety of visitors and staff, and providing better access for disabled persons.

For FY 1990, the Institution requests \$2,385,000 for a number of important projects in these areas. Among the projects planned for correction of hazardous conditions are:

- continuing the asbestos abatement program;
- modifying the paint spray booth exhaust duct at the Hirshhorn Building to meet Occupational Safety and Health Administration standards;
- modifying the elevator controls in the American History Building to provide emergency recall in the event of fire;
- renovating elevators at the Natural History Building to ensure safe operation;
- correcting ventilation problems involving hazardous vapors at the American Art and Portrait Gallery Building; and
- modifying the special contaminated waste water holding tank at the Museum Support Center to meet Washington Suburban Sanitary Commission regulations.

Other safety-related projects which will continue include correcting the fume hood exhaust problems at the Museum Support Center and installing an emergency electrical generator system at several facilities. Also, this request for FY 1990 will fund projects to improve access for disabled persons in order to meet current code requirements: redesigning the stairs and installing an elevator and lift for access to the mezzanine in Hall 16 of the Natural History Building, which houses the "Life at Sea" exhibit; modifying the South Tower entrance to the Smithsonian Institution Building; and modifying entrance and interior walkways to the Cooper-Hewitt Museum for full accessibility.

Projects for FY 1990 to improve security of the collections, staff and visitors include:

- installing internal barriers in the Numismatics vault at the American History Building;
- modifying the entrance of the Smithsonian Libraries at the Natural History Building to limit unauthorized access; and
- installing perimeter barriers and surveillance equipment at various Mall buildings.

Fire Detection and Suppression (\$460,000) - A major Institutional priority is to provide the best fire protection and safety measures available under today's standards and with state-of-the-art technology. The following have fire protection master plans: the Natural History, American History, Air and Space, American Art and Portrait Gallery, and Smithsonian Institution buildings. For FY 1990, the request of \$460,000 will continue fire protection master plan work in these buildings and make other fire protection improvements at the Smithsonian Environmental Research Center in Maryland, and the Oak Ridge Observatory of the Smithsonian Astrophysical Observatory in Massachusetts. Work will include the installation of heat and smoke detection systems; sprinkler and chemical suppression systems; fire doors and walls; and improvement of exit capability.

Utility Repairs (\$1,895,000) - Funds in this category will maintain, repair, and upgrade the heating, ventilating, and air conditioning systems, and plumbing, electrical and communications systems throughout the Institution's facilities. Ongoing renovations, repairs, and replacements of deteriorated equipment components are essential for increasing energy efficiency. The long-term preservation of the National Collections is dependent upon stable temperature and humidity conditions.

Energy conservation remains a high priority at the Smithsonian. The most significant energy savings will result from upgrading HVAC systems, replacing obsolete equipment, and improving the efficiency of environmental zones. The Institution modifies existing HVAC systems to accommodate: programmatic growth; changes in the functional use of the building; and the collections' environmental needs as they become better understood. The Institution uses an integrated approach to renovations and modifications to plan for long-range, systematic HVAC improvements that will meet museum environmental requirements in an energy efficient manner.

Comprehensive HVAC studies and energy audits for most of the buildings facilitate planning of other improvements. The scope of the HVAC studies included field investigations of age, condition, and performance of existing equipment, controls, and current operating conditions; reviews of existing drawings, specifications, operating manuals, and hygrothermograph records; an analysis of the relationship between the building structures and the HVAC systems; and an assessment of programmatic needs for



environmental control. The data gathered by these studies provides a basis for determining redesign or replacement needs of existing HVAC systems; develops construction cost estimates; and establishes priorities for the repair, replacement or modification of such equipment components as air handling units, chillers, condensers, compressors, cooling towers, automatic temperature and humidity controls, pumps, pipes, fans, filters, duct work, and related electrical and plumbing systems. At the same time, energy audits investigate all factors relating to energy use, such as power-consuming equipment and building conditions (doors, windows, insulation, floors, and partitions). After identifying energy conservation opportunities and evaluating costs and potential energy savings, plans will guide the renovation and improvement work. This process identified a number of major system replacements which the Major Capital Renewal sub-account will fund in addition to more minor repairs and renovations requested in the Utility Repairs category.

Funding of \$1,895,000 requested in FY 1990 in this category will support routine repair, replacement, and modification projects. These projects include miscellaneous HVAC repairs for the Arts and Industries Building, the Hirshhorn Building, the Anacostia Museum, and the Museum Support Center. Other repairs include replacement of water mains at the American Art and Portrait Gallery Building, and renovation of the electrical system at the Miller House of the Cooper-Hewitt Museum. Several planned utility improvement projects include: modification of ventilation systems and installation of a dust collection system at the American History Building; continuation of energy conservation measures at the Cooper-Hewitt Museum; installation of a new electrical substation at the Freer Gallery Building; and increasing the emergency water supply at the Museum Support Center. In addition, the project to install cabling in the Mall master raceway system will continue.

Advanced Planning and Inspection (\$733,000) - A comprehensive facilities management program must be ground in a systematic plan. Funds in this category will support projects to inspect and plan long-range repair and restoration needs and to develop advanced design of future year projects. The amount of \$733,000 requested in FY 1990 will complete an integrated master plan for all facilities, and prepare a coordinated plan for correcting deficiencies at the Air and Space Building. In addition, the Smithsonian will continue to use these funds to design smaller, single year projects before receipt of construction appropriations as a basis for more accurate cost estimates. The Institution can realize significant cost savings in escalation costs by completing the design of projects in advance of receipt of funding.

#### ADMINISTRATIVE COSTS

The Institution requests an amount of 7 workyears and \$361,000 for 7 permanent positions to manage the much expanded Repair and Restoration of Buildings (R&R) and Minor Construction, Alterations, and Modifications (A&M) programs. In FY 1989 Congress funded the R&R program at the \$20.7 million level, and the A&M program at \$2.0 million. The Institution received resources (20 workyears and \$1,030,000) to support these programs at these levels. The FY 1990 requests for R&R and A&M total \$30.7 million, and the Smithsonian will require additional staff in the two offices with major responsibilities for management of these programs, if the Institution is to utilize fully and effectively these much needed resources. These additional resources represent an "overhead rate" of less than five percent of the \$8.0 million increase in these programs over the FY 1989 levels. This rate is reasonable considering the large number of individual projects that make up the Smithsonian's R&R program and the inherent complexity of construction in museum buildings, where personnel must maintain



stable environmental conditions 24 hours-a-day and must schedule construction around ongoing public activities.

The Office of Design and Construction (ODC) bears the major responsibility for management of the R&R and A&M programs. In addition to preliminary planning of projects, ODC prepares and supervises the development of detailed scopes of work and cost estimates; drawings, and specifications required to bid the projects; and supervises, inspects, and coordinates all construction activities. For FY 1990, funding will support six positions (6 workyears and \$282,000): a facilities planner to identify and enunciate future facility repair requirements and develop budgetary needs; a supervisory engineer/architect and an electrical engineer to develop or oversee development of project plans and specifications for contracted construction services; a construction cost estimator to develop detailed government estimates of construction projects; and two clerical positions for typing and administrative support for all functional areas. Plans for these additional positions include appropriate office space. Funding will support other needs such as travel, supplies and materials, and training. Contractual services will supplement staff expertise, particularly when there is a need for highly specialized disciplines which does not require full-time staff and when workload exceeds in-house design capacity.

The Office of Procurement and Property Management (OPPM) also has extensive responsibilities related to the R&R program. At various stages in the life of most projects, OPPM must solicit bids for, negotiate, award and administer contracts. OPPM requests one position (1 workyear and \$79,000) for FY 1990 to support the expanded R&R programs and projects funded from the Alterations and Modifications category of the Construction account. OPPM will hire an additional contract specialist for architectural/engineering and construction contract negotiation and administration. Funding will also provide appropriate office space and other support costs for the new position.

REPAIR AND RESTORATION OF BUILDINGS

Detail of FY 1990 Request by Building

<u>FACILITY, ACCOUNT AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>American History Building</u>		
MAJOR CAPITAL RENEWAL		
Master Coordination Plan, Phase IV		3,200,000
Design Costs, Phase IV		275,000
Relocation Costs		<u>200,000</u>
SUBTOTAL		3,675,000
REPAIR, RESTORATION AND CODE COMPLIANCE		
Elevator Modifications	Access	225,000
Numismatics Security Study/Implementation	Access	50,000
Dust Collection System, AB070	Utility	75,000
Basement Ventilation Implementation	Utility	<u>200,000</u>
SUBTOTAL		550,000
TOTAL FOR FACILITY		4,225,000
<u>Natural History Building</u>		
MAJOR CAPITAL RENEWAL		
Master Plan Improvements		9,000,000
Design Costs		550,000
Relocation Costs		<u>400,000</u>
SUBTOTAL		9,950,000
REPAIR, RESTORATION AND CODE COMPLIANCE		
Fire Protection Master Plan Implementation	Fire	100,000
Elevator Repairs	Access	85,000
Hall 16 Disabled Access	Access	<u>120,000</u>
SUBTOTAL		305,000
TOTAL FOR FACILITY		10,255,000
<u>Smithsonian Institution Building</u>		
REPAIR, RESTORATION AND CODE COMPLIANCE		
Tunnel Repair and Waterproofing	General	350,000
Structural Inspection/Study Implementation	General	250,000
Facade Restoration	Facade	50,000
Window Restoration	Facade	600,000
Repainting of SI Building Facade	Facade	250,000
Handicapped Accessibility, South Tower	Access	<u>100,000</u>
TOTAL FOR FACILITY		1,600,000

Arts and Industries Building

REPAIR, RESTORATION AND CODE COMPLIANCE

Exterior Painting	Facade	100,000
Cooling Tower # 1 Repairs/Replacement	Utility	<u>70,000</u>

TOTAL FOR FACILITY 170,000

American Art and Portrait Gallery Building

REPAIR, RESTORATION AND CODE COMPLIANCE

Roof Moisture Study/Repair	Facade	10,000
Fire Protection Improvements	Fire	200,000
Exhaust System Modifications	Access	100,000
Water Pipe Replacement	Utility	<u>200,000</u>

