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SMITHSONIAN INSTITUTION

Fiscal Year 1986

Justification of Estimates of Appropriations
To the Office of Management and Budget



ADMINISTRATIVELY CONFIDENTIAL

(Information not to be released until after the President's
Budget is submitted to the Congress in January 1985.)

September 1984

LIST OF DISTRIBUTION OF BOOKS

Science

- 3110 Assistant Secretary for Science - 3 ✓
- 1900 Office of Fellowships and Grants - 2 ✓
- 3300 National Museum of Natural History - 3 ✓
- 3400 Smithsonian Tropical Research Institute - 2 ✓
- 3500 National Zoological Park - 5 ✓
- 3600 Smithsonian Environmental Research Center - 3 ✓
- 3800 National Air and Space Museum - 2 ✓
- 4000 Smithsonian Astrophysical Observatory - 2 ✓

affairs

History & Art

- 5100 Assistant Secretary for History and Art - 3 ✓
- 5200 National Portrait Gallery - 2 ✓
- 5300 National Museum of American Art - 2 ✓
- 5400 Freer Gallery of Art - 2 ✓ *Center for Asian*
- 5500 National Museum of American History - 4 ✓
- 5600 Hirshhorn Museum and Sculpture Garden - 2 ✓
- 5700 National Museum of African Art - 3 ✓
- 5800 Cooper-Hewitt Museum ✓
- 5900 Joseph Henry Papers ✓
- 5B00 Archives of American Art - N.Y. ✓
- 5C00 Archives of American Art ✓
- 5CA0 AA&PG Building Manager ✓

American Studies

Public Service

- 6100 Assistant Secretary for Public Service - 2 ✓
- 5D00 Folklife Programs ✓
- 5E00 Symposia and Seminars ✓
- 6800 Office of Telecommunications ✓
- 6C00 Smithsonian Institution Press ✓
- 6E00 Elementary and Secondary Education ✓
- 6F00 Visitor Information and Reception Center ✓

Museum Programs

- 7000 Assistant Secretary for Museum Programs - 2 ✓
- 1700 Smithsonian Institution Archives ✓
- 6D00 Smithsonian Institution Libraries ✓ 2
- 7200 Office of Exhibits Central ✓
- 7300 Office of the Registrar ✓
- 7400 Office of the Building Manager, South Group ✓
- 7500 Conservation Analytical Laboratory ✓ 2
- 7700 Smithsonian Traveling Exhibition Program ✓
- 7800 Office of Horticulture ✓
- 7900 Office of International Activities ✓

office of museum programs

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SMITHSONIAN INSTITUTION

FISCAL YEAR 1986

Justification of Estimates of Appropriations
To the Office of Management and Budget

SMITHSONIAN INSTITUTION

BOARD OF REGENTS

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UNDER SECRETARY*

AUDITOR

Under Separate Boards of Trustees

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FOR THE PERFORMING ARTS

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FOR SCHOLARS

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Board of Fellowships and Grants	National Board of the Smithsonian Associates
Cooper-Hewitt Museum Advisory Council	National Museum Act Advisory Council
Folklife Advisory Council	National Museum of African Art Commission
Frear Visiting Committee	National Museum of American Art Commission
Hirshhorn Museum and Sculpture Garden Board of Trustees	National Portrait Gallery Commission
Horticultural Advisory Committee	Smithsonian Council
Joint Sponsoring Committee for the Papers of Joseph Henry	Women's Committee of the Smithsonian Associates
National Air and Space Museum Advisory Board	

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Concessions
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GENERAL COUNSEL*

Coordinator of PUBLIC INFORMATION*

Office of Congressional Liaison
Office of Public Affairs
Office of Special Events

Director of MEMBERSHIP AND DEVELOPMENT*

Development Office
Smithsonian National Associate Program
Smithsonian Resident Associate Program

Assistant Secretary for SCIENCE*

National Air and Space Museum
National Museum of Natural History/
National Museum of Man
National Zoological Park
Office of Educational Research
Office of Fellowships and Grants
Smithsonian Astrophysical Observatory
Smithsonian Environmental Research Center
Smithsonian Tropical Research Institute

Assistant Secretary for HISTORY & ART*

Ancoste Neighborhood Museum
American Art
Center for Asian Art
Freer Gallery of Art
Sackler Gallery of Art
Cooper-Hewitt Museum
Hirshhorn Museum and Sculpture Garden
Joseph Henry Papers
National Museum of African Art
National Museum
Renwick Gallery
National Museum of American History
National Portrait Gallery
Office of American Studies

Assistant Secretary for PUBLIC SERVICE*

The International Center
Office of Elementary and Secondary Education
Office of Folklife Programs
Office of International Activities
Office of International Symposia and Seminars
Office of Telecommunications
Smithsonian Institution Press
Visitor Information and Associates' Reception Center

Assistant Secretary for MUSEUM PROGRAMS*

Conservation Analytical Laboratory
National Museum Act
Office of Exhibits Central
Office of Museum Programs
Office of the Registrar
Smithsonian Institution Archives
Smithsonian Institution Libraries
Smithsonian Institution Traveling Exhibition Service

Assistant Secretary for ADMINISTRATION*

Contracts Office
International Exchange Service
Management Analysis Office
Office of Equal Opportunity
Office of Facilities Services
Office of Design and Construction
Office of Plant Services
Office of Protection Services
Office of Information Resource Management
Office of Personnel Administration
Office of Printing and Photographic Services
Office of Programming and Budget
Office of Supply Services
Travel Services Office

*Secretary's Executive Committee

SMITHSONIAN INSTITUTION

FISCAL YEAR 1986 ESTIMATES OF APPROPRIATIONS

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SMITHSONIAN INSTITUTION
FY 1986 Budget Request
(\$000's)

Summary

<u>APPROPRIATION ACCOUNT</u>	<u>FY 1985 CONGRESSIONAL REQUEST</u>	<u>FY 1986 REQUEST</u>
Salaries and Expenses	\$ 170,682	\$ 188,425
Foreign Currency	9,000	7,750
Construction		24,900
National Zoological Park	3,500	9,645
Restoration and Renovation	13,750	24,625
TOTAL	<u>\$ 196,932</u>	<u>\$ 255,345</u>

INTRODUCTION

The Smithsonian Institution's FY 1986 budget request to the Office of Management and Budget represents a focus on the efficient use of existing resources and a realistic recognition of the essential additional resources required to fulfill the Institution's mandate for the increase and diffusion of knowledge. These resources are required in line with the Institution's role as a national repository for collections that reflect the heritage and traditions of this country, with the corresponding obligation to provide adequate care and facilities for the preservation of these items.

The current assessment of needs cuts across all programmatic lines and organizational units. The budget was formulated initially by program managers and administrators working within the context of broad goals for FY 1986 and the future as expressed by the Secretary. Subsequent reviews by bureau and office directors and ultimately the Secretary and his Executive Committee established the Institutional priorities and requisite budget levels which are reflected in this document. Final review and approval of the Institution's Federal and Nonappropriated Trust fund budgets as well as the Institution's Five-Year Prospectus for FY 1986 - FY 1990 will be topics of the September 17, 1984 meeting of the Board of Regents.

ORGANIZATION AND GOALS

Founded in 1846, the Smithsonian Institution is an independent Federal establishment devoted to public education, research and national service in the arts, sciences and history. Centered on The Mall in Washington, D.C., the 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, attracting millions of visitors annually to its museums, galleries and zoological park. Many others also view Smithsonian traveling exhibitions, which appear across the United States and abroad, and the annual Folklife Festival. As custodian of the National Collections, the Smithsonian possesses more than 100 million art objects, natural history specimens and artifacts. These collections are displayed for the enjoyment and education of visitors and are 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 in Washington, D.C. and 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 Neighborhood 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; a photo-biological laboratory in Rockville, Maryland; an oceanographic research facility at Link Port, Florida; astrophysical stations in Massachusetts and Arizona; and supporting administrative, laboratory and storage areas.

The goal of the Smithsonian Institution is to promote the increase and diffusion of knowledge. To accomplish this goal, the Smithsonian conducts a broad variety of programs alone and in cooperation with other institutions, universities and government agencies in the United States and abroad. These programs include:

--Collections management: The Smithsonian Institution has the legal responsibility (20 U.S.C. 59) to serve as the official repository of the National Collections which contain more than 100 million art, technological and cultural history objects and natural history specimens and artifacts. The responsibility involves the acquisition, documentation and conservation of these materials along with detailed record keeping or cataloguing, regular inventories and storage or display in secure and atmospherically controlled environments.

--Basic research: Increase of knowledge is accomplished through basic research. As an independent Federal establishment, the Smithsonian conducts a broad range of scientific and scholarly research, often in cooperation with other institutions, universities and government agencies.

--Exhibitions, including performances and festivals or celebrations: These presentations constitute one means of diffusing knowledge on a wide scale. In Washington, D.C. and New York City, Smithsonian museums, galleries and the zoological park devote exhibit space to showing significant objects, specimens and animals from the permanent collections. In addition, temporary exhibitions with loan materials enhance these presentations, adding fresh concepts and ideas--further enriching visitor experiences. Through the Smithsonian Institution Traveling Exhibition Service, over 100 exhibitions are seen annually by millions of people in most states and the District of Columbia. Live performances, festivals, celebrations, lectures and records also are enjoyed by millions of people.

--Education: Education programs of the Institution offer enormous variety in content and form; they range from in-depth, scholarly symposia to activities for fun and enjoyment and reach all ages from young children to senior citizens. They include classes and workshops, guided tours by trained docents, and radio, television and motion picture programs, sponsored by the individual museums and by centralized offices including Fellowships and Grants, Symposia and Seminars, and Elementary and Secondary Education. A significant aspect of the education effort involves production each year of several hundred publications including museum catalogues, books, scholarly monographs, articles, papers, the Archives of American Art Journal and Smithsonian magazine, which is now received by over 2 million Associates' families. At any given time, there are likely to be two to three hundred visiting scholars, scientists and students working throughout the Institution in various collections, laboratories and offices. Finally, as another educational endeavor, the Institution's Office of Museum Programs offers assistance to museums across the country and abroad by conducting museum training courses, producing and distributing audio-visual programs on conservation principles and techniques and by awarding grants for professional museum training and research.

--Collections acquisition: The Smithsonian museums acquire works of art, artifacts and specimens and other objects in three ways: by collecting, by donation and by purchase. Collecting and donation are and will continue to be the major means for acquiring materials for the collections. However, donations and gifts of collections, for the most part, do not lend themselves to planned development. If the Institution's research and exhibitions programs are to thrive, the collections must grow by thoughtful design. To meet this responsibility and challenge, the Smithsonian seeks to provide special acquisitions funds for the museums. Some Federal funds are requested each year to permit regular planned purchases.

In order to carry out these functions, administration and facilities services units of the Institution provide the required support. The Smithsonian has the responsibility for the maintenance, operation and protection of a large complex of museum and gallery buildings and other facilities. The Institution also provides architectural and engineering services for major repairs, alterations and improvements to the physical plant.

FY 1986 PRIORITY LISTING

S & E, 1/88, 4,25,000

The Smithsonian Institution's FY 1986 budget request in the Salaries and Expenses account and all construction accounts totals \$247,595,000. (An additional amount of \$7,750,000 equivalent in foreign currencies also is requested, but not ranked competitively with the other accounts.)

Priorities established by the Institution in this budget request meet discrete requirements. Requests in the Salaries and Expenses account, Restoration and Renovation of Buildings, and Zoo Construction accounts have been divided into two priority groupings. Each request in the Construction account also has been assigned a priority order. An overall ranking sheet follows this description.

After meeting increased FY 1986 costs of pay, utilities and rent and covering anticipated inflationary cost increases, the highest priority items in the Salaries and Expenses appropriation follow from construction initiatives of previous years. These consist of continued equipping of the Museum Support Center (MSC), staffing of the Conservation Analytical Laboratory (to be located at the MSC) and providing for the move of the collections. For the Quadrangle, there is provision for establishing operating programs and related support for organizations that will be located there and for essential equipment (sought in the Construction appropriation). This budget also reflects a concerted effort to strengthen research in the Institution through equipment replacement programs at several science bureaus, support for the Smithsonian Institution Libraries, and facilities developments and improvements at outlying research organizations (included in the Construction account). Also given prominence are ongoing phased efforts to bring the Institution's protection and buildings maintenance programs to adequate levels, further automation in support of collections management and to strengthen administration. An additional infusion of monies is sought to continue the very successful multi-year program, initiated in FY 1979, to gain inventory control of the collections. Also of high priority within the Salaries and Expenses account are plans to enhance Native American Programs of the National Museum of Natural History/Museum of Man, the National Museum of American History, the Folklife Program and the Office of Museum Programs.

Of particular importance in this budget request, as in previous ones, are projects included within the Restoration and Renovation of Buildings (R&R) appropriation. The Institution has no alternative to the devotion of substantial resources to effect critical repairs and renovations to its buildings. The "Five-Year Prospectus" has identified the need for \$143.3 million for this purpose between FY 1986 and FY 1990. The FY 1986 request for R&R appropriation totals \$24.6 million, of which \$19.6 million is considered of highest priority. The remaining \$5 million will permit construction in the courtyard

of the Freer Gallery of Art to provide needed collection storage space. This project must be accomplished in FY 1986 because of associated Quadrangle construction.

A key component of the Construction request is the restoration of the \$8 million rescinded in the FY 1984 appropriation to provide furnishings and equipment necessary for initial occupancy and opening of the Quadrangle to the public.) Fundraising efforts for this project have been very successful. The Institution has received cash and pledges totaling \$37.5 million, one-half of the project cost, toward completion of this building.

A further sum of \$9.6 million is requested for the FY 1986 Zoo Construction program. Of this amount, (\$4.7 million is of highest priority.) This sum will permit continued essential renovation at Rock Creek Park and at the Conservation and Research Center at Front Royal, Virginia and foster research through the renovation of facilities at Rock Creek. The balance of \$4.9 million which is of lower priority would support further improvements and small exhibits along the Zoo's entranceway, renovation of the Holt House in Rock Creek Park for research purposes, the construction of spaces for large hoofed stock at the Zoo's Conservation and Research Center at Front Royal and design funding for three additional facilities planned for future years.

A major construction initiative, itself in the planning stage for the past few years, involves the General Post Office Building for which design monies of \$3.5 million are sought. (Authorization for transfer of the General Post Office Building from the General Services Administration to the Smithsonian Institution and for renovation work of \$40 million is anticipated in the current session of Congress.) The acquisition of this historic building will solve space needs of the National Museum of American Art, the National Portrait Gallery and the Archives of American Art and further research, education and exhibition programs of these organizations. Located on F Street, the General Post Office Building is linked to the existing American Art/Portrait Gallery Building by underground tunnel. A sum of approximately \$36.5 million will be required in FY 1987 for building renovation.

Improvements to the Smithsonian's scientific research facilities also are budgeted in order to meet current and future programmatic needs. Included in the science facility development program are construction of new and improved laboratories and support facilities for the Smithsonian Environmental Research Center near Edgewater, Maryland; planning for the acquisition and construction of a base camp for the Whipple Observatory in Arizona; and construction of improved housing and modern laboratories at various sites of the Smithsonian Tropical Research Institute in Panama.

Finally, additional resources are sought for the Institution's outreach programs of the Smithsonian Institution Traveling Exhibition Service and the Visitor Information and Associates' Reception Center. Funding is included to enable the National Museum of American History to prepare an exhibition in commemoration of the bicentennial of the United States Constitution. The National Air and Space Museum has done pioneering work in applying video disc technology to archival and research purposes. Monies to expand these successful efforts are requested. Of particular note also are two research requests. For the National Museum of Natural History/Museum of Man, funding is included to conduct a biological inventory of Panama. This study is aimed at developing a comprehensive inventory of organisms found in the Panama Canal region to provide proper environmental documentation to United States policy makers currently undertaking a major study of alternative plans to the current Panama Canal. Planning monies are sought also for a submillimeter-wavelength telescope array that will make fundamental contributions to a wide range of astronomical disciplines.