TOTAL FOR FACILITY 510,000

Air and Space Building

REPAIR, RESTORATION AND CODE COMPLIANCE

Public Restroom Modifications	General	120,000
Roof Repairs	Facade	450,000
Skylight Replacement	Facade	1,200,000
Window Replacement	Facade	600,000
Fire Protection Master Plan Implementation	Fire	100,000
Master Facility Plan	AdvPlan	<u>200,000</u>

TOTAL FOR FACILITY 2,670,000

Renwick Gallery Building

REPAIR, RESTORATION AND CODE COMPLIANCE

Roof Repairs	Facade	435,000
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Freer Gallery Building

REPAIR, RESTORATION AND CODE COMPLIANCE

Gallery Renovation	General	300,000
Facade Pointing and Lighting Repair	Facade	500,000
New Electrical Substation	Utility	<u>600,000</u>

TOTAL FOR FACILITY 1,400,000

Silver Hill Facility

REPAIR, RESTORATION AND CODE COMPLIANCE

Roof & Structure Repairs, All Buildings	Facade	50,000
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Museum Support Center

REPAIR, RESTORATION AND CODE COMPLIANCE

Door Repair/Replacement, Pod # 4	General	35,000
Modifications to Holding Tank	Access	30,000
Fume Hood Modifications	Access	100,000
Increase Emergency Water Supply	Utility	100,000
Cooling Tower Renovation & Inspection	Utility	<u>40,000</u>

TOTAL FOR FACILITY 305,000

Smithsonian Environmental Research Center

REPAIR, RESTORATION AND CODE COMPLIANCE

General Repairs	General	45,000
Water Tower Repairs	General	30,000
Renovation of Lower Level, Old Dominion Bldg.	General	30,000
Miscellaneous Fire Protection Improvements	Fire	<u>20,000</u>

TOTAL FOR FACILITY 125,000

Hirshhorn Museum and Sculpture Garden

REPAIR, RESTORATION AND CODE COMPLIANCE

Plaza Resurfacing	Facade	1,200,000
Paint Spray Booth Modifications	Access	100,000
Relocation & Replacement of Condensate Pumps	Utility	<u>100,000</u>

TOTAL FOR FACILITY 1,400,000

Anacostia Museum

REPAIR, RESTORATION AND CODE COMPLIANCE

General Repairs	General	20,000
Miscellaneous HVAC System Repairs	Utility	<u>150,000</u>

TOTAL FOR FACILITY 170,000

Cooper-Hewitt Museum

REPAIR, RESTORATION AND CODE COMPLIANCE

General Repairs	General	20,000
Fence Repair & Painting/Restoration Study	Facade	10,000
Handicapped Access	Access	200,000
Energy Study Implementation	Utility	200,000
Electrical Renovation, Miller House	Utility	<u>60,000</u>

TOTAL FOR FACILITY 490,000

Smithsonian Tropical Research Institute

REPAIR, RESTORATION AND CODE COMPLIANCE

General Repairs	General	75,000
Roof Repairs, Various Sites	Facade	<u>55,000</u>

TOTAL FOR FACILITY 130,000

Smithsonian Astrophysical Observatory

REPAIR, RESTORATION AND CODE COMPLIANCE

Road Repairs and Improvements	General	200,000
General Repairs - Whipple	General	50,000
General Repairs - Oak Ridge	General	30,000
General Repairs - Cambridge	General	15,000
Fire Detection/Security System - Oak Ridge	Fire	<u>40,000</u>

TOTAL FOR FACILITY 335,000



Miscellaneous Locations

REPAIR, RESTORATION AND CODE COMPLIANCE

Grounds, Sidewalk & Parking Lot Repairs	General	75,000
Emergency Repairs Throughout SI	General	200,000
General Facade Renovations	Facade	200,000
Asbestos Abatement	Access	500,000
Emergency Power Study/Design	Access	450,000
Security Requirements	Access	300,000
SIL Security Modifications	Access	25,000
Mall Master Raceway System	Utility	100,000
Advanced Planning & Design	AdvPlan	393,000
Facilities Master Plan	AdvPlan	<u>140,000</u>

TOTAL MISCELLANEOUS 2,383,000

TOTAL REQUEST, REPAIR AND RESTORATION OF BUILDINGS 26,653,000









CONSTRUCTION

1988 Appropriation.....\$ 1,315,000  
1989 Appropriation.....\$ 8,655,000  
1990 Estimate.....\$10,000,000

The FY 1990 request for funding in the Construction account represents an investment in the Institution's long-range program goals. In order to maintain vitality in the Institution's far reaching programs in research, collections management, exhibitions, education, and public service, it is essential to develop adequate facilities. Although the backlog of deferred maintenance and repairs is a priority, the Smithsonian also must provide appropriate space in which its varied programs can function effectively.

For FY 1990, the Institution requests \$1,750,000 for renovation design for the General Post Office Building; \$3,480,000 to continue development of research facilities at the Tropical Research Institute in Panama; \$730,000 to continue the identification and planning of future facility development requirements; and \$4,040,000 for projects in the Minor Construction, Alterations, and Modifications category.

GENERAL POST OFFICE BUILDING

Since 1958, when the Institution acquired the Patent Office Building, the Institution has had an interest in the General Post Office Building. This building is bounded by 7th, 8th, E, and F Streets in northwest Washington, D. C. The original wing of the General Post Office Building is the work of America's first native-born professional architect, Robert Mills of South Carolina. Mills designed the Patent Office Building, the Washington Monument, and the Treasury Building.

On October 19, 1984, the President signed Public Law 98-523 authorizing transfer of the General Post Office Building from the General Services Administration to the Smithsonian Institution without reimbursement. The International Trade Commission has now moved out of the building, and the General Services Administration will transfer custodianship of the building to the Smithsonian. The Institution intends to complete the plans for the building's use and to develop cost estimates and schedules for the restoration, using construction planning funds. No Smithsonian program activities will occupy the building until the building undergoes modifications.

The General Post Office Building is in very poor condition. Asbestos insulation encases exposed plumbing in almost every space throughout the building. Because the drinking water is unsafe, previous occupants used bottled water. Other conditions include:

- an oversubscribed electrical system in poor condition that is a potential fire hazard;
- an unreliable steam heating system includes corroded and heat leaking exchanger tanks;
- old pumps and other mechanical equipment in poor condition;
- window air conditioners, in various states of repair, that provide most of the summer cooling; and
- very old central air conditioning units that are in unreliable condition.

The building does not contain fire safety systems, such as water sprinklers and smoke detectors. The existing fire alarm system is an old and unreliable pull station local alarm system. The building has two small passenger elevators. One is automatic and reportedly has several deficiencies, and the other requires an operator. Both are very old and reportedly subject to frequent breakdowns. Recent roof repairs did not replace the rain gutters and interior down spouts, and these are subject to intermittent failure, causing leaks in the building. Window frames have dry rot, and the poor condition of the exterior stone facade contributes to interior water problems. The interior courtyard, a paved parking area over a wooden structure, may be structurally unsound. The general assessment is that the building is not safe for continued occupancy in its present deteriorated condition.

The Smithsonian must renovate the building before it can make use of it. The Institution proposes a comprehensive program to preserve the historic nature of the building and convert it for Smithsonian use. The planned work includes:

- restoring all the original interior and exterior architectural finishes;
- repairing or replacing all windows;
- repairing all electrical and plumbing systems;
- providing new insulation, a vapor barrier where necessary, and a heating and air conditioning system with industrial quality controls;
- installing appropriate lighting with ultraviolet screening in exhibit areas;
- installing smoke detection and sprinkler systems along with security equipment; and
- repairing and replacing elevators.

The estimated cost of the renovation program is in excess of \$40 million. For FY 1990, the Smithsonian requests \$1,750,000 to begin to design the required renovations.

Failure to make the most urgent improvements would prevent the Smithsonian from using the building even in the most basic way. The Smithsonian would like to make the General Post Office Building habitable without delay to alleviate staff overcrowding in other buildings. Concern over the continued preservation of this architecturally important building also argues for early renovation. The proposed renovations will preserve the building for future generations and will provide an energy efficient, safe, and secure environment for collections, staff, and visitors. Even if the Institution receives funds to begin design in FY 1990 and construction funds in FY 1991, the Institution cannot complete renovation before FY 1993. Continued delay in commencing this project would adversely affect the public programs of the Institution and result in a need for increased resources simply to maintain the building in its present, deteriorated state.

#### SMITHSONIAN TROPICAL RESEARCH INSTITUTE

The Smithsonian Tropical Research Institute is the world's premier center for basic research in tropical biology. However, many STRI facilities are old, converted

buildings, some dating from the turn of the century. Not constructed for research purposes, the buildings are inefficient and in some instances unsafe. The upgrading of these facilities is a prerequisite for STRI to fulfill its responsibilities to the Nation.

Research at STRI is unique because of the two-ocean capability of its marine program. STRI can easily undertake comparative studies between the Atlantic and Pacific Oceans, since biologically related flora and fauna exist in quite different physical regimens. The separation of these populations began three to five million years ago, when the Isthmus of Panama rose from the ocean. The ability to date the separation provides a unique opportunity to examine long-term environmental impacts on animal and plant populations.

Through consistent support for the STRI Facilities Master Plan, Congress has recognized the importance of STRI's programs and the need for improvement in its facilities. In 1986, the Smithsonian received under Public Law 99-423 Congressional authorization to plan and construct additional research and dormitory facilities at various STRI sites in Panama. At present, two major research stations on the Atlantic coast must operate in inadequate temporary field facilities. In the past, few field studies required elaborate equipment or technical support. However, research requirements have changed dramatically over the last 15 years. STRI must now provide facilities commensurate with the current demands of field-oriented marine biology if it is to maintain its leadership role in marine research. For FY 1990, the Institution requests \$3,480,000 to continue development of the STRI master plan of 1986, with construction of three Atlantic coast laboratory and support facilities.

The Facilities Master Plan originally addressed the requirements of two existing Atlantic facilities, the Galeta Island Laboratory and the San Blas Field Station. STRI has followed the original plan closely to date. However, a major oil spill at the Texaco oil refinery on the Atlantic coast occurred in April 1986. Since the spill was near the Galeta Laboratory, it is no longer an appropriate site for the main Atlantic Laboratory.

STRI will not be able to use the Galeta site for normal research for many years. The area will be affected by chronic levels of oil well into the future, and it will be vulnerable to additional spills as long as the refinery is in operation.

As the result of the spill, STRI needed to modify its Master Plan and select an alternative to Galeta. STRI undertook a comprehensive reassessment of the Atlantic coastal environment but it could not identify an adequate single site for a major laboratory. Possible locations were either too remote for adequate support or they were subject to severe environmental degradation. However, the Atlantic survey did indicate substantial diversity in trends in populational, agricultural and industrial development in the region. This diversity provides an opportunity to examine the effects of various levels of development on coastal marine resources and habitats. To take maximum advantage of this opportunity STRI will require a mobile, floating laboratory facility (a vessel).

The Smithsonian, therefore, requests a three-part construction program for the Atlantic Facilities' segment of the Facilities Master Plan. Construction of the new San Blas facility remains unchanged from the original Plan. Galeta construction will include only the near-term segment. STRI will construct the Atlantic Laboratory as a floating research facility that supports research at sites extending from the Atlantic Coast of Colombia to the coast of Costa Rica.



San Blas Laboratory. STRI-sponsored marine scientists began working intensively in San Blas in the early 1970s. The San Blas Station is famous for pioneering studies of the ecology, behavior, and life history of fishes. In the past 15 years, STRI has published about 160 scientific papers describing research findings in San Blas. The Station currently serves as the center for more than one dozen research programs. Present facilities cannot properly accommodate any of them. The San Blas Archipelago consists of the most extensive coral reefs in the southeastern Caribbean, with abundant fish populations not found at Galeta. Hydrographic conditions permit year-round subtidal research, which is also not possible at Galeta.

The leadership of the Kuna Indians, under a self-autonomy agreement with the Republic of Panama, administers the San Blas region. STRI rents its existing facility from the Kuna Nation. The site is a very small artificial island about 40 feet across, situated atop a submerged sand cay and flanked closely by the crowded islands of Witchubhuala and Nalunega. The current station is a modified traditional native design built out over water. There are no utilities; kerosene lanterns provide light; drums and fiberglass cisterns store rainwater for drinking purposes; untreated sewage drains into the shallow water surrounding the reef, and the staff use bottled gas for cooking and refrigeration. There is no regular supply of electricity for scientific work, and the only "laboratory" is an open wooden shed. The site is remote, but has coastal freight delivery and regular light-airplane service to Panama City.

STRI maintains close relations with the Kuna Nation and has negotiated formal permission with their leadership to carry out scientific research in their homeland. The 1987 agreement permits construction of a new laboratory complex as called for in the Facilities Master Plan. The Institution requests the amount of \$750,000 in FY 1990 to relocate the current field station and upgrade the facilities available for research in the region. Relocation is necessary because of human impact on reefs in the area of the existing facility and to provide better access to more diverse reef habitats. The largest complex of offshore reefs and sparsely populated islands on the Caribbean coast of Panama (the Chichime, Limones and Hollandes Keys) begins about five kilometers to the east of the existing station. These islands meet several requirements, including proximity to the local airport and the existing long-term research sites. They offer a large diversity and area of reef habitats with low human intervention. The Kuna leadership is receptive to the location of a new lab in this region, as well as the creation of a biological reserve to protect the site for research. STRI has chosen two islands as preferred sites.

The proposed facilities will consist of:

- a small air-conditioned laboratory building to house sensitive instruments;
- a seawater pavilion with a running seawater system to maintain experimental organisms;
- a maintenance building with two electrical generators to ensure a continuous power supply for research activities;
- a diving support building and pier capable of receiving STRI's research vessel and small boats; and
- basic housing to accommodate 20 scientists and support personnel.



Utilities will include radio communications, solar power and hot water for domestic use, rainwater catchment with elevated storage, and seawater desalination capabilities for use during the dry season.

Galeta Laboratory. The Institution requests \$1,030,000 for construction of a new laboratory, a sea-water system, and housing at Galeta. STRI research at Punta Galeta began in 1967, and STRI established a long-term marine environmental monitoring program there in the early 1970s. Since that time, STRI has published more than 150 scientific papers describing research findings at Galeta. In 1986, a major rupture of an oil refinery tank near Galeta resulted in one of the largest oil spills in the Caribbean. The Minerals Management Service of the United States Department of the Interior awarded STRI with a grant of more than \$4 million. STRI staff are now analyzing the effects of this oil spill on the Galeta reef and adjacent habitats.

Most of the research done at Galeta is field-oriented because of lack of space and laboratory facilities. Currently, scientists must transport specimens across the Isthmus to the Naos facility for any laboratory work. The transportation time of up to two hours results in lowered productivity from delays, use of staff time for transportation rather than research, and loss of specimens from mortality because of transportation-induced stress.

The laboratory building at Galeta is of temporary World War II construction and lacks adequate space, utilities, running seawater, dockage, diving, maintenance, and residence facilities. The abandoned Coco Solo U. S. Naval facility, several miles away, provides housing. This housing is temporary and STRI cannot be certain of continued occupancy. Use of the facility is gradually being turned over to Panama for use by its citizens.

The requested laboratory and support facilities at Galeta include:

- a two-story, 3,200 square foot laboratory;
- a 1,000 square foot seawater pavilion and seawater system;
- a maintenance shop;
- an emergency generator;
- a dive locker;
- an apartment and laundry facilities for three to six resident and visiting scientists; and
- a new sewage disposal system.

Floating Laboratory. The Institution requests \$1,700,000 to construct a research vessel for mobile research on marine systems. STRI must currently rely on the R/V Benjamin, a 65-foot, 26-year-old converted motor yacht donated to STRI 10 years ago. Despite its limitations, the vessel serves as a base for now famous studies of eastern Pacific reefs, including the devastating effects of the extreme El Nino of 1983, the behavior and diving physiology of sea snakes, the ecology of island birds, and paleontological exploration.

The Benjamin is adequate as a small floating residence, but it has no laboratory space or marine sampling gear. It grossly lacks adequate space for small boats, SCUBA diving, and provisions. It is also slow, thereby lengthening cruises and decreasing work time. Heavy field use has taken its toll, and the boat will have to be scrapped in a few years. In 1988, use of the vessel doubled in days at sea from 80 days (1983-

1988 average) to at least 170 days for a total of 13 cruises. STRI projects similar usage for 1989.

The new research vessel will serve as a mobile near-shore laboratory, allowing research in a wide variety of otherwise inaccessible sites. These include many coastal areas in Panama and neighboring countries, as well as important and diverse island groups such as the Perlas Islands in the Bay of Panama, and the eastern part of the San Blas Archipelago. It will greatly improve the ability of STRI scientists to perform marine research across national boundaries into Costa Rica, Venezuela, Colombia, and Ecuador.

The oceanographic, marine sampling, and laboratory capabilities of the vessel will enhance STRI's research capacity for investigating major environmental phenomena. These phenomena include the El Nino, the effects of natural disasters such as storms and earthquakes (which often occur in areas inaccessible except by sea), and the feasibility and potential ecological impact of alternative sites for a new trans-isthmian canal. The vessel will be capable of transiting the Panama Canal and will therefore be available for research in both oceans.

The characteristics of this vessel will be:

- a length of 90 feet, 25 feet abeam, and an 8-foot draft;
- twin diesel engines;
- redundant generators for electricity, desalinators for fresh water, and central air conditioning;
- accommodations, wet and dry laboratories, bottom and mid-water sampling equipment, diving facilities and work space for 4 crew and up to 12 scientific staff for cruises of up to 3 months;
- a range of 2,500 miles and cruising speed of 12-15 knots; and
- autopilot, satellite navigation, radar, and radio communications.

STRI's past experience has shown that the right combination of properly designed working space and accommodations cannot be obtained by reconditioning and refitting donated or other "zero cost" vessels.

#### CONSTRUCTION PLANNING

An essential part of an effective facilities development program is the ability to assess requirements and make long-range plans in appropriate detail. An adequate long-range planning capability for the Institution would identify major issues affecting the project, including program needs, spatial ideas, and preliminary cost estimates.

The Institution's current construction planning process results in requests for major construction projects whose estimated cost exceeds \$1 million without the benefit of such refined planning. A lack of planning resources results in rough approximations of project requirements, including physical requirements such as space or configuration, construction or operational costs, and environmental or logistical factors. Also, the lack of resources results in capital improvement planning that

lacks cohesiveness and unified direction. An expanded long-range planning capability is necessary for Smithsonian management decision-making, and review commission and Congressional approval.

The Smithsonian requests the amount of \$730,000 for FY 1990 to continue development of a comprehensive long-range capital improvement program. Better defined plans for future year construction projects prior to authorization and budget requests will result. A recent estimate of facilities' expansion or improvement requirements totals in excess of \$900,000,000. Specific projects include:

- development of an extension for the Air and Space Museum at a nearby airport,
- construction of administrative and support facilities to replace leased buildings at 1111 North Capital Street and L'Enfant Plaza, and
- expansion of the Cooper-Hewitt and Hirshhorn Museums.

In addition, the Institution will formally consider off-Mall facilities for collections' storage as a solution for increasingly overcrowded conditions at nearly all Smithsonian museums.

Annual resources of \$.7 million to \$1.5 million will provide continued feasibility studies, planning, and designs upon which to base precise work and cost estimates for construction. These resources will also establish operating and logistical support requirements, and make required environmental assessments for other critical capital improvement projects.

#### MINOR CONSTRUCTION, ALTERATIONS AND MODIFICATIONS

Projects in this category include:

- minor new construction (under \$1,000,000 in estimated cost), and
- alterations and modifications to buildings to meet programmatic objectives in the areas of research, collections management, exhibitions, and public services.

For FY 1990, the Smithsonian requests \$4,040,000 for the projects described below.

American History Building (\$700,000) - For FY 1990, the Institution requests funds for two projects in the American History Building: continued mezzanine installation in exhibit halls, and the renovation of the conservation laboratory.

The long-range exhibit reorganization plan for the National Museum of American History calls for construction of a mezzanine system in various galleries on the first through third floors of the building. The mezzanines will create space for study galleries in key exhibits. This will permit the public to view museum artifacts not normally on exhibit because of inadequate space. The Institution requests the amount of \$400,000 in FY 1990 for design and construction of a mezzanine in the first floor "Information" exhibit area. The work will include fabrication and construction of basic steel and concrete galleries around the perimeter of the exhibit hall, along with necessary stairs, handicapped lifts, and railings. On the east side of the third floor and with \$103,000 received in FY 1987, the Museum constructed a mezzanine for



the exhibit commemorating the Bicentennial of the Constitution. The Research Center in the present Dibner Library on the first floor is under construction with funds appropriated in FY 1988 (\$300,000) and FY 1989 (\$370,000). The Institution will request additional funding for a mezzanine in the third floor "Music" area in a future year.