RANKING OF FY 1986 BUDGET
(\$000's)

<u>Priority</u>	<u>Item</u>	<u>Amount</u>	<u>Cumulative Amount</u>
I.	<u>SALARIES AND EXPENSES</u>		
	Salaries and Expenses FY 1985 Base	\$170,682	
	Uncontrollables (Necessary Pay, Utilities, Rent & Inflation)	6,856	\$177,538
	Museum Support Center Equipment (Retain \$4.2 million of \$7.5 million in FY 1985 budget)	(3,300)	174,238
	Quadrangle		
	--Sackler Gallery Programs	1,510	175,748
	--African Art Programs	1,584	177,332
	--International Center Programs	750	178,082
	--Libraries	30	178,112
	--Exhibits Central	84	178,196
	--Smithsonian Institution Traveling Exhibition Service	110	178,306
	--Protection	470	178,776
	--Building Management	652	179,428
	--Office of Plant Services	345	179,773
	--Horticulture	40	179,813
	--Accounting	14	179,827
	--Personnel	40	179,867
	Smithsonian Institution Libraries	640	180,507
	Office of Design and Construction - R&R/Construction; Staff and Support	438	180,945
	Office of Plant Services - Facilities Maintenance	650	181,595
	Office of Protection Services	755	182,350
	Conservation Analytical Laboratory	130	182,480
	Automation/Administration - Staff Support	321	182,801
	Equipment Replacement		
	--National Museum of Natural History	400	183,201
	--Smithsonian Tropical Research Institute	400	183,601
	--Smithsonian Environmental Research Center	300	183,901
	Collections Management Inventory Program	300	184,201
	Native American Program		
	--National Museum of Natural History/ Museum of Man	159	184,360
	--National Museum of American History	104	184,464
	--Folklife Program	110	184,574
	--Office of Museum Programs	72	184,646
II.	<u>CONSTRUCTION</u> - Quadrangle Development	8,000	192,646
III.	<u>RESTORATION AND RENOVATION OF BUILDINGS</u> (excluding Freer Courtyard)	19,625	212,271
IV.	<u>ZOO CONSTRUCTION</u>	4,700	216,971
V.	<u>CONSTRUCTION</u> - Post Office Building Planning	3,500	220,471
VI.	<u>CONSTRUCTION</u> - Environmental Research Center Planning	2,400	222,871

VII.	<u>CONSTRUCTION</u> - Whipple Observatory Base Camp	4,500	227,371
VIII.	<u>CONSTRUCTION</u> - Tropical Research Institute	6,500	233,871
IX.	<u>SALARIES AND EXPENSES</u>		
	Automation/Collections Management		
	--National Museum of American History	411	234,282
	--Cooper-Hewitt Museum	150	234,432
	--Archives of American Art	353	234,785
	--National Museum of American Art	300	235,085
	--National Portrait Gallery	105	235,190
	National Air & Space Museum - Video disc Project	300	235,490
	National Zoological Park - Exhibitions/Facility Support	350	235,840
	Office of Protection Services - Health & Safety	340	236,180
	National Museum of American History - Constitution Bicentennial	265	236,445
	National Museum of Natural History - Biological Inventory of Panama	500	236,945
	Smithsonian Astrophysical Observatory - Submillimeter Telescope Planning	500	237,445
	Visitor Information and Associates' Reception Center - Program Coordinator/Outreach Program	50	237,495
	Office of Museum Programs - Audio-Visual Loan Program	40	237,535
	Smithsonian Institution Traveling Exhibition Service - Exhibits Coordinator/Shipping Costs	85	237,620
	Hirshhorn Museum & Sculpture Garden - 20th Century Consort	30	237,650
X.	<u>RESTORATION AND RENOVATION</u> - Freer Courtyard	5,000	242,650
XI.	<u>ZOO CONSTRUCTION</u>	4,945	247,595

NONAPPROPRIATED SOURCES OF FUNDING

In addition to the support provided by Federal appropriations, the Institution also receives nonappropriated funds to expand and enrich its programs. The Nonappropriated Fund activities (Trust funds) are presented along with the Federal budget request to provide an overview of all uses of funds for each Smithsonian bureau. It must be emphasized that the estimates for Trust funds are subject to change due to the unpredictability of donations, grants and contracts to the Institution, fluctuations in visitor attendance and uncertain economic factors affecting restaurant and shop revenues, Associates' memberships and other auxiliary activities.

The FY 1985 Trust budget comprises to approximately 48 percent of the total Institution's gross operating revenues or approximately 23 percent of net operating revenues. Included in the above are Federal grants and contracts received from government agencies which are expected to total approximately \$16.4 million. Gross revenues of nonappropriated Trust funds (excluding Federal grants and contracts) are expected to continue to grow as in previous years and reach \$141.2 million in FY 1985. Net income, however, is projected to only increase from \$32.5 million in FY 1984 to \$34.7 million in FY 1985 (of which nearly \$13 million is projected for restricted purposes) because of continued inflationary cost increases adversely affecting auxiliary activities.

The Trust funds are composed of unrestricted funds, restricted funds and Federal grants and contracts and are applied in the following manner:

A. Unrestricted Funds

1. General - Central management and administrative service units of the Institution, such as legal counsel, accounting, personnel, supply and budget receive Trust allotments whose costs primarily are funded from overhead recovery on grants and contracts received by the Smithsonian and from internal administrative fees charged to other Trust-funded activities. Operating funds are provided to various activities such as the Visitor Information and Associates' Reception Center, the Cooper-Hewitt Museum, Smithsonian Tropical Research Institute, Office of Telecommunications and the Office of Folklife Programs along with a variety of program allotments for important Institutional and bureau needs as approved by the Board of Regents. These allotments primarily are funded from short-term investment income, unrestricted endowment income and net proceeds from museum shops, food service concessions, sales of Smithsonian books, records and other products based on designs and objects in the collections, and from the Resident Associate and National Associate Programs (including Smithsonian magazine).

2. Special Purpose - Certain bureaus have income-producing activities, the largest of which is the Theater and Spacearium operations of the National Air and Space Museum. Also included in this category are miscellaneous bureau revenues from the sale of posters, exhibit brochures and publications; tuition grants from universities; the museums' share of sales in the restaurant and museum shops; membership and admission fees; exhibit rental; and investment income from current fund balances.

Beginning in FY 1979, the Board of Regents approved using the Institution's unrestricted Trust funds for certain programs previously financed with appropriated funds. These consist of the Institution's various fellowship programs (FY 1985 allotment of \$1.98 million) and the appropriate Trust fund share of rental costs of administrative units in L'Enfant Plaza, funded in part from rental payments by auxiliary activities occupying space on The Mall (FY 1985 allotment of \$720,000). The final planned amount of \$2.7 million in unrestricted Trust funds will be provided for the Quadrangle construction project in FY 1984. This is in addition to the approximately \$6.8 million in unrestricted Trust funds that already have been set aside. The total of \$9.5 million will be part of the dollar for dollar match with appropriated funds. A total of \$2.5 million has been set aside for the Museum Support Center, \$1.75 million (from the sale of the Belmont Conference Center) for construction and \$750,000 for Conservation Analytical Laboratory equipment.

The Special Purpose category also includes awards from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, the Fluid Research Program, and the Smithsonian Society Awards Program.

A substantial continuing commitment under this category is the \$2.2 million annual allocation for the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, first approved by the Board of Regents in FY 1978. Of the \$2.2 million, an amount of \$1.1 million is available annually for purchase of objects of outstanding importance to the collections.

During FY 1984, the Collections Acquisition portion of the Program was used to purchase a wide variety of objects throughout the Smithsonian museums. The National Portrait Gallery purchased the famous portrait of Mary Cassatt by Edgar Degas (1834-1917) for \$1.3 million (one-half of this amount was a gift from the Cafritz Foundation); the National Museum of American History purchased two 17th-century automata, a lady and a dog, representing craftsmanship of the golden age of German clockmaking and the earliest beginnings of automation technology that today is manifest in program-controlled robots and "self-acting" machinery (\$75,000); and the National Museum of Natural History purchased a Trilobite Fossils Collection of "gem" quality specimens that are not only of superior quality but are the best specimens representing the species that have ever been

found and prepared (\$56,000). Each of these important acquisitions was supplemented by varying amounts of outside contributions. An additional amount of \$550,000 is designated by the Program for scholarly research projects that do not lend themselves to or are not appropriate for Federal funding. These include multi-disciplinary research projects that can be carried out within and between bureaus and projects that have been awarded external funds, which require matching Trust amounts. A sedimentological - petrological survey of the northeast Nile Delta was initiated in FY 1984. Recent theories have attributed the Biblical Exodus, "parting of the waves" to a tsunami, (tidal wave) in the Nile Delta caused by a well-documented volcanic explosion centered in the Southern Aegean Sea, between 1450 and 1500 B.C. In addition to providing information which might confirm or deny the "Exodus theory," this research would provide the first comprehensive study of this part of the Nile Delta, one of the world's most fertile and productive estuaries. In recent years this area has become of great interest to petroleum companies, as a possible new source of oil for the world's economy.

The remaining \$550,000 of the \$2.2 million available under this Program is allocated to conduct a wide range of educational outreach programs of benefit to the public such as: Office of Public Affairs - a program of public service announcements for minorities; Office of Public Affairs/Office of Elementary and Secondary Education - development and testing of a series of articles that will serve as the prototype for an eventual magazine for those young people between the ages of 12 and 15; Astrophysical Observatory - a "Pre-College Curriculum Development Program in Astronomy" - assigned to use children's fascination with astronomy to aid in the teaching of science and mathematics in primary and secondary schools; Museum of American History - support for the pan-Smithsonian development and enrichment of historical public and scholarly activities and educational materials relating to Native Americans; and Office of Museum Programs - support for five onsite workshops for small museums in cooperation with the Virginia Association of Museums.

Starting in FY 1985, the Board of Regents has approved an annual allocation for the Trust-funded Special Exhibition Program. The cost of exhibition programs has generally been met with Federal funds which will continue to provide the predominant financing for the Institution's overall exhibition effort, as supplemented by donations from individuals, foundations and corporations. To be part of and administered similar to the Collections Acquisition, Scholarly Studies and Educational Outreach Program, the Special Exhibition Program with \$3 million in FY 1985 will increase opportunities by providing funds for important temporary major exhibitions as proposed by organizations of the Institution. Subject to competitive review and selection process, the request must be for temporary special exhibitions of sufficient importance to provide benefit to the viewing public and accompanied by a scholarly catalogue or similar works. So that the program will integrate well with important international dialogue and cultural understanding, preferential consideration will be given to proposals which include: active participation in the development process by the Smithsonian Institution Traveling Exhibition Services and the International Center; opportunities to display objects from Smithsonian collections which would normally not otherwise be exhibited or important objects borrowed from elsewhere; and contain provisions for obtaining matching funds.

B. Restricted Funds

Restricted Trust funds include gifts, grants and endowments from individuals, foundations, organizations and corporations which specify the use of the donation or bequest. Generally, these funds provide support for a particular exhibit or research project. The Freer fund is the largest restricted endowment of the Institution; it is strictly controlled under the terms of the original gift and bequest for the sole use of the Freer Gallery of Art.

C. Federal Grants and Contracts

Federal Grants and Contracts are provided by various agencies and departments for special projects which can be conducted at the Smithsonian because of its expertise in a particular area of science, history, art and education; and because of its ability to respond quickly to certain kinds of needs.

SMITHSONIAN INSTITUTION
SOURCE OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 1

SOURCE OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
<u>SOURCE OF OPERATING FUNDS</u>							
Federal Salaries and Expenses	156,683	170,682	188,425	216,504	224,020	235,586	241,271
. Plus cumulative effect of legislated pay raises	—	2,900	11,200	20,300	29,400	38,600	47,900
Subtotal	156,683	173,582	199,625	236,804	253,420	274,186	289,171
<u>Nonappropriated Trust Funds</u>							
<u>Unrestricted General</u>							
. Investments	2,900	3,000	3,050	3,100	3,150	3,300	3,400
. Gifts	25	50	50	50	50	50	50
. Auxiliary Activities	113,410	120,730	130,275	139,305	147,675	156,765	166,880
. Miscellaneous	45	50	50	50	50	50	50
Subtotal	116,380	123,830	133,425	142,505	150,925	160,165	170,380
<u>Unrestricted Special Purpose</u>							
. Investments	619	507	516	520	520	520	520
. Gifts	111	120	125	125	125	125	125
. Bureau Activities	2,745	3,029	3,133	3,300	3,400	3,500	3,600
. Miscellaneous	1,136	1,051	1,166	1,180	1,180	1,180	1,180
Subtotal	4,611	4,707	4,940	5,125	5,225	5,325	5,425
<u>Restricted</u>							
. Investments	3,206	3,337	3,617	3,775	3,925	4,075	4,225
. Gifts, Grants and Contracts	5,355	8,336	5,952	6,400	6,100	6,000	6,000
. Miscellaneous	999	969	1,006	1,050	1,050	1,050	1,050
Subtotal	9,560	12,642	10,575	11,225	11,075	11,125	11,275
<u>Federal Grants and Contracts</u>	15,582	16,445	18,482	26,462	28,169	31,530	17,429
Gross Income	302,816	331,206	367,047	422,121	448,814	482,331	493,680
Less Expenses of Auxiliary and Bureau Activities	(98,057)	(106,490)	(114,827)	(122,566)	(130,217)	(138,783)	(147,129)
Net Funds Provided	204,759	224,716	252,220	299,555	318,597	343,548	346,551

SMITHSONIAN INSTITUTION
APPLICATION OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 2 (1)

APPLICATION OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
<u>Science</u>							
.Federal Salaries and Expenses	51,973	55,681	58,590	66,292	69,830	72,087	73,565
.Unrestricted General	798	497	445	455	444	469	478
-Program and Administrative*	—	—	—	—	—	—	—
-Auxiliary Activities	—	—	—	—	—	—	—
.Unrestricted Special Purpose							
-Bureau Activities	1,523	1,528	1,549	1,636	1,699	1,768	1,839
-All Other	2,803	2,195	1,633	1,653	1,731	1,823	1,914
.Restricted	2,702	2,831	2,574	2,652	2,942	2,821	2,951
.Federal Grants and Contracts	14,966	15,990	18,175	26,122	27,821	31,174	17,065
Subtotal	74,765	78,722	82,966	98,810	104,467	110,142	97,812
<u>History and Art</u>							
.Federal Salaries and Expenses	25,585	28,132	32,944	38,690	39,897	39,905	40,594
.Unrestricted General	—	—	—	—	—	—	—
-Program and Administrative	1,489	1,273	1,264	1,272	1,302	1,325	1,355
-Auxiliary Activities	—	—	—	—	—	—	—
.Unrestricted Special Purpose							
-Bureau Activities	673	723	744	783	805	829	853
-All Other	1,273	951	882	1,058	1,087	1,117	1,148
.Restricted	4,427	5,893	4,857	5,114	5,241	5,419	5,552
.Federal Grants and Contracts	177	50	50	75	75	75	75
Subtotal	33,624	37,022	40,741	46,992	48,407	48,670	49,577
<u>Public Service</u>							
.Federal Salaries and Expenses	1,833	2,007	2,807	2,932	3,002	3,004	3,092
.Unrestricted General	—	—	—	—	—	—	—
-Program and Administrative	1,368	1,645	1,884	1,989	2,131	2,286	2,485
-Auxiliary Activities	11,695	12,460	13,045	13,670	14,330	15,020	15,660
.Unrestricted Special Purpose							
-Bureau Activities	26	39	41	47	51	57	62
-All Other	260	110	109	—	—	—	—
.Restricted	111	1,770	1,486	1,800	1,370	1,100	950
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	15,293	18,031	19,372	20,438	20,884	21,467	22,249
*Net of SMO Overhead Recovery							

SMITHSONIAN INSTITUTION
APPLICATION OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 2 (2)

APPLICATION OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
<u>Museum Programs</u>							
.Federal Salaries and Expenses	9,173	10,671	11,862	15,138	15,954	15,914	16,758
.Unrestricted General	1,126	462	463	439	481	503	516
-Program and Administrative	1,475	1,445	1,650	1,720	1,790	1,865	1,925
-Auxiliary Activities							
.Unrestricted Special Purpose							
-Bureau Activities	51	53	57	65	66	67	68
-All Other	172	18	2	4	5	7	6
.Restricted	2,493	1,322	1,009	1,254	1,029	1,029	1,029
.Federal Grants and Contracts	45	2	—	—	—	—	—
Subtotal	14,535	13,973	15,043	18,620	19,325	19,385	20,302
<u>Special Programs</u>							
.Federal Salaries and Expenses	10,020	12,183	9,293	13,570	7,762	10,064	6,364
.Unrestricted General							
-Program and Administrative	763	917	973	1,009	1,041	1,073	1,106
-Auxiliary Activities	—	—	—	—	—	—	—
.Unrestricted Special Purpose							
-Bureau Activities	7	7	6	4	5	5	5
-All Other	4,249	7,580	7,602	8,162	9,107	9,277	9,977
.Restricted	283	550	633	342	304	315	328
.Federal Grants and Contracts	394	403	257	265	273	281	289
Subtotal	15,716	21,640	18,764	23,352	18,492	21,015	18,069
<u>Associates Programs</u>							
.Federal Salaries and Expenses	—	—	—	—	—	—	—
.Unrestricted General	900	943	996	973	850	905	934
-Program and Administrative	59,670	65,620	70,035	74,605	79,370	84,990	90,505
-Auxiliary Activities							
.Unrestricted Special Purpose							
-Bureau Activities	8	10	10	11	11	12	12
-All Other	132	33	33	33	33	33	33
.Restricted	42	25	26	25	25	25	25
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	60,752	66,631	71,100	75,647	80,289	85,965	91,509