The Smithsonian requests \$300,000 in FY 1990 to renovate the conservation laboratory. Laboratory facilities are currently located in two separate locations in the basement of the building in space which was not constructed to serve as a laboratory. The renovation will reorganize existing space to increase efficiency and to improve utilities, such as installing of fume hoods and upgrading the water supply and electrical service.

Natural History Building (\$1,125,000) - The Institution requests funding for the following projects at the Natural History Building:

- construction of a space suitable for the operations of a new national board and for receiving other advisors and dignitaries, and
- other priority projects, including: design and modifications to spaces freed by the move of objects to the Museum Support Center; demolition of one exhibit hall to prepare for a long overdue reinstallation planned by the Museum; space modifications for the new Molecular Systematics Laboratory at the Museum Support Center; installation of rest rooms in the west half of the Main Building; public checkroom improvements; and construction of a mezzanine for the Department of Mineral Sciences.

In 1987, the Museum conducted a management study to assess its strengths and weaknesses and to identify ways to ensure its preeminence and success in the future. As a result, the Museum has begun to integrate and strengthen its exhibitions and public programming in relationship to its acknowledged strengths in scholarship. The Museum is in the process of hiring staff to initiate and complete the planning, funding, and construction of modernized exhibits. The new exhibits will replace decades-old ones in the Museum and will include related interactive educational activities.

The new Director has established this new emphasis on exhibits and integrated programming as his highest priority for the Museum. A keystone to this emphasis is the establishment of a new national advisory board to provide guidance for this effort. The Museum must have appropriate space for the board-related activities. Unlike other major Smithsonian museums, the Museum of Natural History has never had a conference suite to accommodate national and international advisors, consultants, and other distinguished visitors and scholars, as well as for other public and staff gatherings. For FY 1990, the Smithsonian requests \$484,000 to design and renovate space for the expanded outreach activities of the new advisory body. The project includes the construction of a conference room, kitchen, dining room, and rest rooms. This project is pivotal to the new Director's plans to modernize the exhibits and expand public outreach. Additional funds will be sought in FY 1991 to complete this project.

The requested budget for the other priority projects described below is \$641,000. This request is insufficient to accomplish all of these projects. The new Director of the National Museum of Natural History arrives in mid-January 1989. At that time he will determine which aspects of these projects are the most urgent. The Museum will



request funding for aspects of the projects ranked lowest in priority by the Director in FY 1990 in the FY 1991 budget.

The continuing transfer to the Museum Support Center (MSC) of Natural History's collections presents a much needed opportunity to reorganize and renovate the space within the Museum Building to address the needs of growing programs. A space gridlock in the building can be relieved only by relocating various functions after first reconfiguring the newly vacated space to optimize its functionality. Unless funding is made available to the Museum to continue the reconfigurations of space and relocations of functions in the Natural History Building as space is freed by the transfer of objects to the MSC, severe crowding as well as inappropriate and inefficient use of space will continue to be a major problem.

The Smithsonian requests funding for the demolition of Exhibit Hall 10. The reinstallation of a new permanent exhibit in this hall is a high priority. When the new Director arrives, he will make the final decision on hall allocations for several new exhibits currently in the planning stage, and his decision will determine which of the several options will occupy Hall 10.

Congress provided funding in FY 1988 to establish a new program focusing on DNA molecular analysis. The space allocated for the Molecular Systematics Laboratory is at the Museum Support Center. Staffing of this facility has already begun. In order to provide the appropriate facilities for the scientists to conduct their molecular research, major modifications of this space are required. The space must be modified according to the standards of a biomedical facility to ensure that employees are working under safe conditions. The molecular botanists will also need a greenhouse adjacent to MSC. Planning of this facility will begin in FY 1990 and the Museum will request construction funds in FY 1991.

The Smithsonian requests funding to construct new restroom facilities to serve staff and contractors making deliveries to and working on the west half of the ground floor of the Main Building. There are no restroom facilities in an area that exceeds 50,000 square feet. This lack of accessibility imposes hardships on the staff and creates the potential for a security breach when the Museum allows contractors to enter areas near collections storage to use the nearest restrooms.

The present size of the public checkroom (210 square feet) at the south entrance of the Natural History Building is inadequate to accommodate the Museum's visitors. An electronic rack system will increase the storage capacity of the space and the modified entry will provide better traffic flow.

Construction of a mezzanine in Room 11-E will provide space for the micropreparation laboratory of the Department of Mineral Sciences next to the department's rock saw facility. This relocation will permit more productive use of both laboratories. The move also will allow the Department to convert the space currently occupied by the micropreparation laboratory to research space direly needed by the Department.

Arts and Industries Building (\$300,000) - The Arts and Industries (A&I) Building houses four major exhibition halls. The building also houses essential program and administrative activities on the Mall, including those activities which require public access, such as Public Affairs, Museum Programs, Elementary and Secondary Education, and the National Science Resources Center. Other central support organizations located in this building include: Protection Services, Information Resources

Management, Equal Opportunity, and Planning and Budget. Having decided that the Woodrow Wilson Center will not move into the A&I Building, the Institution does not plan a major change in the use of the building in the near future. There is an immediate and continuing need, however, to renovate space to offer more functional work areas for current administrative and program requirements. The Institution will use funds provided in FY 1988 and FY 1989 to begin renovation of space and acquisition of modular furniture. The Smithsonian requests \$300,000 for FY 1990 to modify approximately 5,000 square feet. Some of this funding will be used to modify space to house an additional occupational health clinic extension. The American History Building houses the main Health Unit.

American Art and Portrait Gallery Building (\$100,000) - The Institution requests \$100,000 to finish modifying the attic of the Museum of American Art begun in FY 1988. Urgently needed additional space with properly controlled temperature and humidity for storage of sculptures and paintings will result. The space formerly was unusable for collections' storage purposes because it lacked environmental control. Duct work on the floor also hampered access to the space. Construction rerouted the ducts across the ceiling, allowing more effective utilization of the space. AA/PG will use the amount requested for FY 1990 for construction of framing required for installation of storage racks.

Air and Space Building (\$380,000) - The Institution requests funds to finish renovating the vacated public cafeteria on the third floor and to study the requirements for electrical power distribution at the Air and Space Building.

The Smithsonian requests \$320,000 to renovate the space on the east wing of the third floor. The opening of the new National Air and Space Museum restaurant on the east terrace in August 1988 freed this space for other activities. The Museum plans to move the Center for Earth and Planetary Studies into this space. The Center has grown significantly in recent years in order to handle increasing requests from the Museum, other researchers, and the U. S. Government for information. The Museum will also consolidate in the third floor space public affairs, curatorial, and registrarial functions now scattered throughout the building. The Institution will use \$215,000 received in FY 1989 for design and construction required to provide more efficient work space for the Center for Earth and Planetary Studies. The additional amount of \$320,000 will continue alterations to space necessary to house the other consolidated functions. The Smithsonian expects to seek funding in FY 1991 to complete and equip an employee cafeteria which the Museum will relocate in the area.

The Institution requests the remaining \$60,000 to study the building's power distribution system to determine future power needs. Demands for electrical power have increased with more widespread use of computers and other electronic equipment in the Museum.

Silver Hill Facility (\$325,000) - Building 17 at the Paul E. Garber Facility in Suitland, Maryland, provides critical collection storage for the Museum of American History. The artifacts stored in the building do not require controlled climatic conditions. The building, however, needs some improvements to ensure secure storage. The proposed work involves repairing and insulating walls and roof, upgrading electrical wiring and fixtures, installing new space heaters, and installing smoke detection and sprinkler systems. The Institution is using \$500,000 provided in FY 1986 to remove asbestos insulation in the building and to construct an asbestos decontamination chamber outside the building for use in cleaning artifacts now stored there. The building is large enough to allow workers to undertake the construction in



two phases. The collection can be stored in one-half of the building while the other half undergoes renovation. In FY 1991, the Institution will request additional funding to complete the project.

Museum Support Center (\$285,000) - The loading dock at the Museum Support Center opens directly outdoors. This entrance is the sole access for most collections transferred from other locations for storage. The Institution requests \$285,000 in FY 1990 to construct an airlock enclosure around the loading dock area and the entrance to Pod 4. This enclosure will protect artifacts delivered to or loaded from the Center from exposure to weather conditions. Also, the controlled environment within the enclosure will reduce the chance for fluctuations in temperature and humidity within Pod 4 thereby conserving energy.

Smithsonian Environmental Research Center (\$100,000) - The Institution requests funding for construction of a greenhouse at the Smithsonian Environmental Research Center in Edgewater, Maryland. The Smithsonian plans to construct, at an estimated cost of \$100,000, a greenhouse addition to the Mathias Laboratory. The greenhouse will provide controlled growing conditions for research involving botanical specimens.

Anacostia Museum (\$20,000) - The Institution requests \$20,000 to install a new lighting system in the exhibit gallery of the Anacostia Museum. The new system will combine fluorescent and incandescent lights with edge lighting around the perimeter of the space. Museum personnel can adjust the proposed system to meet the lighting needs of different exhibits which they install in the space. The present lighting system does not provide this flexibility.

Cooper-Hewitt Museum (\$45,000) - The Smithsonian requests funds for a space planning study of the Miller House and to install a vestibule in the Carnegie Mansion of the Cooper-Hewitt Museum in New York City.

The Miller House is a five-story brownstone townhouse used mainly for Museum offices and collections storage. The building requires extensive repair, which the Institution will perform over the next several years. In addition, Cooper-Hewitt must modify the space to permit more effective use of the building for its programmatic activities. A space use study will outline the required space changes in a logical sequence with the established repair schedule to the building's physical plant. The estimated cost of this space study is \$35,000. The Institution will request additional funds in future years for construction.

The Institution seeks an additional \$10,000 to install a vestibule at the staff entrance to the Carnegie Mansion. The door currently opens directly to the outside. This exposes employees in adjacent areas to the elements and allows the rapid loss of heated or cooled air.

Smithsonian Astrophysical Observatory (\$200,000) - The Smithsonian has entered a five institution consortium to deploy an Infrared Optical Telescope Array (IOTA) on Mt. Hopkins. Combining received light from telescopes separated by baselines of 10 - 50 meters and processing the signal with newly developed optical detection and computer synthesis techniques, the IOTA will permit scientists to see much finer detail of distant stellar objects and thereby gain greater insight into the fundamental processes of the universe. In order to complete the project, it is necessary to provide site preparation and a shelter to house the instruments and the support utilities. The ground preparation will include trenches and support structures to

hold the telescope's transportable housings. The building with 500 square feet of area and controlled environmental conditions will house the optical and electronic signal processing and the control system. The Institution requests \$200,000 to conduct this work in FY 1990.

Photographic Services (\$200,000) - The Institution requests \$200,000 for expansion of a refrigerated storage room. This room houses the collection of photographic negatives maintained by the Office of Photographic Services in the American History Building. Long-term preservation of the collection requires controlled temperature and humidity conditions. The present film vault, located in the basement of the building, is no longer large enough to accommodate the growing collection of negatives. The Institution will install a prefabricated "Bally" type structure and expand the vault into the adjoining corridor.

Conservation Analytical Laboratory (\$20,000) - The Conservation Analytical Laboratory (CAL) has undergone staff growth in the past few years. CAL plans to add other professional staff, fellows, and interns. The present space at the Museum Support Center is inadequate for the additional people. Conversion of the current seminar room and a portion of the auditorium area will provide the laboratory and office space needed for the new staff. The Institution requests \$20,000 for FY 1990 to design these alterations.

Smithsonian Institution Archives (\$165,000) - The Smithsonian Institution Archives is experiencing a storage problem. With an annual growth of approximately 800 cubic feet of materials, the Archives is rapidly running out of space. The Archives proposes to modify a building available at the Conservation and Research Center at Front Royal to serve as a storage area for seldom used materials. The Smithsonian requests \$165,000 in FY 1990 to install an environmental room, or "Bally" box, in the interior of the building. Construction of this space will free much needed room on the Mall to accommodate growth for frequently used materials.

Alterations and Modifications Planning (\$75,000) - The Smithsonian requests \$75,000 to plan future minor construction, alterations and modifications projects. As in other categories of construction activities, such as Major Construction and Repair and Restoration of Buildings, the ability to plan is an essential ingredient of an effective facilities management program. These resources will allow the Institution to assess future requirements for minor changes to existing facilities to accommodate programmatic growth and changes in programmatic direction. Careful research into these future needs will result in more accurate cost estimates in advance of budget requests.







## SMITHSONIAN INSTITUTION

Annual Visitation  
FY 1984 - FY 1988

<u>MALL</u>	<u>FY 1984</u>	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
SI Building /1	966,191	1,046,151	1,035,653	1,160,655	228,409
Arts & Industries Building	1,046,480	1,048,089	1,047,397	1,228,911	1,458,532
National Museum of Natural History	6,336,796	5,691,681	5,962,073	7,886,520	7,365,665
National Air and Space Museum	15,123,914	9,160,371	7,752,544	7,750,323	9,237,847
Freer Gallery of Art	373,208	291,376	308,236	303,613	309,367
Sackler Gallery /2	-	-	-	7,095	547,874
National Museum of African Art /2	-	-	-	14,555	643,460
Ripley Center /2	-	-	-	4,674	518,763
National Museum of American History	5,392,718	4,858,483	5,143,334	5,626,565	6,359,369
Hirshhorn Museum and Sculpture Garden	980,944	1,059,050	1,057,753	1,033,629	1,278,052
<u>OFF-THE-MALL</u>					
American Art & Portrait Gallery	368,595	373,105	346,057	344,358	349,255
Renwick Gallery	129,989	124,684	124,850	218,047	143,020
National Museum of African Art /3	50,312	43,661	32,915	-	-
Anacostia Museum /4	22,681	21,603	36,314	12,668	37,682
Cooper-Hewitt Museum	131,690	112,442	190,751	152,618	140,839
Natl. Zoological Park /5	3,300,000	3,100,000	3,300,000	3,500,000	3,100,000
<b>GRAND TOTAL</b>	<b>34,223,518</b>	<b>26,930,696</b>	<b>26,337,877</b>	<b>29,244,231</b>	<b>31,718,134</b>

/1 Closed to the public January 1988.

/2 Opened to the public September 28, 1987.

/3 Off-Mall location closed to the public June 1986.

/4 Closed to the public January to April 1987 and reopened in May at a new location.

/5 Number of visitors is an estimate based on a sampling system.

## COLUMBUS QUINCENTENARY PROGRAMS

The Smithsonian's Columbus Quincentenary Program will commemorate the voyages of Columbus and the subsequent encounter between Europeans, Africans and indigenous peoples of the Americas. Through a program of exhibitions, scholarly and public symposia, and publications, the Smithsonian will examine the cultural, historical, and scientific implications of the hemispheric encounter.

One of the major goals of the Institution's program will be to highlight the experiences and contributions of all peoples affected by the Columbus landfall. The Smithsonian will offer a broader interpretation of the history of the Americas than the traditional Euro-centric one through the multidisciplinary perspectives of various bureaus taking part in Quincentenary activities. Contingent upon sufficient funds being obtained, the following describes the activities of the various participating bureaus and what activities have already taken place.

National Museum of Natural History: The National Museum of Natural History is planning a major exhibition organized around the concept "Seeds of Change." The exhibition will look at plant, animal and disease exchanges that occurred between the Old and New Worlds transforming the cultural and ecological landscape of the Americas. The Museum co-sponsored a public symposium "Americans Before Columbus: Ice Age Origins" during the Fall of 1987 with the Office of Quincentenary Planning. A second symposia in 1989 will examine issues concerning native population estimates and the controversies among scholars who are researching Indian demographic decline.

National Air and Space Museum: The National Air and Space Museum will publish a world atlas based on satellite images and a user's guide to the atlas by October 1992. Also, a planned exhibition titled "Where Next, Columbus?" will examine space exploration in the next 500 years, the solar system, the search for extraterrestrial life and the social and scientific programs that form a part of extensive exploration.

National Museum of American History: The National Museum of American History has three components to its Columbus Quincentenary program: (1) an annual series of small exhibitions and accompanying public forums; (2) a series of public programs in Hispanic American history; (3) and a major permanent exhibition titled "American Encounters" to open in March 1992. "American Encounters" will focus on the encounters among European, indigenous, and African American cultures in the United States during the 17th, 18th, 19th and 20th centuries. This exhibition will emphasize the northern rim of Spanish America and the development of Hispanic culture in the United States. In September 1987, a public forum titled "After Columbus: Encounters in North America" presented historic archaeological evidence of early European settlement and trade patterns. A second forum examined American Indian perceptions of European colonists in April 1988. Also in 1987 through 1988, the Museum's Program in Hispanic American History presented four different programs exploring the history of Hispanic Americans, their contributions to labor, music and theater, and the experiences of women and youth.

National Museum of American Art: The National Museum of American Art is organizing an exhibition titled "Westward Expansion: Views of the Promised Land." Through major paintings of the mid- and late-nineteenth century, the exhibition will examine the myths that fomented a national bias for expansion.

National Portrait Gallery: The National Portrait Gallery is developing an exhibition of the portrait treasures of Spain with the Kimbell Museum in Fort Worth and the Museo de Prado in Madrid. The exhibition will present more than 50 works by artists during the 16th-century reign of Philip II.



Hirshhorn Museum & Sculpture Garden: The Hirshhorn Museum and Sculpture Garden will feature an exhibition of works by 20th-century Latin American artists who have explored new frontiers of expression.

Cooper-Hewitt Museum: The Cooper-Hewitt Museum will explore the influence of native American arts and design on European design arts through an exhibition of selected materials, including ceramics, textiles, metalwork and architectural design.

Smithsonian Institution Traveling Exhibition Service: The Smithsonian Institution Traveling Exhibition Service will design and distribute traveling versions of exhibitions. Among them are versions of "Tropical Rainforests," the Museum of Natural History's exhibition "Seeds of Change" and "Columbus in America," an exhibit around the iconography of Christopher Columbus.

Office of Quincentenary Planning: The Office of Quincentenary Planning (OQP) provides Institution-wide planning and central support for the broad range of programs commemorating this international anniversary. OQP, in collaboration with the National Museum of Natural History, presented the symposium "America Before Columbus: Ice Age Origins" in September 1987. The OQP is developing curriculum materials based on the symposium to teach children and adults about the first humans in North America. "Musical Repercussions of 1492," a symposium examining the America's diverse musical history, was presented on March 10-13, 1987. SI Press will publish the symposium's proceedings. A symposium titled "Violence and Resistance in the Americas: The Legacy of Conquest" will occur on May 5-6, 1989. This symposium will examine the foreign imposition of legal, literary, philosophical and religious systems on indigenous cultures and the affects of those pressures.

The Native American Outreach Program of the OQP will develop a traveling exhibition centered around the theme of ethnobotany to tour American Indian reservations, schools and community centers. The Office is also developing a newsletter with news about the Smithsonian's Quincentenary research, planning and programs. OQP will publish the newsletter quarterly in English, Spanish and Portuguese and will distribute it internationally.

Office of Folklife Programs: The Office of Folklife Programs is presenting a series of three symposia exploring social and cultural expressions that emerge from the production of important crops and subsistence systems in the New World. In September 1988, the Office presented the first symposium, "Seeds of the Past," and focused on indigenous crop systems and on the social and cultural expressions arising from their production. In 1989, "Seeds of Commerce," will deal with social and cultural expressions resulting from the development of commercial crops, such as sugar, coffee and tobacco, in the Caribbean area. The third symposium, "Seeds of Industrialization" will deal with the social and cultural expressions arising from the industrial uses of plants and will be presented in 1990. The symposia will lead toward "living exhibitions" focusing on the Caribbean and indigenous America to be presented on the National Mall during 1989 and 1991. In 1992, the interplay of Native American, African, European and Asian people in the Americas will be the focus of "living exhibitions". Additional products that will result from the symposia and "living exhibitions" include publications, Smithsonian Radio programs, sound recordings and films.