SMITHSONIAN INSTITUTION
APPLICATION OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 2 (3)

(\$000)

APPLICATION OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
<u>Business Management</u>							
.Federal Salaries and Expenses	—	—	—	—	—	—	—
.Unrestricted General	—	—	—	—	—	—	—
-Program and Administrative	—	—	—	—	—	—	—
-Auxiliary Activities	22,850	24,510	27,595	29,925	31,990	34,065	36,090
.Unrestricted Special Purpose	—	—	—	—	—	—	—
-Bureau Activities	—	—	—	—	—	—	—
-All Other	—	—	—	—	—	—	—
.Restricted	—	—	—	—	—	—	—
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	22,850	24,510	27,595	29,925	31,990	34,065	36,090
<u>Administrative, Financial and Technical Services</u>							
.Federal Salaries and Expenses	11,779	12,308	12,683	13,461	13,578	13,629	13,721
.Unrestricted General	—	—	—	—	—	—	—
-Program and Administrative*	1,333	936	914	1,394	1,415	1,493	1,520
-Auxiliary Activities	80	95	95	100	100	105	110
.Unrestricted Special Purpose	—	—	—	—	—	—	—
-Bureau Activities	(1)	—	—	—	—	—	—
-All Other	123	543	541	22	21	8	5
.Restricted	138	511	612	105	105	105	105
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	13,452	14,393	14,845	15,082	15,219	15,340	15,461
<u>Facilities Services</u>							
.Federal Salaries and Expenses	46,320	49,887	55,498	57,954	60,503	63,075	64,169
.Unrestricted General	—	—	—	—	—	—	—
-Program and Administrative	1,191	1,395	1,529	1,569	1,636	1,746	1,806
-Auxiliary Activities	—	—	—	—	—	—	—
.Unrestricted Special Purpose	—	—	—	—	—	—	—
-Bureau Activities	—	—	—	—	—	—	—
-All Other	60	31	30	61	65	69	70
.Restricted	17	1	1	—	—	—	—
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	47,588	51,314	57,058	59,584	62,204	64,890	66,045
*Net of SI Overhead Recovery							

SMITHSONIAN INSTITUTION
APPLICATION OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 2 (4)

APPLICATION OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
<u>Adjustments for Inflation, Pay Requirements, and Grade Reductions</u>							
Federal Salaries and Expenses							
-Necessary Pay	—	—	3,508	4,900	7,600	9,700	12,000
-Grade Reductions	—	(187)	(560)	(933)	(1,306)	(1,492)	(1,492)
-Inflation	—	—	1,800	4,500	7,200	9,700	12,500
-Supplemental	—	2,900	11,200	20,300	29,400	38,600	47,900
Subtotal	—	2,713	15,948	28,767	42,894	56,508	70,908
<u>Institutional Total</u>							
Federal Salaries and Expenses	156,683	173,582	199,625	236,804	253,420	274,186	289,171
-Unrestricted General	8,968	8,068	8,468	9,100	9,300	9,800	10,200
-Program and Administrative	95,770	104,130	112,420	120,020	127,580	136,045	144,290
-Unrestricted Special Purpose							
-Bureau Activities	2,287	2,360	2,407	2,546	2,637	2,738	2,839
-All Other	9,072	11,461	10,832	10,993	12,049	12,334	13,153
-Restricted	10,213	12,903	11,198	11,292	11,016	10,814	10,940
-Federal Grants and Contracts	15,582	16,445	18,482	26,462	28,169	31,530	17,429
Gross Funds Applied	298,575	328,949	363,432	417,217	444,171	477,447	488,022
Less Expenses of Auxiliary and Bureau Activities	(98,057)	(106,490)	(114,827)	(122,566)	(130,217)	(138,783)	(147,129)
<u>Net Funds Applied Before Transfers</u>							
Federal Salaries and Expenses	156,683	173,582	199,625	236,804	253,420	274,186	289,171
-Unrestricted General	8,968	8,068	8,468	9,100	9,300	9,800	10,200
-Unrestricted Special Purpose	9,072	11,461	10,832	10,993	12,049	12,334	13,153
-Restricted	10,213	12,903	11,198	11,292	11,016	10,814	10,940
-Federal Grants and Contracts	15,582	16,445	18,482	26,462	28,169	31,530	17,429
Net Before Transfers	200,518	222,459	248,605	294,651	313,954	338,664	340,893

SMITHSONIAN INSTITUTION
APPLICATION OF OPERATING FUNDS
FY 1984 PROJECTED THROUGH FY 1990

Table 2 (5)

APPLICATION OF OPERATING FUNDS	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
Transfers: Out/(In)	—	—	—	—	—	—	—
.Federal Salaries and Expenses	—	—	—	—	—	—	—
.Current Funds Transfers (Internal)	5,250	8,310	8,815	8,965	10,000	10,250	11,065
-Unrestricted General	(5,250)	(8,310)	(8,815)	(8,965)	(10,000)	(10,250)	(11,065)
-Unrestricted Special Purpose	—	—	—	—	—	—	—
.Current Funds to Plant Improvement	3,272	322	522	500	500	500	500
-Unrestricted General	—	—	—	—	—	—	—
-Unrestricted Special Purpose	—	—	—	—	—	—	—
.Current Funds to Endowment	3,021	3,000	3,000	3,500	3,500	3,500	4,000
-Unrestricted General	16	—	—	—	—	—	—
-Unrestricted Special Purpose	185	126	135	140	145	150	155
-Restricted	—	—	—	—	—	—	—
Total Transfers	6,494	3,448	3,657	4,140	4,145	4,150	4,655
Net Changes in Fund Balance:							
Increase (Decrease)	99	—	200	420	45	70	325
.Unrestricted General	(1,514)	(804)	516	551	539	503	498
.Unrestricted Special Purpose	(838)	(387)	(758)	(207)	(86)	161	180
.Restricted	—	—	—	—	—	—	—
.Federal Grants and Contracts	—	—	—	—	—	—	—
Subtotal	(2,253)	(1,191)	(42)	764	498	734	1,003
Net Funds Applied							
.Federal Salaries and Expenses	156,683	173,582	199,625	236,804	253,420	274,186	289,171
.Unrestricted General	20,610	19,700	21,005	22,485	23,345	24,120	26,090
.Unrestricted Special Purpose	2,324	2,347	2,533	2,579	2,588	2,587	2,586
.Restricted	9,560	12,642	10,575	11,225	11,075	11,125	11,275
.Federal Grants and Contracts	15,582	16,445	18,482	26,462	28,169	31,530	17,429
Net Funds Applied	204,759	224,716	252,220	299,555	318,597	343,548	346,551

SALARIES AND EXPENSES

FY 1986 UNCONTROLLABLE INCREASES

Funds are sought to finance costs that are beyond the control of the Institution. These increased costs result from established practices in regulating wages; changes in utility rates; higher postage and communications costs; and the effects of inflation which result in the increased costs for supplies, equipment and services. A total of \$6,856,000 is requested for these increases.

1. Salary and Related costs	
--Within-grade Step Increases	\$1,783,000
--Merit Pay	273,000
--One Additional Workday	412,000
--Unemployment Compensation	400,000
--Cost of the One-half Percent Pay Increase	640,000
--OMB Grade Target Reduction	-373,000
Total Salary and Related Costs	<u>\$3,135,000</u>
2. Utilities, Postage and Communications	
--Electricity	\$ 938,000
--Steam	321,000
--Gas	181,000
--Fuel Oil/Water	-7,000
--Postage	154,000
--Communications	-11,000
Total Utilities, Postage, Communications	<u>\$1,576,000</u>
3. Rental Space	\$ 345,000
4. Inflation	<u>\$1,800,000</u>
Grand Total, Uncontrollable Increases	<u>\$6,856,000</u>

NECESSARY PAY AND RELATED BENEFITS - An amount of \$3,135,000 is required for the projected higher costs in FY 1986 of FY 1985 staff. These are provided to employees as a result of within-grade (\$1,783,000) and Merit Pay (\$273,000) increases. Funds also are required in FY 1986 to cover increased costs attributable to one additional paid day (\$412,000), unemployment compensation (\$400,000), the one-half percent pay increase granted employees in January 1984 (\$640,000), and an offsetting amount due to grade target reduction affecting positions in grades GS 11 to 15 (-\$373,000). Costs are calculated using an automated program developed to compute on a position-by-position basis, taking into consideration workyears authorized by the Office of Management and Budget, savings from turnover and from filling vacancies at lower grades when possible. For example, approximately one workyear of approved employment is lost for every \$28,000 that must be applied to these costs from funds currently available for salaries and benefits. Consequently, if other object class funds must be applied to these costs, employees are left without adequate supplies and equipment to sustain current level programs and functions.

Within-grade Step Increases - Funding of \$1,783,000 is required in FY 1986 for within-grade step increases. For General Schedule employees, these increases are required by 5 U.S.C. 5335. Wage employees are covered by law and prevailing rates. Increases include the part-year cost of new actions scheduled to occur in the budget year, as well as the cost of annualizing step increases occurring in the current fiscal year.

The General Schedule portion of the request is \$1,446,000. There are approximately 2,600 General Schedule employees of whom an estimated 1,500 are scheduled to receive within-grade increases. The Wage portion of the request is \$337,000. There are approximately 900 Wage employees of whom an estimated 300 are scheduled to receive within-grade increases.

Merit Pay - The Merit Pay portion of the request is \$273,000. These increases are required under the provisions of the Civil Service Reform Act of 1978 and were calculated following guidelines issued by the Office of Personnel Management (OPM). The amount requested for Merit Pay replaces the amount for within-grade increases that would have been paid to Merit Pay employees under the conventional step system and the amount for quality step increases that OPM estimates would have been paid to Merit Pay employees.

One Additional Workday - The annual rates of pay, as well as resources currently available for compensation to employees, are based on employees being paid for a 260-day workyear. Fiscal Year 1986 will contain 261 workdays. Additional funding of \$412,000 is required to cover employee salaries and benefits costs for the full number of days wages will be paid.

Unemployment Compensation - Public Law 96-499, the Omnibus Reconciliation Act of 1980, requires each Federal agency to pay the costs of regular and extended Unemployment Compensation for Federal Employees (UCFE) benefits paid to former employees by State employment security offices. These benefit costs prior to 1981 were paid by the Department of Labor from a separate appropriation provided that agency for this purpose. Since FY 1982, the Smithsonian has had to absorb the costs of unemployment compensation by reprogramming funds approved for research, exhibitions, buildings maintenance and public service programs. These across-the-board reductions severely affect the ability of the approximately 65 organizational units which comprise the Smithsonian to sustain progress in key operating programs. Total costs absorbed in previous years have been: FY 1982 - \$337,000; FY 1983 - \$446,000; FY 1984 - \$360,000; and costs are estimated to be \$400,000 in FY 1985 and in FY 1986.

Although costs for Unemployment Compensation are substantial in any year, the Smithsonian has taken measures to limit these. For example, in FY 1984, the Institution contracted with an independent firm to provide comprehensive cost control services including thorough review and evaluation of personnel procedures, direct claims handling, data processing, reporting and auditing--a process which also identifies illegitimate claims. In addition, supervisors and managers are provided, through formal classes conducted by the Smithsonian Office of Personnel Administration, guidance and instruction on hiring and other management practices to help hold down costs.

The Smithsonian requests an amount of \$400,000 to cover the projected costs of Unemployment Compensation benefits for former employees.

Costs of the One-half Percent Pay Increase - An amount of \$640,000 is required to cover increased pay costs for General Schedule, Executive, Merit and Wage employees attributable to the additional one-half percent pay increase granted employees in FY 1984. This legislated pay raise, which increased the percent of the annual FY 1984 comparability increase from 3.5 to 4 percent, was granted employees subsequent to submission to the Congress of the Smithsonian's FY 1985 budget request. Therefore, no base resources are available to cover these higher pay costs.

OMB Grade Target Reduction - At the direction of the President, the Office of Management and Budget (OMB) and the Office of Personnel Management (OPM) implemented in FY 1985 a joint initiative to improve the management of positions in the GS/GM 11 to 15 grade range. For FY 1985, the reduction assessed the Smithsonian is \$187,000. For FY 1986 - FY 1988, the reduction each year will be \$373,000 and for FY 1989, the final year, the reduction will be \$186,000. Although the prime motivator is through budget reductions, OPM will measure progress by monitoring four factors: (1) average grade; (2) ratio of GS/GM 11 to 15 population versus GS 1 to 10 population; (3) percentage of GS/GM 11 to 15 supervisors in the GS/GM workforce; and (4) absolute reduction of GS/GM 11 to 15 employees. Formal guidelines on administering the planned reductions are being developed for implementation in early FY 1985. Consequently, an amount of \$373,000 is being relinquished in FY 1986. The cumulative reduction over a five-year period amounts to \$1,492,000 as indicated by the following chart.

Cumulative Reductions in Employees and Funding in Grades GS-11 through 15

(\$000s)

FY 1985 - FY 1989

FY 1985		FY 1986		FY 1987		FY 1988		FY 1989	
No. of Employees	Amount	No. of Employees	Amount	No. of Employees	Amount	No. of Employees	Amount	No. of Employees	Amount
5	\$ 187	25	\$ 560	50	\$ 933	75	\$1,306	100	\$1,492

UTILITIES, POSTAGE AND COMMUNICATIONS - Currently, a base of \$14,912,000 is available to fund the costs of electricity, steam, gas, fuel oil, water, postage and communications. An additional \$1,576,000 is sought in FY 1986 to cover the projected increased cost of these items. The following table depicts actual and anticipated use and costs of the components which comprise the utilities account between FY 1983 and FY 1986, and summarizes the projected base shortage in each between the FY 1985 request and the estimated costs for FY 1986.

ANALYSIS OF UTILITIES COSTS

FY 1983 - FY 1986

Fiscal Year	ELECTRICITY			STEAM			GAS		
	Use Millions of KWH	Unit Cost Average per KWH	Cost \$000s	Use Millions of lbs.	Unit Cost Average Per 1,000 lbs.	Cost \$000s	Use Millions of Cu. Ft.	Unit Cost Average Per Cu.Ft.	Cost \$000s
1983 Actual	89.1	.0664	5,919	198.4	14.55	2,887	1.069	.7484	800
1984 Estimate	92.5	.0900	6,380	200.1	15.50	3,102	1.348	.7693	1,037
1985 Estimate	96.4	.0710	6,855	206.5	15.50	3,200	1.350	.8889	1,200
1986 Estimate	99.4	.0746	7,418	219.4	15.50	3,400	1.350	.9341	1,261
1986 Estimate			7,418			3,400			1,261
1985 Base			6,480			3,079			1,080
	Base Shortage, Electricity		<u>\$ 938</u>	Base Shortage, Steam		<u>\$ 321</u>	Base Shortage, Gas		<u>\$181</u>
	Telephone Costs \$000s			Postage Costs \$000s			Fuel Oil/Water Costs \$000s		Total Costs \$000s
1983 Actual	\$2,142			\$ 822			\$189		\$12,759
1984 Estimate	2,350			1,300			235		14,404
1985 Estimate	2,530			1,200			270		15,255
1986 Estimate	2,749			1,335			325		16,488
1986 Estimate	2,749			1,335			325		16,488
1985 Base	<u>2,760</u>			<u>1,181</u>			<u>332</u>		<u>14,912</u>
Base Surplus, Telephone	<u>\$ 11</u>	Base Shortage, Postage	<u>\$ 154</u>	Base Surplus, Fuel Oil/Water	<u>\$ 7</u>	TOTAL, Base Shortage	<u>\$1,576</u>		

Electricity - The major component (\$938,000) of the proposed utility increase is for electricity. Consumption estimates have been refined to take into consideration full occupancy of the Museum Support Center in Suitland, Maryland, and partial occupancy of the Quadrangle on the Mall. The projected higher cost for electricity also reflects a 5.9 percent rate increase approved during FY 1984 by the District of Columbia Public Service Commission.

Steam - The projected shortage of \$321,000 for steam is attributable to consumption increases associated with the initial occupancy of the Quadrangle, and to adjustments in the rates charged by the General Services Administration to generate steam in FY 1983 and FY 1984.

Gas - For gas, the projected shortage of \$181,000 is attributable to an increase in consumption associated with the occupancy of the Museum Support Center, and to space revisions at Silver Hill and the National Zoological Park. Also, the higher rates anticipated for gas result from increases in fuel costs which are passed on to consumers by the utility companies.

Communications - The Institution has continued to limit communications costs through the purchase of previously leased telephone equipment in FY 1984 and FY 1985; and through a program, begun in FY 1983, to reduce the escalating volume of FTS long distance calls. These two programs are expected to reduce significantly communications costs. These savings will be applied to cover escalating costs of equipment repairs throughout the Institution and to cover the costs of new equipment to be installed in the Quadrangle.

Postage - The Institution is continuing the comprehensive program, begun in FY 1983, aimed at limiting escalating postage costs. This program includes transmittal of information to all staff on the need to reduce the volume of all classes of mail; elimination of higher cost priority domestic packages; and increased oversight and control of international air parcel mailings. A projected shortage of \$154,000 is estimated for FY 1986. Projected costs are determined by the results of two samples of one-week mailings. The cost associated with the sample periods account for approximately 85 percent of total costs charged by the United States Postal Service. The remaining 15 percent in costs represent mailings paid on an actual basis as recorded by the United States Postal Service. This method easily can reflect significant differences in costs from year to year depending upon the volume of mail during the sample periods. For example, in FY 1983, the volume of mail during the sample period was low and costs decreased from \$1.058 million to \$822,000. In FY 1984, costs increased from \$822,000 to \$1.430 million. Costs for FY 1986 are based upon estimates reflecting actual volume increases experienced between FY 1979 and FY 1983 and take into account savings resulting from the program begun in FY 1983 to limit escalating postage costs.

Fuel Oil/Water - The projected surplus for fuel oil/water is attributable to fuel oil costs for the Museum Support Center being less than previously anticipated.

RENTAL SPACE - This item consists of rental space costs of the administrative activities located at L'Enfant Plaza; the Smithsonian Institution Service Center at 1111 North Capitol Street; Navy Yard Annex; and the Archives of American Art located in New York City and Boston, Massachusetts. The terms of current leases at L'Enfant Plaza and the Service Center require the Smithsonian to assume additional costs for operating expenses brought about by increases in maintenance, utility costs and taxes. An amount of \$345,000 is required primarily for rental space at the Navy Yard Annex and the Archives of American Art in New York City.

It had been anticipated that the rental space for the Oceanographic Sorting Center at the Navy Yard Annex would not be required after the Sorting Center's move to the Museum Support Center. However, the Institution has identified a number of potential uses for this space which is available at reasonable cost. Therefore, the Institution is requesting a sum of \$245,000 in order to retain this space at the Navy Yard.

An amount of \$100,000 is required for rental space for the Archives of American Art in New York City. The Archives has occupied space in the American Federation of the Arts building for the past 23 years. During this time the Archives staff has increased from three to twelve, with no commensurate increase in space available. In FY 1984, a fire and accident survey of this leased property was performed by a General Services Administration (GSA) representative. The findings revealed an urgent need to correct overcrowding and several potential fire hazards. The current lease will expire on December 31, 1984. For the Archives to continue occupancy under a succeeding lease agreement, all deficiencies noted by GSA would have to be corrected. Correction of these deficiencies would take some time and result in considerable cost which the building owners do not wish to pay. An amount of \$100,000 is required to fund alternative leased space for the New York City operations of the Archives of American Art.

FEDERAL RENTAL PROGRAM ADMINISTERED BY THE OFFICE OF PLANT SERVICES /1
FY 1984 - FY 1986

(\$000s)

	FY 1984		FY 1985		FY 1986	
	Estimated Cost		Estimated Cost		Estimated Cost	
	Federal	Trust	Federal	Trust	Federal	Trust
L'Enfant Plaza	\$ 454	\$ 611	\$ 477	\$ 642	\$ 529	\$ 674
N. Capitol St.	613	69	720	78	788	86
Navy Yard Annex	245	-	245	-	245	-
Archives of American Art						
- New York	21	-	25	-	130	-
- Boston	6	-	6	-	6	-
Total Costs	\$1,339	\$ 680	\$1,473	\$ 720	\$1,698	\$ 760
Base	<u>1,353</u>	<u>680</u>	<u>1,353</u>	<u>720</u>	<u>1,353</u>	<u>760</u>
Surplus/(Deficit)	\$ 14	\$ -	\$ (120)	\$ -	\$ (345)	\$ -

/1 Trust fund cost estimates are provided for the locations listed.

ENERGY CONSERVATION EFFORTS - In order to manage use of energy in the most efficient manner possible consistent with proper environmental conditions for the collections, the Institution is continuing its comprehensive energy management program which concentrates on promoting systems efficiency and conservation. Efforts to promote conservation include operation of a complex automated power management system which has resulted in substantial energy cost avoidance. This system minimizes costly peak demand rates by cycling motors on and off on a prescheduled basis and, when necessary, selectively shutting down equipment. Monitoring systems have assisted greatly the Institution's conservation efforts by assuring that all building operating equipment functions efficiently.

Progress made in promoting energy conservation in FY 1984 and planned for subsequent years includes continuation of the phased program of performing comprehensive building energy audits and renovating heating, ventilating and air conditioning, plumbing and electrical systems in the Institution's facilities. (Plans and progress in developing energy efficient utilities systems are addressed in the Construction section of this budget.) Improvements in these systems will produce the most significant energy savings to the Institution while providing stable temperature and humidity conditions necessary for the preservation of the collections.

Other continuing efforts to achieve more economical and efficient energy use include reducing lighting levels in work and nonpublic areas; installing more efficient lighting fixtures with new switching patterns and controls; operation of heating and air conditioning systems at minimum levels required to prevent damage to collections; shut-down of fans and other heavy consumers of electricity during non-public hours; continuation of an awards program for employees who submit original suggestions that are implemented to conserve energy; and greater attention to energy conservation in determining space use, in modifying existing space, and in designing new facilities.

Although weather, numbers of visitors and new facilities all affect energy consumption, a measure of the success of the Institution's energy conservation efforts can be

seen in the fact that consumption of electricity, steam and gas has increased only moderately between FY 1983 and FY 1986 despite the addition of new facilities including the Museum Support Center at Suitland, Maryland, and the Quadrangle on the Mall.

INFLATION - Resources totaling \$1,800,000 are requested to help offset the cumulative and anticipated costs to the Smithsonian as a result of estimated inflation. The amount requested represents 4.6 percent of total nonsalary expenses for FY 1985, excluding utilities, rent and Museum Support Center move and equipment. Inflationary increases represent significant costs that have the cumulative effect of seriously eroding research, exhibitions, collections management, collections acquisition, and education and public orientation programs, as well as facilities management and administrative services. The result of inflation, therefore, is equivalent to a significant cut each year to the base resources of all the Smithsonian's approximately 65 organizational units.

Research - Cost increases have a severe effect on the Institution's ability to carry out the mission of its programs. In the area of scientific research, scientific supplies and contracts for the repair and maintenance of research equipment are becoming increasingly more costly. In addition, cost increases for computer assisted or related items have become erratic. This price fluctuation compounds the difficulty in budgeting for support for the scientific staff. In discussions with some major suppliers, the Institution can anticipate inflationary increases of seven to eight percent for scientific equipment and six to eight percent for laboratory supplies.

The effects of inflation on costs for books, journals, papers and publishing, as well as research-related items, impact on virtually all Institutional programs. Price increases for books and journals have been so severe that the Smithsonian Institution Libraries' budget for these items has not been able to keep pace with the rate of inflation. Because of the rise in paper costs, books and journals have averaged a 15 percent cost increase each year over the year before for the last five years. It should be noted that money to offset inflation does not result in program improvements, but only program maintenance.

The cost of publishing, which is essential to scientific research as well as to exhibitions and educational programs, continues to increase. It is estimated that FY 1986 publishing costs will increase five to six percent above costs in FY 1985. The following chart illustrates further some examples of price increases for items that are purchased regularly:

Research and Scientific Supplies and Contracts

<u>Item</u>	⁸⁴ <u>FY 1983</u>	⁸⁵ <u>FY 1984</u>	⁸⁶	<u>Percentage Increase</u>
Electron microscope maintenance/year	6504	7020		8 percent
Deionized water service	3120 2,880.00	3660 3,120.00	17.3% ↑	8 percent
Dry ice, 100 lbs.	8.70	10.00	same	15 percent
Volumetric flasks (250 ml., case)	71.04	80.16		13 percent
Beakers (1,000 ml., case)	67.63	74.16		10 percent
Film, 35 mm. (ASA 400, roll)	5.20	5.81		12 percent
Laboratory isotemp oven	425.00	507.00		19 percent

Exhibitions - The increases in costs for materials and supplies caused by inflation place a severe strain on the base resources needed to maintain an active exhibition program. In addition to increases in costs of materials to assemble stationary exhibits there are, as well, special costs involved with traveling exhibits. The transportation

	'84	'85	
Waste disposal (united)	23 2268	2424	6.9% ↑
Packard Instruments - contract	2940	3145	(
Liquid Nitrogen/liter	56.70	59.50	5% ↑
	(3,930 tot)		

and shipping activities associated with the Smithsonian programs such as the Traveling Exhibition Service (SITES) and loan programs of the museums and galleries are also experiencing rapidly escalating costs. Because the collections possess intrinsic as well as scholarly value, special care and handling are required which increases transportation fees; SITES estimates an increase of ten percent for shipping costs in FY 1985. The chart below illustrates cost increases experienced for several items used extensively in exhibits preparation:

<u>Exhibition Materials</u>			
<u>Item</u>	<u>FY 1983</u>	<u>FY 1984</u>	<u>Percentage Increase</u>
Plywood - 4'x8'x1/2" (AC grade)	\$ 20.50	\$ 21.86	7 percent
Drywall - 4'x8'x1/2" (firetreated)	5.47	7.74	42 percent
Pine - bd. ft. (rough) (100 board foot lot)	4.40	4.84	10 percent
Registers - 12"x6"	7.70	8.50	11 percent
Plexiglas - 4'x8'x1/4" (UF3)	105.00	143.50	37 percent
- 4'x8'x1" (clear)	300.00	400.00	34 percent

Collections Management - Comprehensive collections management programs, essential to the preservation of the invaluable objects of the Institution, are not immune from inflationary effects and some price increases in this area are expected to be significant.

The live collection at the Zoo requires special care. Specialized diets and medical care are essential requirements. Animal food continues to be the single largest non-salary expense the National Zoological Park incurs. The cost of animal food was \$384,000 in FY 1983. Expenditures for food are expected to exceed \$430,000 in FY 1984, a 12 percent increase. The Zoo continues to supplement food and bedding purchases by growing hay and alfalfa at the Front Royal Conservation and Research Center. The following are examples of price increases for collections management items:

Collections Management Equipment and Supplies

<u>Item</u>	<u>FY 1983</u>	<u>FY 1984</u>	<u>Percentage Increase</u>
Mylar document protectors	\$.18	\$.21	17 percent
Liquipaks (10 gal.), 100	1,066.90	1,232.50	16 percent
Film (EPT - 135-36, roll)	4.89	5.41	11 percent
8-pocketed mylar protectors (10"x15")	1.00	1.50	50 percent
Scalpel, surgical blade size #10/150 per box	33.00	89.10	170 percent
Syringe, lcc., case	54.60	62.70	15 percent
Povidine - iodine solution (4 gal., case)	46.00	61.00	33 percent
Mat board (40"x60"/8-ply)	3.00	5.95	98 percent

Facilities Management and Administration. - Inflationary increases are experienced in the costs of security items vital to the protection of the Smithsonian. It is estimated that \$387,000 will be expended in FY 1985 for security system maintenance and repair, an increase of approximately six percent over the cost of similar services provided in FY 1984. Safety glasses provided to workers whose jobs require eye protection are projected to increase in cost by nine percent in FY 1985. The Office of Protection Services expended approximately \$6,600 in FY 1984 for this item.

Computer maintenance services for the Office of Information Resource Management, which is involved with collections management inventory efforts, are projected to increase nine percent in FY 1985. The following prices indicate price increases for several protection items and buildings maintenance supplies:

Protection and Buildings Maintenance

<u>Item</u>	<u>FY 1983</u>	<u>FY 1984</u>	<u>Percentage Increase</u>
Fire extinguisher maintenance	\$ 3,000.00	\$ 3,300.00	10 percent
Uniform cleaning	71,000.00	78,100.00	10 percent
K-9 Veterinary fees (contract)	7,150.00	7,865.00	10 percent
Pest control (contract)	1,037.00	1,710.00	65 percent
Work gloves, leather	3.20	4.80	50 percent
Floor wax (gallon)	11.00	11.75	7 percent
Trash removal (contract) (for one museum)	26,497.00	34,817.00	31 percent

The request of 4.6 percent increase to nonsalary funds is a modest one. Yet, the additional resources of \$1,800,000 proposed are vital to the integrity of virtually all programs of the Institution and will assist in restoring lost purchasing power due to the effects of inflation.

OFFICE OF THE ASSISTANT SECRETARY FOR SCIENCE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	15	545	1	75	--	18	--	90	4	340
FY 1985 Estimate	15	567	2	150	--	21	--	130	4	383
FY 1986 Estimate	15	567	1	107	--	1	--	130	4	305

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Assistant Secretary for Science provides guidance, planning and overall policy direction for the Institution's scientific research efforts, as well as for the science-related education and exhibition activities. Included in this line item is the Smithsonian Office of Educational Research (SOER), a unique endeavor devoted to conducting basic and applied research in the little studied field of informal learning. No program increase is requested for FY 1986.

PROGRAM - I. Immediate Office, Assistant Secretary for Science: With base resources of 10 workyears and \$389,000, the Assistant Secretary for Science serves as the principal advisor to the Secretary for the coordination and planning of Smithsonian science activities. The activities reporting to the Assistant Secretary for Science are the National Museum of Natural History/Museum of Man, the Astrophysical Observatory, the Tropical Research Institute, the Environmental Research Center, the National Air and Space Museum, the National Zoological Park, the Office of Fellowships and Grants, the Office of Educational Research, and the International Environmental Science Program. This Office also administers and provides oversight on a number of trust-funded programs which advance institutional objectives in science, and serves as liaison with prominent national and international science organizations, including representation on many national and international boards and commissions.

Continuing attention will be paid over the next several years to refining and developing new mechanisms to ensure the quality of the scientific activities already under way or planned at the Institution. Increasing attention and oversight will be given to the development of master plans to guide future year facilities requirements at several science bureaus. In addition, strategies will be pursued to improve the quality of the science-related educational activities, and service to the public interested in all the fields of science.

II. Office of Educational Research: With base resources of 5 workyears and \$178,000, this Office researches the process by which people learn outside of traditional learning settings, and the applicability of such findings to enhance learning situations in nonschool environments such as museums, nature centers, zoos, and within the family. The Smithsonian Institution's role as a national leader in out-of-school learning makes it an appropriate focal point for research in informal learning. Research findings not only influence and support the activities of exhibition designers, education coordinators, behavioral scientists, and managers of special programs within the Smithsonian,

but also are disseminated widely through publications and workshops to professional and lay audiences.