Office of Elementary and Secondary Education: The Office of Elementary and Secondary Education will develop a series of multi-cultural education packets written in English, Spanish and Portuguese. The packets will introduce pre-school age

children to the cultural and animal life of the Americas. In addition to this project, the OESE will develop curriculum materials around the themes of a special Quincentenary television series.

Other planned Quincentenary programs include: the Anacostia Museum's exhibition and associated activities surveying cultural exchanges between Africa and the New World; a public symposium "Exploring the Unknown" sponsored by the Office of Interdisciplinary Studies; training sessions for museum professionals from Latin America and the Caribbean conducted by the Office of Museum Programs; and an international symposium, co-sponsored by the Smithsonian Tropical Research Institute (STRI), titled "Non-Imperial Polities" that allow experts in the fields of archeology, paleo-environmental studies and ethnohistory to share their research. STRI will also host the Fourth World Congress on National Parks for the International Union for Conservation of Nature and Natural Resources (to be held in Panama in 1992 to commemorate the Columbus Quincentenary).

The Smithsonian Press, the Resident Associates Program, and the National Associates Program also plan various Quincentenary activities. In addition, several Smithsonian bureaus are collaborating on a five-part television series, "The Buried Mirror," written and narrated by Mexican author Carlos Fuentes, which will examine Spanish and indigenous contributions to the Americas and the emergence of "new cultures" in both historical and contemporary contexts.

The accompanying table identifies Federal funding appropriated in FY 1987 through FY 1989 and requested for FY 1990 to support Columbus Quincentenary programs:

SMITHSONIAN INSTITUTION  
FEDERAL FUNDING FOR COLUMBUS QUINCENTENARY PROGRAMS  
FY 1987 - FY 1990

	FY 1988 Approp.	FY 1989 Approp.	FY 1990 Estimate
	\$000s	\$000s	\$000s
National Museum of Natural History	80	130	130
National Air and Space Museum	30	41	41
National Museum of American History	80	125	125
National Museum of African Art	0	25	25
National Portrait Gallery	15	15	15
Hirshhorn Museum and Sculpture Garden	20	20	20
Cooper-Hewitt Museum	0	24	24
Smithsonian Institution Traveling Exhibition Service	25	55	55
Smithsonian Institution Press	0	0	0
Office of Quincentenary Programs	50	50	50
Office of Folklife Programs	40	90	90
Office of Elementary and Secondary Education	0	38	38
Total Smithsonian Institution	340	613	613

SMITHSONIAN INSTITUTION  
MUSEUM PROGRAMS AND RELATED RESEARCH  
(SPECIAL FOREIGN CURRENCY PROGRAM)

1988 Appropriation.....	-0-	—		
1989 Appropriation.....	-0-			-- Equivalent in Excess
1990 Estimate.....	-0-	—		Foreign Currencies

PROGRAM OF GRANTS FOR RESEARCH

The Smithsonian Institution, through its Special Foreign Currency Program, makes grants to United States universities, museums, and other institutions of higher learning, including the Smithsonian itself, primarily for research and advanced professional training in fields of traditional Smithsonian competence.

Excess currencies appropriations directly funded this program through FY 1986. Outlays from the budget authority appropriated through FY 1986, including the Forward-Funded Reserve for the American Institute of Indian Studies, will continue into the mid-1990s. In addition, beginning in FY 1986, the Smithsonian has received allocations of U.S.-owned Indian rupees from the funds appropriated to the Department of State in FY 1985 for the establishment of the U.S.-India Fund for Educational, Cultural, and Scientific Cooperation. (OMB Bulletin 89-01, issued on October 3, 1988, indicates that the Secretary of the Treasury has designated Burma as an excess currency country for FY 1989 and FY 1990.)

For more than 20 years, the Smithsonian program has been a major source of support for research carried out by United States institutions in those countries for which excess foreign currencies are available. The full responsibility for the design, execution, and publication of research results rests with a scholar working within the program of a United States institution. Smithsonian foreign currency grants strengthen the research and training activities of collaborating institutions abroad, since most projects directly involve host country institutions and scholars. Enduring professional ties, which result from joint efforts and scholarly exchange, contribute to the strongest form of United States cultural relations with other nations. Also, these ties contribute to the integration of the worldwide advancement of science. Accordingly, these ties narrow the gap between the industrial and the developing nations.

The rapid growth of world population and technological development have significantly affected the natural environment and society. Research sponsored by the Smithsonian through this Program, aims, in part, at improving understanding of the environment and improving the management and conservation of scarce natural and cultural resources.

In FY 1988, ongoing research supported by these grants included the following projects of special interest:

Archeological and geomorphic studies at Harappa in Pakistan are providing new information on the pre-historic settlements of the Lower Indus valley;

An ongoing exchange between Indian and United States astronomers is providing answers to questions in the application of nuclear, elementary, and relativistic physics to astrophysics;



Comparative studies of dance orientation and vision in Asian honey bees are providing new perspectives on how bees and other insects process visual information in orienting their movements;

An exchange between United States and Pakistani folklorists, anthropologists, and linguists is providing Pakistani researchers with access to current Western research techniques in music, foodways, language, and art;

Examination of archeological sites in Burma is bringing to light the importance of Burma in the early formation of regional styles of art and architecture in Southeast Asia.

Further, with emphasis on the exchange of information through small workshops, symposia, and field conferences, the Smithsonian is encouraging international research in specialized areas. In FY 1988, for example, United States scholars received support for participation in exchanges on the subjects of environmental education, astronomy, sociology, soil zoology, visual anthropology, Rajasthani studies, and zoo management.

#### FORWARD-FUNDED RESERVE FOR THE AMERICAN INSTITUTE OF INDIAN STUDIES

Since 1967, the Smithsonian has provided annual funding through the Special Foreign Currency Program to the American Institute of Indian Studies (AIIS) for its fellowships, research, symposia, and publications programs, as well as its administrative costs. The Smithsonian has helped sustain this Institute and other American research centers abroad for the last 20 years because of their significant contributions to scholarship and science without regard for national boundaries and their special service to American scholars.

With Special Foreign Currency Program funding received from FY 1980 through FY 1985, the Smithsonian established a forward-funded reserve of \$7,170,000 equivalent in rupees. This reserve enabled the AIIS to sustain its programs after the removal of India from the excess currency list in 1985. Beginning in FY 1986, the AIIS, with oversight from the Smithsonian, has drawn upon the funds from this reserve for its fellowship program and administration costs in India. The Institution continues to examine annual proposals through its peer review system before releasing funds from the reserve account to AIIS. The reserve should support AIIS programs through the 1990s in conjunction with continued support from the U.S.-India Fund.

#### U.S. - INDIA FUND FOR EDUCATIONAL, CULTURAL, AND SCIENTIFIC COOPERATION

In FY 1985, Congress appropriated \$110 million equivalent in U.S.-owned Indian rupees to the Department of State to establish the U.S.-India Fund for Educational, Cultural, and Scientific Cooperation. Beginning in FY 1986, the Smithsonian has received allocations from this fund to continue programs in India similar to those administered under the Special Foreign Currency Program, which would otherwise have ended when India lost excess currency status in 1985. The Institution received an



amount of \$1.4 million in FY 1986, \$1.5 million in FY 1987, and \$1.8 million in FY 1988. The Smithsonian expects an amount of \$2 million for FY 1989.

SMITHSONIAN INSTITUTION - FINANCIAL SUMMARY  
Fiscal Years 1988 - 1990

(\$1,000s)

	FY 1988 Actual	FY 1989 Projected	FY 1990 Budget
	-----	-----	-----
SI OPERATING FUNDS			
=====			
FUNDS PROVIDED:			
FEDERAL APPROP. - S&E	201,432	211,240	227,737
GOVERNMENT GRANTS & CONTRACTS	17,438	23,481	29,970
NON-APPROP. TRUST FUNDS			
Investment Income			
-Unrestr. General & Special Purpose	7,533	5,300	6,900
-Restricted	6,085	4,994	6,616
Gifts & Grants (Ex. Gifts to Endow)			
-Unrestr. General & Spec. Purpose	1,037	250	1,550
-Restricted	15,980	10,442	14,309
Self-Generated Revenues			
Institutional (Gen. Unrest.)			
-Gross Revenues	177,626	192,235	203,555
-Less Related Expenses	(149,523)	(165,735)	(175,935)
-Net Income	28,103	26,500	27,620
Bureau (Special Purpose)			
-Gross Revenues	8,939	8,989	11,966
-Less Related Expenses	(7,887)	(7,801)	(10,590)
-Net Income	1,052	1,188	1,376
Other Misc. - Unrestricted	3,685	1,575	2,360
-Restricted	4,267	1,200	1,000
Total Non-Approp. Trust Funds - Gross	225,152	224,985	248,256
-Net of Exps. of Self-Gen. Revs.	67,742	51,449	61,731
TOTAL ALL OPER. FUNDS PROVIDED:			
-Gross	444,022	459,706	505,963
-Net	286,612	286,170	319,438
FUNDS APPLIED:			
Research	60,960	69,322	76,416
Less: SAO Overhead Recovery	(2,731)	(3,850)	(3,850)
Museums	104,285	100,168	109,844
Public Service	6,279	5,449	5,601
International Activities	1,217	1,784	2,064
Special Programs	11,552	22,301	26,407
External Affairs	1,622	2,195	2,981
Administration			
-Federal Appropriation	16,258	18,058	30,472
-Trust Funds	12,390	13,591	15,600
Less: SI Overhead Recovery	(9,695)	(11,270)	(12,120)
Facilities Services	60,651	62,713	64,942
TOTAL OPERATING FUNDS APPLIED	262,788	280,461	318,357
TRANSFERS (Non-Approp. Trust Funds)			
To Plant Funds	178	-	-
To Endowment Funds			
Unrestricted Purpose	6,311	3,001	3,000
Restricted Purpose	10,033	652	470
Total Transfers	16,522	3,653	3,470
CHANGE IN FUND BALANCE			
Unrest. & Special Purpose	4,495	1,423	1,045
Restricted (Incl. Fed. Grants & Contr.)	2,807	633	931
Total	7,302	2,056	1,976
=====			
FUND BALANCES - END OF YEAR			
Unrestricted & Special Purpose	43,430	44,853	46,994
Restricted (Incl. Fed Grants & Contr.)	16,576	17,209	17,840
Total Operating Fund Balances	60,006	62,062	64,834
=====			
OTHER FEDERAL APPROPRIATIONS			
-Construction	28,719	34,695	43,153
TOTAL FEDERAL APPROPRIATIONS	230,151	245,935	270,890
=====			