Publications produced by SOER professional staff during FY 1983 and FY 1984 have presented findings that will lead to better museum education practice. Selected titles are: "Time and Behavior as Predictors of Learning," "Field Trips: A Look at Environmental Effects on Learning," "Museums: Public Institutions for Personal Learning," and "Evolutionary Influence on Human Visual Preference." Future efforts will be made to publish research results in a nontechnical newsletter addressed to the lay public and relevant professionals. Beginning in FY 1985, this Office plans to publish in the SI Contributions series, the Institution's principal scholarly publication, as a mechanism by which the Smithsonian can disseminate its research findings to the interested academic community.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by annual allotments and are used primarily to support three significant international foundations which operate field research stations used by Smithsonian staff members, as well as by the world scientific community. The Seychelles Island Foundation operates the former Royal Society station on the island of Aldabra, located in the Indian Ocean, where biological research is conducted (estimated expenditures of \$15,000 in FY 1985 and in FY 1986). Support is continuing in FY 1985 and FY 1986 for the Charles Darwin Foundation which operates a biological research station in the Galapagos Islands (estimated expenditures of \$30,000 in FY 1985 and in FY 1986). The Mahendra Nature Conservation Trust operates a field station in the terai region (a lowland, grassy plain) of Nepal where significant ecosystem research is under way and provides scholars with a unique environment on the Indian subcontinent for further investigation (estimated expenditures of \$10,000 in FY 1985 and in FY 1986). Smithsonian support facilitates the continued accessibility of these areas for the research community at large. Support also is provided for the exchange of scholars and scientific information between the Smithsonian and a number of nations, principally, the People's Republic of China (estimated expenditures of \$20,000 in FY 1985 and \$14,000 in FY 1986). In addition, funds are provided to the Office of Educational Research by an allotment to support a work-learn program which attracts talented undergraduate and beginning graduate students in education and psychology from across the country. These funds also are used to develop and support an educational seminar program to bring distinguished researchers and scholars with expertise in informal learning to the Washington metropolitan area in order to increase the visibility of informal educational research and enhance communication links among professionals of this field (estimated expenditures of \$48,000 in FY 1985 and \$8,000 in FY 1986).

Restricted Funds - These consist of restricted endowments, gifts and grants from individuals, foundations and corporations which specify the use of the donation or bequest. Contributions from various sources provide for continuing support of conservation and science in the Galapagos Islands (estimated expenditures of \$50,000 in FY 1985 and in FY 1986). Competitive awards are made to Smithsonian units from the Seidell Endowment Fund, administered by this Office, which provides for dissemination of scientific information (estimated expenditures of \$75,000 in FY 1985 and in FY 1986). The FY 1984 awards from the Seidell Endowment are reflected in the expenditures of the organization receiving the funds.

Federal Grants and Contracts - Contract funds have been provided by the Office of Naval Research for the continuation of studies in the area of manpower research and development (estimated expenditures of \$238,000 in FY 1985 and \$225,000 in FY 1986). A grant from the National Science Foundation has been received by the Office of Educational Research to develop a model effort in community-based science education (estimated expenditures of \$67,000 in FY 1985). Additional funds also are anticipated from the National

Science Foundation to support a project to investigate the effects of social and physical contexts on motivation, learning strategies and retention with particular emphasis on those factors which seem to influence the acquisition of life-long learning skills (estimated expenditures of \$78,000 in FY 1985 and \$80,000 in FY 1986).

NATIONAL MUSEUM OF NATURAL HISTORY/MUSEUM OF MAN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	504	18,885	1	438	--	226	7	1,776	41	1,904
FY 1985 Estimate	504	20,270	--	47	--	240	6	1,884	42	2,546
FY 1986 Estimate	514	21,329	--	30	--	232	6	1,857	36	1,652

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of Natural History/Museum of Man (NMNH/MOM) carries out basic research on the natural and physical sciences and on the origins and development of man. The collections of the Museum, comprising approximately 84 million specimens, are used by staff and visiting scientists, and are carefully managed for the use of future scholars. The Museum has the legal responsibility (20 U.S.C. 59) to serve as the repository for all collections of objects of natural history, archeology, and ethnology made by the agencies of the government when they are no longer needed for investigations in progress. The Museum's exhibits are viewed by nearly six million visitors each year, and the Museum's education program serves these visitors, as well as many special groups, such as schools, the aged and the disabled. For FY 1986, an increase of 10 workyears and \$1,059,000 is requested to strengthen the Museum's Native American Program (5 workyears and \$159,000); to continue a research equipment acquisition program (\$400,000); and to initiate a comprehensive biological inventory of Panama (5 workyears and \$500,000).

PROGRAM - As a leading international museum, the NMNH/MOM has a special obligation to both the public and scholarly communities. The collections which serve as its foundation are available for study by the Museum's own staff and by thousands of visiting scientists each year (over 4,100 in 1983). These collections also form the basis for exhibitions, publications and educational activities. Since the collections are the primary assets of the Museum, their care and conservation must be constantly attended to so that future generations may benefit from their existence. Since collections serve to document change, acquisition of new material is a necessity. Rapid change in the world has an effect on both nature and Man, and this process must be both observed and quantified by specialists. The resultant findings then will be available to the public for their own edification.

Research - The research program of the NMNH/MOM is carried out by a staff of 115 professional scientists and 190 technicians. The research carried out by this staff is collections-based. It strives to explore and provide understanding of the natural world and the cultures of Man. In FY 1983, scientists at the Museum published nearly 500 books, scientific papers and articles.

The contributions to knowledge made by the Museum's research staff ranges from fundamental taxonomic and descriptive, to broad-based ecological studies. In all cases, the data produced provides necessary building blocks upon which more advanced studies and management plans can be developed. The Museum traditionally has provided assistance to United States agencies and universities. The Museum's collections, staff and publications provide a major source of information to outside organizations concerned with the

natural and physical sciences as well as Man-related studies. Major research accomplishments in FY 1984 include:

- Publication of a centennial volume on the infamous 1883 Krakatoa eruption. This book brings together in one place both the previously published accounts and numerous unpublished documents. As a result, a fuller account of this historic event and its consequences now is available with the proper scientific retrospection. This knowledge will enhance the understanding of future large volcanic eruptions.

- Evidence from marine microfossils found in the Mediterranean Basin has led a team of paleontologists headed by a Museum expert to understand how the sudden filling of the Basin occurred about four million years ago from the Atlantic Ocean. The aim of this continuing research is to explain the pathway by which the Basin was filled to form the Mediterranean Sea. This knowledge is significant in order to understand the evolution and distribution of modern plant and animals in the region.

- Publication of a comprehensive, three-volume work that is the first modern and complete treatise of the grasses of southeastern Brazil. Because grasses are vital as a human food source and as animal feed and fodder, this work will be used widely by Latin American agriculturists and institutions concerned with development.

- Venezuela's high, sheer-sided, sandstone mesas, known as tepuis, which stand like land-locked islands in the clouds, have for centuries intrigued scientists and novelists who called the area the "Lost World." In FY 1984, a team of Museum biologists, along with outside colleagues representing various disciplines, began a program of field work on top of Neblina--"Mountain of Mists"--to explore this unique area of the world. Data on the flora and fauna from this site will have an important bearing on various theories about the origin of the rich tropical flora and fauna of the neotropics.

- By the end of 1984, six volumes of the 20-volume series of the Handbook of North American Indians will be completed, and the seventh volume is scheduled for publication by the end of 1985. The books are being used widely by the lay public as well as by professional scientists to understand Native Americans as evidenced by the more than 55,000 copies sold thus far.

Exhibitions - During the last five years, the exhibits program of the Museum has undergone marked change. The focus for this change has been the Thomas M. Evans Hall for special exhibits, where shows are presented of short duration, originating either within the Smithsonian or brought from elsewhere. Especially successful shows in the Evans Gallery have been "5,000 Years of Korean Art," "Japanese Ceramics," "Heritage of Islam," "Precious Legacy," "Ban Chiang," "Inua - Spirit World of the Bering Sea Eskimo," and "Exploring Microspace." The "Inua" and "Microspace" shows were of special significance to the Museum because for the first time temporary exhibitions could be mounted from the Museum's own collection. "Precious Legacy" was a particularly moving exhibition that brought more than 100,000 visitors to the Museum in eight weeks. Although visitor statistics for the Evans Gallery cannot be separated from those for the Museum, it is likely that the popularity of the exhibits in the Gallery has played a major role in the Museum's increased attendance figures.

In FY 1985, the Museum will mount another major show in the Evans Gallery based on its own collections. This new show, titled "American Science Comes of Age," will feature materials gathered by the Wilkes Expedition, an around-the-world expedition that lasted from 1838 to 1842. The materials gathered in this expedition were the first collected systematically through government-sponsored research and constitute the nucleus of the National Collections.

Collections Management - The basic rationale for a museum is its collections, and over the last decade particular attention has been paid to those at NMNH/MOM. In the last few years, the inventory of the Museum's holdings has accelerated the management of information about the Museum's collections, and the pending move to the Museum Support Center (MSC) also has allowed for greater attention to conservation of the collections. Teams of people are working in each of the scientific departments to document materials for the move, to reconcile move records with the inventory records, and to clean and prepare specimens for the relocation. A new collections management policy has been adopted, and supportive policies have been established in each of the departments which will ensure the maintenance of high standards in collections management for the future. Strict controls have been established to ensure adherence to these policies.

Continued attention will be given to the collections as they are moved to the MSC. This will involve all seven scientific departments, and will particularly involve the Department of Anthropology which will be moving nearly all of its collections to the MSC. The completion of the inventory and the move to the MSC allows for a careful reexamination of objects retained on the Mall. Serious deficiencies in collection storage equipment on The Mall will need to be addressed over the next several years.

Education - The Museum's Education program continues to be very successful in reaching a large number of visitors of all ages with a variety of tours and other learning experiences. About 300 volunteer docents and a small permanent staff provide hundreds of tours each year for school groups and other visitor groups. Museum staff are developing new ways to bring the Museum's educational resources to the millions of people who cannot visit in person. Traveling exhibits based on the Museum's collections are brought to many communities throughout the United States by the Smithsonian Institution Traveling Exhibition Service. During the past year, a new series of instructional charts on plant and animal identification was initiated. These posters will be useful in classrooms, clubs, nature centers, and many other educational settings including the home.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 10 workyears and \$1,059,000 is requested to strengthen the Museum's Native American Program (5 workyears and \$159,000); to continue a research equipment and acquisition program (\$400,000); and to initiate a comprehensive biological inventory of Panama (5 workyears and \$500,000).

Native American Program (5 workyears and \$159,000) - A major new thrust is planned to strengthen the Department of Anthropology's Native American studies. The Department's effort is designed to make more readily available to the Native American community use of its enormous archival resources and to increase the Smithsonian's scholarly attention to contemporary Native Americans. This new effort also will enable the Museum to involve Native Americans more effectively in research, exhibit planning, collection purchase and management, and educational programming, thus modernizing the Museum's perspective and scholarly program with respect to contemporary Native Americans and bringing to this program the increased level of activity it deserves.

For FY 1986, an increase of 5 workyears and \$159,000 is requested to maintain and strengthen the direction of the program, especially in the areas of research, collection purchase, curation, exhibition and loans. The proposed new resources will be used for conserving the Native American collections, training Native Americans in archival research, and purchasing contemporary North American Indian art, tape recordings of Native American music and oral history, Native American produced cinemas, video tapes and documentary films. The long-term benefits of the project for the Smithsonian Institution will be permanent acquisition of contemporary Native American objects, new important research in contemporary Native American culture, improved contacts with the Native American community and a trained staff to deal with Native American issues and public requests.

Equipment Acquisition Program (\$400,000) - The advancement of scientific knowledge is dependent on the creativity exhibited by the individual researcher or research teams. Increasingly, however, the availability of advanced research tools is becoming an essential complement in allowing researchers to make new insight into science. Therefore, the Museum has placed as a top priority the acquisition of new scientific equipment. This equipment will in some cases, replace or upgrade existing research tools, and in other instances will represent new instruments to take advantage of research opportunities. Computers have revolutionized the scientific field as did the microscope in its era. Word processing and information management tools including the new video disc technology have become a necessity to modern museum work. As the result of an equipment survey completed in April 1984, the Museum has determined that a sum of \$3,478,000 is needed over a five-year period for replacement of scientific equipment.

For FY 1985, a request totaling \$260,000 is anticipated to begin this phased program. With these funds the following pieces of equipment will be purchased not only for principal users, but also will be made available to other departments within the Museum: (1) a transmission electron microscope, (principally for the Department of Botany and other departments in the Life Sciences); (2) an atomic absorption unit (for the Department of Mineral Sciences); and (3) an image analyzer (for the Department of Paleobiology).

To enable the Museum to continue this phased program, an amount of \$660,000 is requested for FY 1986 (an increase of \$400,000 over the anticipated FY 1985 base). This request will allow the purchase of the necessary research equipment to keep the Museum in the forefront of scientific investigations and to increase efficiency and productivity. Representatives of the kind of equipment to be replaced in FY 1986 are the following:

- Scanning electron microscope (SEM) (\$100,000) - This is needed to replace the microscope purchased in 1975 which is no longer serviceable. Delay in purchasing this SEM will cause a significant decrease in the level and quality of service available to a large group of the Museum's biologists, geologists and anthropologists.

- Zeiss microscope (\$30,000) - This equipment for the Department of Botany represents new technology that will enable plant taxonomists to measure rapidly and accurately numerical differences and conduct shape-analysis. It will advance greatly the ability to identify and study plants and plant products.

- X-ray fluorescence (XRF) Unit (\$120,000) - The Department of Mineral Sciences requires a fully automated XRF unit, an instrument used for analyzing rocks and minerals for major, minor and trace elements by exciting the elements with X-rays and measuring the secondary radiation given off by the sample. The lack of such an instrument has caused a weakness in the Department's analytical facilities, and two departmental review committees have recommended strongly the purchase of such an instrument.

Biological Inventory of Panama (5 workyears and \$500,000) - The Isthmus of Panama has long fascinated scientists because of its importance in the evolutionary history of organisms. The grand natural experiment, in which once-identical marine organisms were separated into Atlantic and Pacific populations four to five million years ago, continues to pose baffling scientific problems. It is, therefore, of great interest to the scientific community when proposals are offered to create a link artificially between the oceans for the long-isolated biotas to intermingle. The consequences in biological terms are unknown but may well prove to be environmentally damaging.

The United States Government with the support of the Government of Japan and the Republic of Panama is initiating in FY 1985 a comprehensive study of alternatives to the present Panama Canal. Several of the proposed alternatives would make inevitable the union of the flora and fauna of the Atlantic and Pacific Oceans. Insufficient monies exist within the current United States sponsored study to inventory adequately and

document organisms which might transfer between the oceans, as well as to provide for careful long-term monitoring of the consequences. The proposed biological inventory would provide for this evaluation, and serve as a valid basis for observing the effects of introducing exotic competitive species and potential pathogens to both the Atlantic and Pacific Oceans. Without such an inventory, pertinent experiments, and subsequent environmental assessments, no basis will exist for predicting the effects of potential migrations of such known species as the venomous yellow-bellied seasnake and the coral-destroying crown-of-thorns starfish on the tourist trade of Atlantic Central America, the West Indies and South Florida. Further, the effects of the introduction of exotic disease-causing organisms could result in dire consequences on the commercial fishery industries of Central America and the Gulf region of the United States.

For FY 1986, an amount of \$500,000 is required for a project coordinator and museum technicians (5 workyears and \$111,000) to initiate the comprehensive task of establishing terrestrial, freshwater, near shore, and offshore collections that are estimated to number three to five million samples at the project's completion. The balance of \$389,000 will fund costs associated with contractual services for sorting samples, supplies and materials, equipment, and travel. Subsequent years will require continuation of this funding.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from allotments, the Museum's share of net proceeds in the museum shop, cafeterias and other receipts such as the sale of exhibit brochures, the "By-Word" communications system and tuition reimbursement grants from local universities. Program allotments provided support for the Wetmore research project (estimated expenditures of \$32,000 in FY 1985 and \$20,000 in FY 1986); for the "Shanghai" and "Aditi" exhibitions in the Evans Hall Gallery (estimated expenditures of \$355,000 in FY 1984); and special events related to openings of new exhibits. In addition, Special Purpose funds are used to help finance exhibit hall brochures, field research, audio-visual equipment for exhibit halls, training for anthropology students, research in paleontology, and support of the Anthropological Archives.

Restricted Funds - These are in the form of restricted endowments which specify the use of the donation or bequest and of gifts and grants provided by individuals, foundations or corporations for specific purposes. Generally, the funds provide support for a particular exhibit or research project. Among the restricted funds are funds for field and laboratory research into the physical and physicochemical mechanisms underlying geologic and cosmologic processes (estimated expenditures of \$65,000 in FY 1985 and \$50,000 in FY 1986); and studies of mangrove swamps (estimated expenditures of \$26,000 in FY 1985 and in FY 1986). Other funding is available for ethnological research among the Canela Indians of Brazil (estimated expenditures of \$38,000 in FY 1985 and \$41,000 in FY 1986); for improvement of the curation, conservation and storage of the Philippine ethnological collection (estimated expenditures of \$184,000 in FY 1985 and \$235,000 in FY 1986); for support of the marine mammal events program (estimated expenditures of \$20,000 in FY 1985 and \$21,000 in FY 1986); and for support of the graduate fellowships for marine systems research (estimated expenditures of \$35,000 in FY 1985 and in FY 1986). Gifts have been received for the purchase of gems and minerals (estimated expenditures of \$25,000 in FY 1985 and in FY 1986); and for upgrading the Gem and Mineral Hall (estimated expenditures of \$147,000 in FY 1986). The Museum has received funds for a live exhibit depicting the marine life of the Maine Coast, in a manner similar to the present Coral Reef exhibit (estimated expenditures of \$31,000 in FY 1985); and for the "Man Makes Culture Makes Man" exhibit (estimated expenditures of \$30,000 in FY 1985). Funds also have been received toward production of the "American Science Comes of Age," exhibit which will feature materials gathered by the Wilkes Expedition (estimated expenditures \$242,000 in FY 1985). The Museum continues to seek support from private sources for its planned

exhibits. Currently, funds are being sought for two temporary shows, "The Nature Paintings of Robert Batesmen" and "Ebla to Damascus" to be installed in the Evans Hall Gallery (estimated expenditures of \$100,000 in FY 1986).

In FY 1982, the Museum undertook the management of the Smithsonian Marine Station in Link Port, Florida (formerly called the Fort Pierce Bureau), as an integral part of its marine research program. The Hunterdon Endowment is used to support oceanographic research at this facility, located on the central east coast of Florida, a transitional zone offering an unrivaled opportunity for study of a unique complex of both temperate and tropical plants and animals. Research here focuses on the life history, systematics and ecology of a wide spectrum of marine life. Contributing to the research efforts are a resident scientist, Smithsonian visiting scientists, post-doctoral fellows and numerous national and international visiting investigators (estimated expenditures of \$427,000 in FY 1985 and \$448,000 in FY 1986). Support also is provided by the Seward Johnson Endowment Fund for operation and maintenance of the Johnson-Sea-Link submersible program conducted at the facility by the Harbor Branch Foundation (estimated expenditures of \$471,000 in FY 1985 and \$500,000 in FY 1986).

The Museum also has several other restricted funds, each with anticipated expenditures of less than \$20,000 a year.

Federal Grants and Contracts - These funds are provided by various agencies and departments for special projects which can be conducted at the Museum because of its scientific expertise. Examples of Federal contract support are: an Agency for International Development grant for the study of aquaculture farming in the Caribbean (estimated expenditures of \$403,000 in FY 1985 and in FY 1986); the Systematics of Aedes Mosquitoes Project funded by the United States Army to conduct basic biosystematic research on mosquitoes that are of medical significance overseas (estimated expenditures of \$91,000 in FY 1985 and in FY 1986); another project funded by the United States Army to create a computer data file on the medical importance, distribution, ecology and collection of mosquitoes (estimated expenditures of \$65,000 in FY 1985 and \$69,000 in FY 1986); the "Tumor Registry in Lower Animals" project funded by the National Cancer Institute that facilitates the study of neoplasms and related disorders in invertebrate and cold-blooded vertebrate animals important in human biomedical research (estimated expenditures of \$331,000 in FY 1985 and \$397,000 in FY 1986); a project funded by the National Science Foundation to allow the Smithsonian Oceanographic Sorting Center to increase knowledge of polar ecosystems by studying extant collections of flora and fauna (estimated expenditures of \$100,000 in FY 1985 and in FY 1986); to process and distribute polar biological specimens and data (estimated expenditures of \$226,000 in FY 1985 and \$262,000 in FY 1986); and funds to curate material collected during the Bureau of Land Management's outer continental shelf biological sampling program in the Atlantic and Gulf regions (estimated expenditures of \$220,000 in FY 1985 and \$230,000 in FY 1986). The Museum also is seeking funds for various research projects (estimated expenditures of \$1,015,000 in FY 1985 and \$79,000 in FY 1986).

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		Funds			
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	97	7,652	43	2,053	2	445	1	220	101	12,059
FY 1985 Estimate	97	8,708	43	2,271	2	468	1	198	99	12,424
FY 1986 Estimate	100	9,208	43	2,491	2	509	1	156	120	15,681

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Astrophysical Observatory (SAO), located in Cambridge, Massachusetts, is engaged in basic astrophysical research in the following interrelated fields: atomic and molecular physics, high energy astrophysics, optical and infrared astronomy, planetary sciences, radio astronomy and geoastronomy, solar and stellar physics, and theoretical astrophysics.

Scientific data are obtained from (1) laboratory experiments in Cambridge, (2) telescopic observations, especially at the Fred L. Whipple Observatory on Mt. Hopkins near Tucson, Arizona, location of the Multiple Mirror Telescope (MMT), and (3) space observations utilizing satellites, rockets, and balloons. The reduction and analysis of these data are performed mostly with SAO's computer systems in Cambridge. The resulting astrophysical information and scientific interpretations are published in scientific journals and reports. These results also are conveyed to the scientific community and to the public through lectures and more general articles. For FY 1986, an increase of 3 workyears and \$500,000 is sought for instrumentation design and site testing for a new submillimeter telescope array that could make a fundamental contribution to our understanding of star formation, galactic structure, quasars and active galactic nuclei, and planets.

PROGRAM - Founded in 1890 by the third secretary of the Institution, Samuel Pierpont Langley, SAO has become a leading international center for astrophysics. Past achievements include Langley's own pioneering studies of solar-terrestrial relationships; the establishment of a worldwide satellite tracking network at the dawn of the Space Age; the development of the Multiple Mirror Telescope; and the landmark survey of galactic redshifts.

The Observatory's current leadership in astrophysics is based in part on its diversified approach to research, including the varied interests of the staff and its technological capabilities to create new research tools. Although the research programs are divided among seven divisions, efforts are integrated so that the results in one division often complement those in another.

Because of its location outside of Washington, D.C., SAO has several administrative departments funded by Federal funds and by indirect charges to grants and contracts. In addition, SAO maintains an engineering department, a computer facility, and an extensive astronomical library.

SAO cooperates in its scientific programs with the Harvard College Observatory (HCO), and together the two observatories form the Center for Astrophysics (CfA). A description of the programs in each division follows:

Atomic and Molecular Physics - Most techniques for interpreting observations of astronomical objects require quantitative information about atomic and molecular processes. Accurate determination of physical conditions in these objects depends directly upon the precision and completeness of the underlying atomic and molecular data. The major objective of this division is to obtain such data from combinations of laboratory and theoretical studies.

High Energy Astrophysics - Research in high energy astrophysics is concentrated on those astronomical objects that emit a substantial fraction of their energy in X-rays. Since X-rays are absorbed by Earth's atmosphere, observations must be made from balloons, rockets, the Space Shuttle, or satellites. SAO scientists and engineers are developing new instrumentation to carry out future space science missions. Scientific studies are directed at a broad range of topics including the processes involved in generating radiation observed in the X-ray band, the amount of matter in the universe, and the origin, development, and ultimate fate of the universe.

Optical and Infrared Astronomy - Research in optical and infrared astronomy concentrates on extragalactic and galactic astronomy, with special emphasis on studies of clusters of galaxies, clusters of stars, and the formation and evolution of stars. In support of this and other research, the division operates the Fred Lawrence Whipple Observatory (FLWO) on Mt. Hopkins, Arizona, the site of the Multiple Mirror Telescope (MMT), a joint project with the University of Arizona.

Planetary Sciences - Members of this division work to understand the planets, satellites, and small bodies of the solar system, and try to discover the events and processes that created them from gas and dust billions of years ago. Optical observations are performed at Oak Ridge Observatory in Massachusetts in support of this research.

Radio Astronomy and Geoastronomy - Division members' research in radio astronomy concentrate on understanding the structure, evolution, sources of energy, and ultimate fate of radio-wave-emitting astronomical objects distributed throughout the universe. Division scientists also are pioneering the use of radio astronomy techniques to measure the contemporary drifts among the continents. Other division members develop atomic clocks, test the theory of general relativity, and formulate uses for long tethers in space.

Solar and Stellar Physics - The research activities of this division are directed principally towards understanding the physical processes in the sun and stars. Stars, like the sun, are studied in order to increase understanding of the dependence of their properties on age, on composition, and on their physical associations in pairs and in groups.

Theoretical Astrophysics - Theoreticians in this division study and try to understand astronomical systems by means of physical analysis and mathematical modeling. A broad range of topics are investigated, including the interiors of neutron stars, the properties of atoms and molecules in interstellar space, the formation of spiral structure in galaxies, high temperature plasmas, and the formation of planets in the early solar system.

RECENT ACCOMPLISHMENTS AND PLANS - The major accomplishments of SAO are recorded in the results published in scientific journals by individual staff members. Approximately 200 such papers appear each year. Some examples of recent accomplishments include:

Atomic and Molecular Physics - Laboratory experiments using a laser light source in combination with an apparatus to form well-defined beams of neutral molecules have been carried out to measure the basic absorption processes of hydroxyl (the hydrogen-oxygen ion formed from water) and other ions. These measurements are important for the study of comets whose chemical components provide clues to the origin of the solar system.

High Energy Astrophysics - Division scientists are completing construction of a high-resolution X-ray imaging detector for the Roentgen Satellite (ROSAT) to be launched by the Federal Republic of Germany. They also are designing a novel X-ray telescope to be launched by the National Aeronautics and Space Administration (NASA) in a rocket, and are developing new detectors and other instruments that may be used in NASA's planned Advanced X-ray Astrophysics Facility.

Optical and Infrared Astronomy - A survey of galaxies completed at SAO has proven to be a major contribution to observational cosmology. For example, it has shown that galaxies congregate in clusters, sheets, and strings, surrounding large voids. The survey is now being expanded to cover more of the southern skies and to extend deeper into space. The results will allow the best determinations now possible of the large-scale distribution of matter in the universe.

Work to improve the optical finish of the MMT mirrors is continuing so that greater advantage can be taken of the excellent image quality allowed by the unusually steady atmosphere at the summit of Mt. Hopkins.

In a worldwide competition, an SAO scientist was one of only three chosen by NASA to be principal investigators for infrared instruments to be carried into space in the 1990s.

Planetary Sciences - Preparations have been completed for measuring the sky positions of Halley's comet at SAO's Oak Ridge Observatory as the comet becomes bright enough to observe well. These positional data will be essential to proper pointing of instruments aboard the European-built Giotto spacecraft which will pass close to Halley early in 1986.

Radio Astronomy and Geoastronomy - The first indications have been obtained by scientists in the division that at least some of the Earth's continents are moving at the same rates now as they were several million years ago.

Division scientists also are developing and about to test a new atomic clock, cooled to nearly absolute zero, that may keep time nearly one thousand times better than any clock now available; if the development is successful, such a clock would lose track of time at a rate of about one tenth of a second every billion years.

Solar and Stellar Physics - Ultraviolet observations carried out with the International Ultraviolet Explorer (IUE) satellite encompass 12 different programs in the division. Such observations by division scientists of the chromospherically active star, Lambda Andromedae, revealed the first ultraviolet flare ever recorded on a giant star, and perhaps the most energetic stellar flare yet observed.

Theoretical Astrophysics - One of the more intriguing theoretical studies has been a somewhat unorthodox investigation into conditions necessary for life elsewhere in the universe. General theoretical considerations and plausible assumptions--such as the ambient temperature required for life--may be used to determine within factors of 10 to 100, the lengths of the day and the year on habitable planets. These timescales may be expressed in terms of fundamental physical and astronomical constants, and their universality may have important implications for the existence of extra-terrestrial life.

Equipment Replacement - SAO began in FY 1984, with an appropriation of \$820,000, a program to replace its badly outmoded laboratory equipment. This program will strengthen greatly each of the experimental research efforts carried out by SAO's scientists. Further, SAO plans to initiate with a sum of \$800,000 in FY 1985 a similar program to replace and improve computing equipment used to analyze the data gathered by a variety of telescopes on the ground and in space. The laboratory equipment replacement program also is scheduled to move ahead in FY 1985 at a level of \$620,000. Both programs will continue in FY 1986 and in subsequent years.

Education - The Observatory is embarking on a project to help improve the teaching of science and mathematics to precollege students by developing educational materials and curricula to engage student interest through taking advantage of the fascination of children with astronomy. There also are on-going programs to make the scientific work of SAO available to the public, including open nights at the observatory in Cambridge, guided tours of the Whipple Observatory in Arizona, popular lecture series in Washington and Boston, and the production of an astronomical slide set for sale at cost to planetaria, schools, and amateur astronomers.

EXPLANATION OF PROGRAM INCREASE:

Submillimeter Telescope Array - For FY 1986, an increase of 3 workyears and \$500,000 is requested to begin the development of a new submillimeter telescope array. 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. By observing the appearance of the universe with high resolving power at such submillimeter wavelengths, one can study the birth of stars, probe the puzzling cores of quasars and galaxies, and, perhaps, discover other planetary systems.

Technology has only just advanced to the point where two critical requirements for such telescopes can be met: (1) large and precisely finished surfaces to focus the submillimeter waves effectively and (2) sensitive and efficient devices to detect the focused submillimeter waves. Based on a year-long, seven-person study at SAO, a plan has been developed, and two possible siting locations are under consideration.

The Astronomy Survey Committee of the National Academy of Sciences and the Astronomy Advisory Committee of the National Science Foundation have strongly recommended the development of groundbased submillimeter-wavelength telescopes, and two such single-aperture United States telescopes are now in the process of construction. The next logical step in the development of submillimeter astronomy is an array of telescopes operating as an interferometer. An array can achieve better than one arcsecond resolution, more than one order-of-magnitude improvement over single telescopes. No other instrument, operating or planned, can achieve this resolution at submillimeter wavelengths.

The new array would serve as prototype for any future national facility in this wavelength range. SAO is ideally suited with its scientific talent and size for this development, just as it was for the MMT which in many ways will be the prototype for the next generation of giant optical telescopes.

A submillimeter array will have the greatest scientific impact if it is brought into operation within the first part of the next decade, perhaps by 1990. To meet this goal, it will be necessary to assemble the senior members of the scientific and technical team in FY 1986, to begin a detailed design study. The technical area most crucial to the project is the receiver development, and it is essential that receiver experts begin work with first-class facilities as soon as possible.

Resources of 3 workyears and \$500,000 sought for this project in FY 1986 will be used for design of instrumentation and site testing. The total cost of the array, including

site preparation, construction, equipment and staff, is estimated to be approximately \$25 million.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted general funds come primarily from overhead charged on contracts and grants. These funds are used to support administrative positions and other administrative costs of SAO. Special Purpose funds come primarily from two sources: external users of SAO's Computer Center and the Institution's Trust funds. The former may be used for research purposes and for computer related purchases in future years. The latter are grouped into various programs. The Fellowships and Visiting Scholars Program anticipates expenditures of \$310,000 in FY 1985 and \$350,000 in FY 1986. Funds for special events are used for scientific lectures and meetings hosted by the Observatory.

Restricted Funds - Restricted funds consist of restricted endowments, gifts and grants from individuals, foundations, organizations or corporations which specify funds for a particular project. Restricted Endowment Funds provide support for studies in various physical sciences (estimated expenditures of \$95,000 in FY 1985 and \$50,000 in FY 1986). A grant from the Chemical Manufacturers Association assists SAO in studies of the chemical balance of halogen in the ozone of the stratosphere (estimated expenditures of \$84,000 in FY 1985 and \$87,000 in FY 1986).

Federal Grants and Contracts - SAO receives a majority of its funding through Federal agency grants and contracts for research. These studies are integrated with both governmental and academic institutions in the United States and abroad. Funding is received from Federal agencies, such as NASA, the Naval Research Laboratory and the Air Force, to support specific projects in areas of SAO's expertise. Estimated expenditures are expected to total \$12,059,000 in FY 1984, \$12,424,000 in FY 1985 and \$15,681,000 in FY 1986.