## SMITHSONIAN INSTITUTION

Appropriation: Salaries and Expenses

## Appropriation language and citations:

20 U.S.C. 41 provides for the establishment and operation of the Smithsonian Institution "...for the increase and diffusion of knowledge among men..." This section delineates the full scope of Smithsonian authority. Examples of secondary authorities within this primary authority may be cited as follows:

1. For necessary expenses of the Smithsonian Institution, as authorized by law, including research in the fields of art, science, and history;

20 U.S.C. 50, 53a, 69, 75b, 76bb, 77a, 78, 80a, 80m provide that (1) "...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be so arranged and classified...as best to facilitate the examination and study of them..." (2) "Appropriations are authorized for...the making of solar observations at high altitudes..." (3) "The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation anthropological researches among the American Indians and the natives of lands under the jurisdiction or protection of the United States..." (4) "The Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary depicting men and women who have made significant contributions to the history, development, and culture of the people of the United States and of the artists who created such portraiture and statuary." (5) "The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art..." (6) "The national air and space museum shall...provide educational material for the historical study of aviation and space flight." (7) "The Secretary of the Smithsonian Institution is authorized to cooperate with any State, educational institution, or scientific organization in the United States for continuing paleontological investigations..." (8) "It shall be equipped with a study center for scholarly research into the meaning of war, its effect on civilization, and the role of the Armed Forces..." (9) "...the Board may...conduct programs of research and education (in the Museum of African Art)..."

2. development, preservation, and documentation of the National Collections;

20 U.S.C. 50, 50a, 59, 69, 75e, 76c, 76cc(a), 77a, 80a, 80m, 81 provide that (1) "...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be delivered to such persons as may be authorized by the Board of Regents to receive them, and shall be so arranged and classified...as best to facilitate the examination and study of them..." (2) "The Smithsonian Institution is authorized to include in its estimates of appropriations such sums as may be needful for the preservation and maintenance of the John Gellatly art collection." (3) "All collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology...when no longer needed for investigations in progress shall be deposited in the National Museum." (4) "The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation...the excavation and preservation of archaeological remains." (5) "...the Board may - (1) purchase, accept, borrow, or otherwise acquire

portraiture, statuary, and other items for preservation, exhibition, or study." (6) "...the Regents are authorized...to acquire (by purchase or otherwise) and sell contemporary works of art or copies thereof..." (7) "There is established in the Smithsonian Institution a Board of Trustees...which shall have the sole authority (i) to purchase or otherwise acquire...works of art for the Joseph H. Hirshhorn Museum and Sculpture Garden..." (8) "The national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance..." (9) "...the Smithsonian Institution shall collect, preserve, and exhibit military objects of historical interest and significance." (10) "The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized to transfer to it any living specimens, whether of animals or plants, in their charge, to accept gifts for the park...to make exchanges of specimens..." (11) "...the Board may purchase, accept, borrow or otherwise acquire additional works of art or any other real or personal property for the Museum (of African Art); preserve, maintain, restore...or otherwise hold any property of whatsoever nature acquired..."

3. presentation of public exhibits and performances;

20 U.S.C. 75b, 76c, 76bb, 77a, 80a, 80m provide that (1) "The Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary..." (2) "In order to encourage the development of contemporary art and to effect the widest distribution and cultivation in matters of such art, the Regents are authorized to...conduct exhibitions..." (3) "The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art..." (4) "The national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance..." (5) "...the Smithsonian Institution shall collect, preserve and exhibit military objects of historical interest and significance. (6) "...the Board may...display...any property of whatsoever nature acquired (for the Museum of African Art)..."

4. collection, preparation, dissemination, and exchange of information and publications;

20 U.S.C. 53a provides that "Appropriations are authorized for the...preparation of manuscripts, drawings, and illustrations for publication."

44 U.S.C. 1719 provides that "For the purpose of more fully carrying into effect the convention concluded at Brussels on March 15, 1886, and proclaimed by the President of the United States on January 15, 1889, there shall be supplied to the Library of Congress not to exceed one hundred and twenty-five copies each of all Government publications, including the daily and bound copies of the Congressional Record, for distribution, through the Smithsonian Institution, to foreign governments which agree to send to the United States similar publications of their governments for delivery to the Library of Congress."

5. conduct of education, training, and museum assistance programs;

20 U.S.C. 65a provides "The Director of the National Museum under the direction of the Secretary of the Smithsonian Institution shall - (1) cooperate with museums and their professional organizations in a continuing study of museum problems and opportunities, both in the United States and abroad; (2) prepare and



carry out programs by grant, contract, or directly for training career employees in museum practices...(3) prepare and distribute significant museum publications; (4) perform research on, and otherwise contribute to, the development of museum techniques..."

20 U.S.C. 77a provides that "The national air and space museum shall...provide educational material for the historical study of aviation and space flight."

20 U.S.C. 79a provides that "The purpose of setting aside such an area [Barro Colorado Island] is to preserve and conserve its natural features...thus providing a place where duly qualified students can make observations and scientific investigations for increase of knowledge, under such conditions and regulations as may be prescribed by the Smithsonian Institution."

20 U.S.C. 79e as amended by P.L. 96-89 and P.L. 98-57 provides that "There are authorized to be appropriated annually... such sums as are necessary for the administration of sections 79-79e of this title and for the maintenance of laboratory or other facilities..."

The Panama Canal Treaty and ancillary agreements vest in the Smithsonian Tropical Research Institute responsibility to serve as custodian of the Barro Colorado Nature Monument. The Panama Canal Act of 1979, P.L. 96-70, implements the provisions of the Panama Canal Treaty.

20 U.S.C. 80m provides that "...the Board may...conduct programs of research and education (in the Museum of African Art)..."

- 6.. maintenance, alteration, operation, lease (for terms not to exceed ten years), and protection of buildings, facilities, and approaches;

20 U.S.C. 53a, 76g, 76ee, 80m, 81 provide that (1) "Appropriations are authorized for the maintenance of the Astrophysical Observatory and...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere..." (2) "There are authorized to be appropriated annually such sums as may be necessary to maintain and administer the Gallery..." (3) "There is authorized to be appropriated...such additional sums as may be necessary for the maintenance and operation of such museum and sculpture garden." (4) "The Smithsonian Institution shall...be responsible for the construction and maintenance of laboratory and other facilities on the area provided for the use of students authorized to carry on studies within the confines of the area..." (5) "...the Board may...preserve, maintain...any property of whatsoever nature acquired (for the Museum of African Art)..." (6) "The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people."

- 7.. not to exceed \$\_\_\_\_\_for services as authorized by 5 U.S.C. 3109;

5 U.S.C. 3109 provides that "When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services."

8. up to 5 replacement passenger vehicles;

31 U.S.C. 638a provides that "Unless specifically authorized by the appropriation concerned or other law, no appropriation shall be expended to purchase or hire passenger motor vehicles for any branch of the Government other than those for..."

9. purchase, rental, repair, and cleaning of uniforms for employees;

5 U.S.C. 5901 provides that "There is authorized to be appropriated annually to each agency of the Government of the United States...on a showing of necessity or desirability, an amount not to exceed \$125 multiplied by the number of employees of the agency who are required by regulation or statute to wear a prescribed uniform in the performance of official duties and who are not being furnished with the uniform."

40 U.S.C. 193t provides that "The special police provided for in section 193n of this title [Smithsonian Institution]...may be furnished, without charge, with uniforms and such other equipment as may be necessary for the proper performance of their duties..."

10. of which not to exceed \$\_\_\_\_\_ for the instrumentation program shall remain available until expended

Wording added by the Congress in Public Law 100-446 making appropriations for the Department of the Interior and related agencies for the fiscal year 1989 to permit the Institution to establish a no-year sub-account within the Salaries and Expenses account for the development of major scientific instrumentation.

31 U.S.C. 718 provides "No specific or indefinite appropriation made subsequent to August 24, 1912, in any regular annual appropriation Act shall be construed to be permanent or available continuously without reference to a fiscal year unless it belongs to one of the following...or unless it is made in terms expressly providing that it shall continue available beyond the fiscal year for which the appropriation Act in which it is contained makes provision."

11. and, including such funds as may be necessary to support American overseas research centers and a total of \$\_\_\_\_\_ for the Council of American Overseas Research Centers:

Wording added by the Congress in Public Law 99-190 making appropriations for Department of Interior and Related Agencies in 1986. Public Law 100-446 making appropriations for the Department of the Interior and Related Agencies for the fiscal year 1989 modified reference to add specific dollar sum to be provided to the Council of American Overseas Research Centers.

12. Provided, That funds appropriated herein are available for advance payments to independent contractors performing research services or participating in official Smithsonian presentations.

31 U.S.C. 529 provides that "No advance of public money shall be made in any case unless authorized by the appropriation concerned or other law."

SMITHSONIAN INSTITUTION

Appropriation: Construction and Improvements,  
National Zoological Park

Appropriation language and citations:

1. For necessary expenses of planning, construction, remodeling, and equipping of buildings and facilities at the National Zoological Park,

20 U.S.C. 81 provides that "The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people."

2. by contract or otherwise,

Wording for clarification only.

3. to remain available until expended.

31 U.S.C. 718 provides "No specific or indefinite appropriation made subsequent to August 24, 1912, in any regular annual appropriation Act shall be construed to be permanent or available continuously without reference to a fiscal year unless it belongs to one of the following...or unless it is made in terms expressly providing that it shall continue available beyond the fiscal year for which the appropriation Act in which it is contained makes provision."

SMITHSONIAN INSTITUTION

Appropriation: Restoration and Renovation of Buildings

Appropriation language and citations:

1. For necessary expenses of restoration and renovation of buildings owned or occupied by the Smithsonian Institution, by contract or otherwise, as authorized by section 2 of the Act of August 22, 1949 (63 Stat. 623),

20 U.S.C. 53a provides that "Appropriations are authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere..."

2. including not to exceed \$\_\_\_\_\_ for services as authorized by 5 U.S.C. 3109,

5 U.S.C. 3109 provides that "When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services."

3. to remain available until expended:

31 U.S.C. 718 provides "No specific or indefinite appropriation made subsequent to August 24, 1912, in any regular annual appropriation Act shall be construed to be permanent or available continuously without reference to a fiscal year unless it belongs to one of the following...or unless it is made in terms expressly providing that it shall continue available beyond the fiscal year for which the appropriation Act in which it is contained makes provision."