The estimated increase between FY 1985 and FY 1986 is due to the possible approval and funding by NASA of the Three-Meter-Balloon-Borne Infrared Telescope program, the ROSAT Data Center and the reflight on the shuttle of a small infrared telescope.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
FY 1984 Estimate	87	3,367	2	89	-	266	-	324	-	5
FY 1985 Estimate	88	3,574	2	106	-	196	-	397	-	-
FY 1986 Estimate	88	3,974	2	111	-	203	-	225	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Tropical Research Institute (STRI), located in the Republic of Panama, serves as an international center for studies in tropical biology. Fundamental research activities include ecology, behavior and evolution, and these are complemented by applied studies in such areas as agro-forestry and natural resource conservation. An active program of education is undertaken by visits to the Barro Colorado Island Nature Monument which is under STRI custodianship, and by preparation of audio-visual and educational materials on conservation for distribution throughout the Isthmus. Training and research opportunities are afforded to students from the high school level to senior scholar status. Marine laboratories on both the Pacific and Atlantic Oceans, as well as terrestrial facilities on Barro Colorado Island (BCI), are used by a worldwide community of scientists and students. In FY 1986, an amount of \$400,000 is requested to acquire scientific equipment (\$220,000) and equipment used in support of research (\$180,000).

PROGRAM - The Smithsonian Tropical Research Institute is the Nation's leading international center for the advancement of basic research in tropical biology. Its professional staff and visiting scientists carry out fundamental research on the ecology, evolution, and behavior of tropical plants and animals, including mankind. The Institute encourages its staff scientists to do comparative research at various locations in the old and new world tropics. These studies range from investigations of the evolution and behavior of marine and terrestrial organisms to the fluctuations and long-term changes of the tropical forest. The results of many of the projects undertaken will increase the understanding of basic scientific questions such as species diversity, how limited resources are divided, and what relationships and environmental interactions are important between tropical and temperate life forms.

STRI has the responsibility to protect and manage a very large tropical nature reserve, the Barro Colorado Island Nature Monument, located in the Panama Canal. Smithsonian interest in BCI dates to 1923 shortly after the Panama Canal began operation. As part of the Panama Canal Treaty of 1979, STRI was designated as the custodian of the BCI Nature Monument, which includes the Island and five adjacent peninsulas in Gatun Lake. This designation allows for the continued protection of a valuable natural and scientific resource, and also provides additional areas for research and conservation purposes. On July 22, 1983, President Reagan signed legislation eliminating the spending limit in Section 7 of the Act of July 2nd, 1940 (20 U.S.C.79e), permitting the financial incorporation of BCI into STRI for a more efficient administration of the Barro Colorado Island Nature Monument.

Other facilities at the Smithsonian Tropical Research Institute include a Pacific-side marine laboratory at Naos Island where a specially designed seawater system is used for controlled experimentation on organisms from both oceans without risk of interoceanic contamination. There is another smaller marine laboratory at Galeta Point on the Atlantic for shallow water investigations such as the study of coral reefs. A small field station in the San Blas Islands on the Atlantic side of the Isthmus also is available for coral reef studies, and the Institute maintains a 63-foot vessel for other offshore studies. STRI administrative headquarters are located in Panama City. Adjacent to this site is a research library, containing 20,000 volumes on subjects related to tropical biology, that is considered one of the best reference sources in the hemisphere for tropical studies. Other administrative offices, laboratories, conference rooms and study facilities are located nearby.

A major responsibility of STRI is to provide the necessary logistic and scientific base for visiting investigators coming from abroad. The library, laboratories and residence facilities, along with the experience and knowledge of the STRI permanent staff, allow the scientists from the temperate zone to work in the tropics without sacrificing the kind of support to be found in a university atmosphere. Dissertations on a wide variety of subjects can be pursued in a biologically rich environment without concern for intellectual isolation. Research projects recently undertaken include:

-- A study of the prolonged El Nino Southern Oscillation that profoundly altered the climate from Washington State to the African Continent. Extensive studies of the status and growth rates and seasonal and annual growth of coral reefs made it possible to both document and quantify the extent of the El Nino's impact on these reefs.

-- A study of the Caribbean die-off of the sea urchin Diadema antillarum, one of the most abundant Caribbean invertebrates. A pathogen, of as yet undetermined nature, appears to have had a significant ecological impact.

-- A program to study the Africanized "Killer Bee" that not only established the basis for describing the effect of the invasion of this exotic race upon native bees and pollinators, but also contributed to public awareness of the health, safety, as well as the economic menace posed by these insects. As a result of comprehensive public education programs and preparation of defense reactions, the arrival and dispersal of the Bees throughout Panama has not produced marked public health problems or economic disturbance in the agricultural sector.

STRI's most recent initiative is a multidisciplinary project being conducted with the collaboration of several Panamanian agencies in an area adjacent to the Smithsonian's Barro Colorado Island Nature Monument to develop alternatives to the current system prevalent in Central America of clearing the forest for cattle ranching. The program, "Alternatives to Destruction," aims to develop ways by which peasant families can feed themselves without destroying the forest. Various projects under this study include the management and raising of indigenous animals in the forest, such as iguanas and pacas as potential protein sources, forest gardening of nontraditional cash crops, and an aquaculture experiment.

In addition to man's current use of the forest, researchers at STRI also are interested in past use of the tropics. An archeological study in Central Panama is designed to determine the nature and longevity of human adaptations within a watershed. This study combines a series of disciplines and techniques: archeology, ethnography, bone chemistry, phytolith and pollen analysis, geomorphology and faunal studies.

STRI staff members publish extensively--over 164 articles and reports were published during FY 1983. STRI scientists recently have summarized ten years of study of a single ten-hectare watershed on BCI. The results of this long-term detailed monitoring of the

physical and biological parameters were published jointly by the Smithsonian and Oxford University Presses, "The Ecology of a Tropical Forest." Among the books that the STRI scientific community have or will have published in FY 1983-FY 1984 are: Corals and Coral Reefs of the Galapagos Islands; Communication and Non-communication by Cephalopods; and The Evolution and Ecology of Armadillos, Sloths and Vermilinguas.

Staff members of the Institute are invited frequently to lecture at universities and other institutions in the United States and in foreign countries. In FY 1983-FY 1984, STRI scientists and students participated in nine major international scientific congresses as either invited speakers or delegates, as well as in numerous national congresses and symposia. The Institute maintains close ties with international organizations involved in research and conservation in the tropics; members of the STRI staff, for example, are on the Board of the Organization for Tropical Studies and the Charles Darwin Foundation for the Galapagos Isles. In August 1983, the Institute together with the University of Panama hosted the IXth International Congress of Arachnology. This was the first time the Congress was held outside Europe and delegates from more than 20 countries attended. In addition, over 1,200 scientists and students from more than 200 institutions have utilized the Institute's resources during FY 1983 and FY 1984.

Approximately 100 young men and women representing a dozen nations participated in STRI academic programs in FY 1984. Educational efforts are devoted mostly to graduates and postgraduates although efforts are made to introduce undergraduates, and occasionally high school students, to tropical biology. In addition to an increased participation by Latin American students in STRI's short-term fellowship assistantship program, STRI was instrumental in organizing a six-week Tropical Ecology field course for students from the University of Panama. It was the first of its kind offered in Panama, and 13 biology students as well as a combination of STRI staff and University of Panama professors participated. The course was aimed at familiarizing students with the various aspects of tropical ecology, and preparing them to do their own research. STRI also hosted courses in Tropical Meteorology and Applied Oceanography given by a visiting scholar. These were attended by approximately 50 professionals from STRI and various Panamanian institutions.

EXPLANATION OF PROGRAM INCREASE: In FY 1986, an amount of \$400,000 is requested for the acquisition of scientific equipment (\$220,000) and equipment used in support of research (\$180,000).

Research Equipment

In FY 1984, a detailed scientific equipment replacement survey was conducted at the five major research sites at STRI. This survey identified a replacement need amounting to \$443,000 over five years. Funding of \$132,000 is sought for the initial phase in FY 1986. In addition, research initiatives during the next five years will require funding for new scientific research equipment. A sum of \$88,000 will be used to begin these purchases in FY 1986.

Acquisition and Replacement of Scientific Equipment (\$132,000) - The existing and expanding research initiatives of STRI require the acquisition of new and the replacement of worn or outdated scientific equipment. The relatively isolated location of the Institute combined with the harsh tropical climate require more frequent replacement of certain equipment and the need for back-up systems to ensure continuous operation. Most important is the ability to apply new technologies that greatly reduce the time required for more complicated tasks. The instruments needed in FY 1986 are: (1) an Omni-Total Station (\$32,000) for archeological and biological surveying projects. This laser-based system, which will replace conventional surveying instruments, enables the rapid surveying and construction of maps and grids for projects requiring precise designation of location, as is necessary in archeological excavations and forest ecological mapping; (2)

a Facsimile Transmitter (\$15,000) which would allow the rapid transmission of copies of the latest publications and data from the Institution's libraries in Washington, D.C., to Panama; (3) an OIS-40 Master Wang Computer or equivalent (\$55,000) with 20 megabytes of memory to increase STRI's capability to handle the increased data sets being generated by such programs as the 250,000 tree study plot on Barro Colorado Island and 15 years of data on fluctuation in the environment produced by the International Environmental Sciences Program. These data sets are extremely difficult and time consuming to process with existing minicomputers which, with the purchase of a new machine, could then be rededicated to wordprocessing and administrative functions; and (4) an automated measuring microscope (\$30,000) to allow marine scientists engaged in studies of ecological competition of microscopic marine encrusting organisms to measure accurately their growth in a fraction of the time required by conventional microscope.

Biochemical Evolution Laboratory (\$88,000) - Investigations of the evolutionary consequences of the land barrier constituted by the Isthmus of Panama have lagged behind despite their importance because STRI has lacked facilities and personnel needed to conduct this research. With the recent hiring of two researchers and the availability of rehabilitated space, the Institute is now preparing to study this unparalleled "natural experiment." In order to pursue this new research direction, a sum of \$88,000 is requested to acquire scientific equipment to establish a laboratory of biochemical evolution. Necessary instruments include a gamma scintillation spectrometer (\$30,000), a spectrophotometer (\$16,000), laboratory balances (\$8,000), and various kinds of laboratory supplies and instruments (\$34,000). In FY 1987, it will be necessary to retain base funds to complete this effort.

Research Support Equipment

In parallel with the scientific equipment survey, a review of other equipment used in support of research was conducted. This review concluded that a total of \$720,000 over five years was necessary for vehicle, boat, outboard motor and miscellaneous shop equipment replacement, as well as the initiation of a preventive maintenance program for central air conditioning systems. Currently, these needs are addressed on an emergency basis, cutting into base resources. In FY 1986, an amount of \$180,000 is being requested as follows:

Vehicle Replacement Program (\$45,000) - Smithsonian Tropical Research Institute has a total motor vehicle fleet of 34 vehicles, which is the minimum level needed to enable the scientific staff to conduct research as required at the different sites along the Panamanian Isthmus. At this time, approximately 50 percent of the motor vehicle fleet meets the minimum replacement standards. Most of the excess government vehicles owned by STRI are overaged and far exceed the mileage standards prescribed by the General Services Administration. These vehicles constitute essential research tools and are not used for routine transportation. An amount of \$45,000 will allow the establishment of a five-year replacement cycle for overaged vehicles to support all facilities and research programs.

Small Boat and Outboard Motor Replacement (\$55,000) - Most of the Barro Colorado Island Nature Monument for which STRI has responsibility is accessible only by small boats in Gatun Lake. STRI's base resources do not provide adequate funding for the replacement of small boats and outboard motors (15, 25, and 55 horsepower units) that have reached the end of serviceable life and are no longer economical or practical to maintain. Presently, different sizes of outboard motor units are in use to support research operations in marine biology at Naos, Galeta and San Blas; to transport visiting and staff scientists from research sites within the BCI Nature Monument; and to allow the force of game wardens to continue close protection of the nearly 5,000 hectares of moist tropical forest against squatters, poachers and intruders. Funding of \$55,000 will initiate a five-year program and provide for replacement of ten outboard motors and one or two small boats each year.

Preventive Maintenance of Central Air Conditioning Systems (\$50,000) - Major components of large central air conditioning systems need cyclic replacement to insure continued operation. This is essential in a tropical climate in which there is a 365-day-per-year dependence on such systems. The STRI library, its contents, books and manuscripts need continued ambient humidity control for preservation. Similarly, in laboratories throughout STRI, control of temperature and humidity is a prerequisite for scientific equipment and specimens. To meet necessary standards, \$50,000 is requested for continued replacement of valve plates, compressors, condensers, and evaporators.

Acquisition and Replacement of General Machine Shop/Maintenance Equipment (\$30,000) - Because of the wide geographical distribution of STRI's research facilities, it is difficult to maintain equipment at a centralized shop. Duplicate pieces of maintenance equipment such as vacuum pumps, seawater system components, lathes, drill presses, bench grinders and table saws are needed at the various sites to expedite maintenance and repair of both scientific and nonscientific equipment. Therefore an amount of \$30,000 is sought as the first phase of a five-year program to acquire and replace general machine shop/maintenance equipment.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including receipts and collections from users of Barro Colorado Island Nature Monument facilities (20 U.S.C. 79b(d)) and annual allotments. They are used to support, in part, the salaries and related costs of the fellowship education program, the senior sabbatical program, insurance, supplies, and facilities maintenance. Funds also are used to finance a short-term fellowship program in tropical biology, visiting scientists and students, field research, seminars, lectures and to defray expenses at international scientific colloquia and ceremonial occasions.

Restricted Funds - Funds provided here are in the form of restricted endowments which specify the use of the donation or bequest and of gifts and grants from individuals, foundations, organizations or corporations for specific purposes. These are used to support: scientific research related to the biological, ecological and behavioral processes on which tropical ecosystems are organized; research related to geophysical events; publication and distribution of research results; and studies relating to endangered tropical environments. Among these funds is the Walcott Endowment Fund which supports the study of the relationship between coral growth parameters, coral recovery and coral destruction (estimated expenditures of \$8,000 in FY 1985 and in FY 1986). Continuing support from the Exxon Corporation will be used to provide short-term tropical biology fellowships and assistance to 30 students from developing Latin American countries (estimated expenditures of \$44,000 in FY 1985 and in FY 1986); and the significant grant awarded by the W. Alton Jones Foundation, Inc., for the following research projects: management of the green iguana to determine whether populations can be increased for human consumption; the possibility of domesticating the paca as a food source; the possibility of increasing the mammal populations in the natural forests; developing horticultural practices to be used inside tropical forests, the latter project funded by another foundation. These projects are developing alternatives to the destruction of tropical forests and are being carried out over a five-year period in the West Bank of the Panama Canal in the vicinity of the Barro Colorado Island Nature Monument (estimated expenditures of \$320,000 in FY 1985 and \$169,000 in FY 1986).

SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General FTP**	Amount	Special Purpose FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	68	3,170	1	69	--	90	--	23	7	413
FY 1985 Estimate	68	3,439	1	76	--	111	--	19	7	390
FY 1986 Estimate	68	3,739	1	79	--	106	--	9	6	303

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Environmental Research Center (SERC) performs basic scientific research with two principal goals: (1) the study of plants and animals in natural environments and in simulated laboratory conditions to understand the growth, development and succession of whole environmental systems, and (2) the study of mechanisms that regulate the growth and development of whole organisms down to their cellular and subcellular levels. The Center also maintains a radiocarbon dating laboratory that provides age estimates of archeologically important samples for the Institution's museums and outside research institutions. Educational activities cover a broad spectrum from public education and student work-learn programs to pre-doctoral, post-doctoral and sabbatical programs for professionals. The Center is housed in two facilities separated by about 45 miles, the 108-room rented research laboratory building in Rockville, Maryland (formerly the Radiation Biology Laboratory) and the facility near Edgewater, Maryland (formerly the Chesapeake Bay Center for Environmental Studies), a tidal river system with its surrounding 2,600 acres of land. The Institution plans during the next five years to consolidate the activities within SERC by construction of adequate quarters on the Smithsonian-owned property near Edgewater (see FY 1986 Construction request). For FY 1986, an increase of \$300,000 is requested to continue a phased scientific equipment acquisition program.

PROGRAM - In the year since the merger of the Radiation Biology Laboratory and the Chesapeake Bay Center for Environmental Studies, SERC research programs have concentrated in two major areas, environmental biology and regulatory biology. The environmental biologist studies organisms at the organizational levels of populations, communities, ecosystems, and landscapes. Much of the research comprises a long-term interdisciplinary study that utilizes a tidal river (the Rhode River) and its watershed as a natural laboratory. Geographical and theoretical comparative studies, as well as the use of simulated but controlled environments, are also a part of this division's research. The SERC program at Edgewater concentrates on (a) how such driving forces as land use, air quality, atmospheric deposition, and variations in weather affect the movement of nutrients, sediments and other materials throughout this land/water mosaic, (b) the population dynamics and structure of important or key species and assemblages of biota, and (c) the productivity of the system's components. Research is designed to examine how changes in one part of the system affect the rest of the Rhode River system and, also, how this entire environmental system interacts with the larger Chesapeake Bay.