4. Provided, That contracts awarded for environmental systems, protection systems, and exterior repair or restoration of buildings of the Smithsonian Institution may be negotiated with selected contractors and awarded on the basis of contractor qualifications as well as price.

Wording added to allow for negotiations with the most competent firms for restoration and renovation work where it can be certified that such work must be performed to meet the special needs of historic structures, the protection of collections, or public safety.



SMITHSONIAN INSTITUTION

Appropriation: Construction

Appropriation language and citations:

1. For necessary expenses for construction,

20 U.S.C. 53a provides that "Appropriations are authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere..."

2. to remain available until expended:

31 U.S.C. 718 provides "No specific or indefinite appropriation made subsequent to August 24, 1912, in any regular annual appropriation Act shall be construed to be permanent or available continuously without reference to a fiscal year unless it belongs to one of the following...or unless it is made in terms expressly providing that it shall continue available beyond the fiscal year for which the appropriation Act in which it is contained makes provision."

3. Provided, That notwithstanding any other provision of law, the Institution is authorized to transfer to the State of Arizona, the counties of Santa Cruz and/or Pima, a sum not to exceed \$\_\_\_\_\_ for the purpose of assisting in the construction or maintenance of an access to the Whipple Observatory.

Wording added to allow the Institution to transfer funds from within this account to assist in providing access to the Whipple Observatory in Arizona.

FY 1989 APPROPRIATION  
=====

(Dollars in Thousands)	UNIT	FY 1989 CONGRESSIONAL APPROPRIATION				TWO LESS PAYDAYS		NEW HIRE LAPSE		GRADE TARGET REDUCTION		FERS/HEALTH/SAO /1		REPRO-GRAMMINGS		REVISED FY 1989 APPROPRIATION	
		CONGRESSIONAL APPROPRIATION	WITHIN GRADE	WITHIN GRADE	TWO LESS PAYDAYS	NEW HIRE LAPSE	GRADE TARGET REDUCTION	FERS/HEALTH/SAO /1	REPRO-GRAMMINGS	REVISED FY 1989 APPROPRIATION							
	RESEARCH																
	Assistant Secretary for Research	1,229	(14)	(1)	(1)	0	(2)		(23) /3	16						1,205	
	Astrophysical Observatory	10,416	(101)	(2)	(2)	(49)	(13)		0	470						10,721	
	Smithsonian Tropical Research Institute	5,716	(56)	(1)	(1)	(10)	(4)		0	93						5,738	
	Smithsonian Environmental Research Center	1,413	(13)	0	0	0	(1)		0	19						1,418	
	National Zoological Park	13,840	(178)	(4)	(4)	(79)	(10)		132 /4	347						14,048	
	Smithsonian Institution Archives	644	(9)	0	0	0	(1)		(51) /5	17						600	
	Smithsonian Institution Libraries	5,054	(53)	(1)	(1)	(5)	(5)		33 /6	138						5,161	
	Major Scientific Instrumentation	1,206	0	0	0	0	0		0	0						1,206	
	Subtotal	39,518	(424)	(9)	(9)	(143)	(36)		91	1,100						40,097	
	MUSEUMS																
	Assistant Secretary for Museums /2	1,611	(14)	0	0	0	(2)		0	38						1,633	
	National Museum of Natural History	26,009	(319)	(7)	(7)	(129)	(38)		60 /7	716						26,292	
	National Air and Space Museum	9,497	(124)	(3)	(3)	(38)	(11)		0	231						9,552	
	National Museum of American History	14,312	(192)	(4)	(4)	(35)	(21)		0	442						14,502	
	National Museum of American Art	5,297	(63)	(1)	(1)	(9)	(7)		0	247						5,464	
	National Portrait Gallery	4,068	(49)	(1)	(1)	(9)	(5)		0	127						4,131	
	Hirshhorn Museum and Sculpture Garden	3,409	(39)	(1)	(1)	0	(3)		0	91						3,457	
	Arthur M. Sackler Gallery/Freeer Gallery of Art	4,242	(36)	(1)	(1)	0	(4)		0	99						4,300	
	Archives of American Art	1,100	(16)	0	0	(7)	(2)		0	23						1,101	
	Cooper-Hewitt Museum	1,193	(16)	0	0	(9)	(1)		27 /8	51						1,245	
	National Museum of African Art	3,535	(29)	(1)	(1)	(16)	(2)		0	81						3,568	
	Anacostia Museum	1,016	(10)	0	0	(13)	(1)		0	18						1,010	
	Conservation Analytical Laboratory	2,456	(26)	(1)	(1)	0	(4)		0	94						2,519	
	Office of Exhibits Central	1,882	(25)	(1)	(1)	0	(2)		0	46						1,900	
	Smithsonian Traveling Exhibition Service	667	(8)	0	0	0	(1)		0	30						688	
	Subtotal	80,294	(963)	(21)	(21)	(265)	(104)		87	2,334						81,362	
	PUBLIC SERVICE																
	Assistant Secretary for Public Service	1,294	(17)	(1)	(1)	0	(2)		0	24						1,298	
	Smithsonian Institution Press	1,226	(19)	(1)	(1)	0	(2)		0	35						1,239	
	Subtotal	2,520	(36)	(2)	(2)	0	(4)		0	59						2,537	
	INTERNATIONAL ACTIVITIES /9	884	(8)	0	0	0	0		(147) /10	62						791	
	SPECIAL PROGRAMS																
	American Studies and Folklife Programs	912	(8)	0	0	(9)	(1)		0	14						908	
	International Environmental Science Program	757	(4)	0	0	0	0		0	17						770	
	Academic and Educational Programs	1,093	(13)	0	0	(7)	(2)		28 /11	71						1,170	
	Museum Support Center	4,419	(18)	0	0	(24)	0		0	42						4,419	
	Subtotal	7,181	(43)	0	0	(40)	(3)		28	144						7,267	

(Dollars in Thousands)

UNIT	FY 1989 CONGRESSIONAL APPROPRIATION	WITHIN GRADE	TWO LESS PAYDAYS	NEW HIRE LAPSE	GRADE TARGET REDUCTION	FERS/HEALTH/ SAO /1	REPRO- GRAMMINGS	REVISED FY 1989 APPROPRIATION
ADMINISTRATION	21,362	(209)	(4)	(268)	161	(2,785)	(159)	18,098
FACILITIES SERVICES								
Office of Design and Construction	2,620	(30)	(1)	(63)	(5)	33	(50)	2,504
Office of Protection Services	20,717	(275)	(6)	(105)	(5)	762	0	21,088
Office of Plant Services	37,168	(242)	(5)	(92)	(4)	521	150	37,496
Subtotal	60,505	(547)	(12)	(260)	(14)	1,316	100	61,088
Within Grades	(2,230)	2,230						0
Two less paydays	(48)		48					0
Lapse	(976)			976				0
FERS/Health/SAO Equipment	2,230					(2,230)		0
GRAND TOTAL	211,240	0	0	0	0	0	0	211,240

- /1 DISTRIBUTION OF FUNDS APPROPRIATED BY THE CONGRESS FOR SAO COMPUTER EQUIPMENT AND INCREASED COSTS RELATED TO HEALTH INSURANCE PREMIUMS AND THE FEDERAL EMPLOYEES' RETIREMENT SYSTEM.
- /2 INCLUDED WITHIN THIS LINE ITEM IS \$500,000 TO CONTRACT WITH THE CAPITAL CHILDREN'S MUSEUM FOR A NATIONAL EDUCATIONAL OUTREACH PROGRAM.
- /3 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION TO THE NATIONAL MUSEUM OF NATURAL HISTORY, ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, AND ONE POSITION TO THE NATIONAL SCIENCE RESOURCE CENTER.
- /4 REFLECTS THE PERMANENT TRANSFERS OF: TWO POSITIONS FROM INTERNATIONAL ACTIVITIES AND ONE POSITION FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY.
- /5 REFLECTS THE TRANSFER OF APPROPRIATED FUNDS FOR RENT COSTS TO THE CENTRAL RENTAL ACCOUNT.
- /6 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION TO THE COOPER-HEWITT MUSEUM, TWO POSITIONS FROM THE OFFICE OF PUBLICATIONS EXCHANGE, AND ONE POSITION FROM INTERNATIONAL ACTIVITIES.
- /7 REFLECTS PERMANENT TRANSFER OF ONE POSITION TO THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /8 REFLECTS PERMANENT TRANSFER OF ONE POSITION FROM THE SMITHSONIAN INSTITUTION LIBRARIES.
- /9 INCLUDES FUNDING OF \$125,000 FOR COUNCIL OF OVERSEAS RESEARCH CENTERS.
- /10 REFLECTS PERMANENT TRANSFERS OF: TWO POSITIONS TO THE NATIONAL ZOOLOGICAL PARK AND THREE POSITIONS TO THE SMITHSONIAN INSTITUTION LIBRARIES.
- /11 REFLECTS PERMANENT TRANSFER OF ONE POSITION FROM THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH.
- /12 REFLECTS PERMANENT TRANSFERS OF: ONE POSITION FROM THE OFFICE OF INFORMATION RESOURCE MANAGEMENT TO THE OFFICE OF FINANCIAL MANAGEMENT AND PLANNING AS MANDATED BY CONGRESS, ONE POSITION FROM THE OFFICE OF PLANNING AND BUDGET, ONE POSITION TO THE NATIONAL ZOOLOGICAL PARK, ONE POSITION TO THE OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH, AND APPROPRIATED FUNDS FOR INCREASED RENT COSTS FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY AND THE OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT TO THE CENTRAL RENTAL ACCOUNT.
- /13 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS TO CENTRAL RENTAL ACCOUNT.
- /14 REFLECTS PERMANENT TRANSFER OF APPROPRIATED FUNDS FOR RENT COSTS TO S.I. ARCHIVES, OFFICE OF ENVIRONMENTAL MANAGEMENT AND SAFETY, OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT, AND THE OFFICE OF DESIGN AND CONSTRUCTION TO THE CENTRAL RENTAL ACCOUNT.







SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01680 3355