The regulatory biologist studies organisms at organization levels ranging from molecules to whole organisms. Research emphasis is on the mechanisms by which growth and development are affected by environmental factors, such as light intensity, color, and timing; temperature; humidity; and carbon dioxide levels. Individual projects include determining the molecular structure of pigment molecules, the assembly processes for making and inserting molecules in photosynthetic membranes, the timing and chemical control of the formation of reproductive structures, the light activation and regulation of genes and enzymes, the control of photosynthetic productivity in controlled environments (especially those controlled for light, water content and carbon dioxide), measurements of the membrane properties of cells, and the characterization of stimulus-response systems related to light and gravity in fungi.

Accomplishments:

Measurements of the amounts of ultraviolet sunlight received at the Earth's surface show that there are periodic increases and decreases that are not caused by the activities of man nor by volcanic activity. Current data from land-based instruments operated by SERC indicate that these increases and decreases are due primarily to differences in the amounts of ultraviolet produced by the sun. Data obtained by National Aeronautics and Space Administration satellites of solar radiation above the atmosphere support this finding. In light of these new data, concerns on how human activity (i.e., introduction of fluorocarbons) may affect the Earth's atmosphere by altering the ozone concentrations, and thus changing the amounts of ultraviolet radiation transmitted, must be re-evaluated. Instruments are scheduled to be installed in FY 1985 at Mauna Loa Observatory on the island of Hawaii in collaboration with the National Oceanic and Atmospheric Administration to measure ultraviolet at the peak and at sea level. These measurements in the relatively clean atmosphere remote from urban pollution will provide a better indication of the changes in ultraviolet due to atmospheric changes specifically in the troposphere.

Long-term measurements of the color quality and amounts of visible solar radiation over a 15-year time period have been completed and indicate a remarkable stability for any given geographical location. This stability is true only for the visible portion of sunlight and since most of the visible sunlight changes so little, measurements are no longer needed in wide bands. These data provide an extensive base line available to future solar research. Instruments constructed by SERC that measure in relatively narrow bands in the visible portion of the spectrum have proven to be very reliable and their use will continue in measuring selected bands of sunlight of interest for specific biological responses such as photosynthesis or flowering.

The opening of the pores on leaves (stomates) which allows for the entry of carbon dioxide for photosynthesis has been thought to be regulated by blue light or red light that is effective for photosynthesis. New data obtained based on research at SERC indicate that the far-red portion of natural sunlight interacts with an internal rhythm of the leaves to control pore size. This far-red light has been found to be most effective when other qualities of light are simultaneously present. Thus, the amount of far-red light present is apparently the significant cue enabling plants to carry out maximum rates of photosynthesis under natural conditions. However, the pigment responsible for detecting this signal and the biochemical pathways affected are still unknown. Experiments are being pursued to define more precisely the role of far-red radiation in controlling pore size.

The populations of many species of woodland birds which breed in the eastern United States are believed to be affected by the fragmentation of forests. A study of this relationship in 270 forest patches in Maryland found that the abundance of almost every bird species breeding in the interior of upland forests was influenced significantly by forest area, isolation of patches, or forest structure. Highly migratory species such as

vireos tended to be most abundant in extensive stands of mature, floristically diverse forests. Densities of permanent residents such as bluejays and short-distance migrants such as robins tended to be less affected by these site characteristics. This study was partially supported with funds from the State of Maryland.

A long-term estuarine ecosystem study which examined the role of tidal marshes and mudflats in the interception of nutrients and sediments in land runoff found that high and low elevation tidal marshes imported particulate matter and exported dissolved matter. Tidal exchanges were the major source of phosphorus to the marshes while rain was the major source of ammonia and nitrate. However, net retention or release of nutrients by the marshes was minor compared to retention of nutrients by the tidal mudflats. Thus, the mudflats were the most important habitat with respect to intercepting pollutants in land runoff. These findings are of particular importance to managers concerned with developing effective protection programs for wetlands.

In concert with its research, the Center provides a broad spectrum of educational activities. Public education activities include teacher-led field trips, self-guided nature trails, and guided tours in which groups of students and the general public may 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. Pre-doctoral, post-doctoral, and sabbatical programs for professionals at all levels enable short-term visitors (six months to three years) to carry out collaborative or independent research that complements the ongoing programs of the Center. The major products of the Center's activities are the publication of research results in scientific journals, presentation of research findings at national and international scientific meetings and invited seminars at universities, the training of scientists, and public education activities.

EXPLANATION OF PROGRAM INCREASE - A comprehensive scientific equipment survey was initially conducted in September 1983 at the Smithsonian Environmental Research Center to determine the Center's equipment acquisition needs. The survey, which was updated in June 1984, included all scientific equipment held by the Center, and showed that 55 percent of the equipment should be replaced within five years at a total estimated cost of \$2,333,000.

Funding of \$140,000 for the first phase of this program, anticipated in FY 1985, will be used to acquire two pieces of laboratory equipment. A freeze-fracturing system will provide data previously unobtainable on the three-dimensional structure of biological membranes that are sensitive to light and are involved in the capture, storage and transfer of energy from sunlight. A mass spectrometer will provide rapid and precise data on the movement of the nutrients and specific compounds through the food chains in complex natural environments by utilizing naturally occurring isotopes of carbon, oxygen and nitrogen. The acquisition of these two instruments will provide the capability of the state-of-the-art techniques that assist in answering research problems, while markedly increasing the rate at which data can be obtained.

The Center must continue to maintain a current inventory of specialized equipment given rapid changes in modes of data acquisition and the technological changes in scientific measurements. Therefore, in FY 1986 an amount of \$440,000 is requested (an increase of \$300,000 over the FY 1985 base) to support ongoing equipment acquisition as indicated in the original survey. Representative of the kind of equipment needed is a scintillation counter (\$15,000), an instrument used to trace the metabolism of biological systems; a carbon dioxide analysis system (\$41,000), used to measure the ratio of gases present in controlled plant growing chambers; a gamma radiometer (\$56,000) used to analyze the light spectra in controlled plant growing experiments; and a centrifuge (\$7,800) for general laboratory use. The equipment acquisition is a recurring program, and is expected to constitute a major portion of the Smithsonian Environmental Research Center's requested increases through FY 1989.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by allotments and sales proceeds of educational brochures and materials. They are used to support the Center's special events, summer ecology program, work-learn and fellowship programs, and the salary costs of a docent coordinator and a part-time public program director (estimated expenditures of \$187,000 in FY 1985 and \$185,000 in FY 1986).

Restricted Funds - These are provided through donations, bequests and foundation grants that are designated for specific subjects of investigation. For the Center, these include the Eppley Foundation Grant to support investigation of biological responses to solar radiation and the Rollins Endowment Fund used to support the study of physical measurements of radiation (estimated expenditures of \$19,000 in FY 1985 and \$9,000 in FY 1986).

Federal Grants and Contracts - These funds are provided by various Federal and state agencies for special projects which can be conducted at the Center because of the expertise of the Center's staff and its site characteristics. Contracts from the the Chesapeake Research Consortium, U.S. Department of Energy and the University of Minnesota are expected to total approximately \$390,000 in FY 1985 and \$303,000 in FY 1986.

NATIONAL AIR AND SPACE MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
			FTP**	Amount	FTP**	Amount			FTP**	Amount
FY 1984 Estimate	209	7,713	--	45	29	3,069	--	115	1	134
FY 1985 Estimate	209	8,049	--	8	29	2,568	--	75	1	198
FY 1986 Estimate	209	8,349	--	8	29	2,023	--	83	1	183

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Air and Space Museum (NASM) serves as an international repository for artifacts and documentation related to the development of aviation, space flight and space science. The Museum's programs encompass exhibitions, research, preservation/restoration, and education. The Museum serves a wide public and scholarly audience interested in the history and technical significance of aviation and space flight. In addition to its Mall location, the Museum maintains an off-site facility for the preservation and restoration of artifacts at the Paul E. Garber Preservation, Restoration and Storage Facility in Suitland, Maryland. In FY 1986, an increase of \$300,000 is requested to expand and accelerate the development and operation of two new archival methods, the System for Digital Recovery (\$200,000) and the Video Disc Program (\$100,000).

PROGRAM - Established by law on August 12, 1946, NASM's role as a national resource for public and scholarly interest in the air and space fields was greatly strengthened by the completion of the current museum building on The Mall in 1976. Since its opening, more than 76 million visitors have entered this Museum, making it the most visited museum in the world. The Museum's extensive holdings of artifacts, papers, photographs, microfiche, video disc and technical drawings serve not only NASM's own researchers, but interested scholars throughout the United States and abroad. The exhibition program uses state-of-the-art techniques in exhibit design and presentation to convey excitement of the subject matter to the visitor. An active scientific program, aimed at understanding both Earth and planetary geology, continues as an important endeavor of the Museum. Active programs in collections management, preservation and restoration of artifacts remain as a centerpiece of the Museum's curatorial efforts. As a public institution, considerable emphasis is placed on the education and outreach activities through lectures, films, Spacearium presentations and written materials for schools and visitors to the Museum.

In support of the collections and exhibitions, the Paul E. Garber Facility in Suitland, Maryland, carries on an active exhibition, restoration and preservation program. Activities there include exhibits preparation, collections storage and management, and aircraft preservation and restoration. The Museum has restored more than 54 aircraft and plans to restore at least three more a year over the next several years. Open-house activities at this facility draw record numbers of visitors each year.

During FY 1983 and FY 1984, the most significant accomplishments and major program activities have been:

Research - The Museum is setting new directions as a primary center for research in the history of the science and technology of aviation and space. The Museum's efforts began with the reorganization of the research staff to include an associate director of research, a curator of Manned Space Flight, a curator of Computers and Guidance Systems, and a curator for Air Transportation. Extensive research by the Aeronautics Department is currently under way on the Smithsonian History of Aviation publication project. This multivolume work, covering the history of flight from antiquity to the present, is expected to become the standard for researchers in the field. As a direct result of the research conducted on this project, NASM has acquired the entire Time-Life library of aeronautical document files, photographs and a collection of 2,000 books. Research and documentation on the Space Telescope now being built for the National Aeronautics and Space Administration (NASA) is being conducted by the Space Science and Exploration Department. The resulting publication will coincide with the launch of the Space Telescope. The Center for Earth and Planetary Studies continued research in remote sensing and geological mapping of the Earth and planets. In FY 1983, a joint agreement between NASM and NASA established the Center for Earth and Planetary Studies as a Planetary Image Facility. The Facility is a designated repository for images of the planets taken by NASA probes, allowing researchers access to the collections.

Exhibitions - The "Live from Mars" exhibition that opened during FY 1984 presents to the public two years of continuous close-up views of the planet Mars never before seen, as a result of transmissions from the Viking 2 Lander. Also in FY 1984 the "Dr. Franklin's Window" exhibition opened. This show documents the 200th anniversary of flight, and portrays to the visitor what it was like to view the first flight in history made in Paris, France on November 21, 1783. Also in FY 1984, the major gallery "Golden Age of Flight" opened, and two important artifacts in the history of American space exploration were also placed on exhibit, the flight suits of Sally Ride and Guion Bluford.

Exhibition plans for FY 1985 include increased emphasis on scientific topics that also are of historical interest. Work will begin on a new gallery entitled "Looking at Earth," which will explore efforts to see the Earth from higher vantage points, starting with early attempts using birds and kites, continuing on with balloons, aircraft, spacecraft and finally satellites to study the Earth's changing surface. The Museum's art exhibits have been extremely popular. In FY 1985, the Museum will focus on a Robert McCall retrospective that will include many works from the movie "2001, A Space Odyssey." To commemorate the reappearance of Halley's comet, a new planetarium show will open explaining the comet's fascinating history. The aeronautical developments of LeRoy Grumman and his achievements in the industry will be examined in another new exhibition.

In FY 1986 NASM is planning to provide a live "feed" of the Voyager-Uranus encounter that will present computer-generated images as they are received from the Jet Propulsion Laboratory and NASA's Deep Space Network.

Exhibitions are complemented by film showings related to air and space travel in a specially equipped theater which uses an innovative high-resolution projection system (IMAX) and a giant screen for extraordinarily realistic effects. The extremely popular IMAX film presentations have continued to generate much enthusiasm from visitors throughout the eight-year existence of the theater. FY 1985 will see the premiere of "The Dream Is Alive," a new IMAX film on the Space Shuttle with actual footage taken by the astronauts on the shuttle missions. "On the Wing," a film comparing natural and mechanical flight, will premiere in FY 1986.

Development of Collections - In FY 1983 and FY 1984, aircraft acquired for the collection included a Lockheed 10, a Krieder-Reisner KR-34, and the return of the Lockheed YO-3. On May 7, 1984, NASA transferred title of the Viking 1 Lander, located on Mars, to NASM. The Lander is the first museum artifact presently located on another planet. During FY 1985 and FY 1986, NASM's plans for developing the aircraft collections will focus on acquiring turboprop jets and early jet transport aircraft. Additional space artifacts also are anticipated to be acquired from NASA missions.

Preservation and Restoration of the Collections - The following aircraft have been restored at the Garber Facility in FY 1983 and FY 1984: the Focke-Wulf 190; the Northrop Flying Wing N-1M; the Nakajima J1N1-S Irving, the 1912 Wiseman-Cooke; and a World War I fighter, the SPAD XIII. In addition, the treatment program to reduce further deterioration of aircraft not yet restored, begun in FY 1983, dramatically reduced the rate of corrosion and enhanced the ability of the Museum to care for its historic artifacts that require immediate attention. The space artifacts restored in FY 1984 include the Fairchild ATS-6 satellite and the Minuteman III missile. As part of an expanded preservation effort, the Space Science and Exploration Department's Artifact Preservation Group developed a series of seminars to increase awareness and knowledge of artifact preservation, including a comprehensive set of guidelines for exhibition, care and handling of space suits for NASM by other museums.

Video Disc and System for Digital Recovery Projects: Photographic and Document Collections - Over 200,000 photographic images have been transferred onto video discs by the Records Management Division, facilitating greater access to the collection while eliminating loss or destruction of the original photographs. Each disc is indexed with a descriptive identification of each image, enhancing its use as a research tool for the general public and historians. These discs are easily and inexpensively duplicated, and the Museum already has made the first disc available to over 140 research facilities and plans are well under way for additional discs.

The technological breakthrough in the System for Digital Recovery of information and photographs was developed in FY 1984 by NASM staff members, entirely from Museum resources. A patent of the process is being sought. Using the most advanced computer technology, along with a Datacopy series 600 camera, this system can capture any object, document or photograph within five seconds. This information is then permanently stored on a disc without ever touching or risking damage to the document. Over 200,000 documents can be stored on each disc with quick, easy retrieval. This revolutionary system provides maximum use of storage, low equipment costs, easy access and retrieval by a key word index system, high resolution, and quality with portable capabilities. The Museum's pioneering efforts in this field have attracted international attention and have become a model for other museums, corporations and educational institutions for the future handling of their own photographs and objects.

Public Education and Orientation - The academic emphasis of NASM's Education Division has created a cooperative effort between the Museum and New York University's Department of the History of Science. In FY 1984, some of the undergraduate students within this department will conduct a portion of their course work at the Museum and receive hands-on experience working with such materials as a replica of the Wright Brothers' wind tunnel. In FY 1983 and FY 1984, NASM presented many free lectures, seminars and films to the public. Among them were the General Electric sponsored lecture series, the Von Braun lecture, the Charles Lindbergh Memorial lectures and the Exploring Space with Astronomers lecture series.

During FY 1985, divisions will concentrate on expanding NASM's association with academic and scientific organizations as part of the Museum's expanded research efforts. Seminars will be conducted with the Society for the History of Technology to establish the basis for future NASM and university-level relations, projects and courses. In

FY 1986, the Museum will plan and present a program of public events and activities to commemorate dual anniversaries, the 50th anniversary of initiated service of the DC-3 and the 50th anniversary of Amelia Earhart's solo flight from Hawaii to California.

The publications for FY 1985 include various historical monographs, the Wright Symposium papers, artifact series publications on the History of Space Suits, and the catalog on Space Shuttle Art. The annual Research Report also will be published in FY 1985 and FY 1986. The first volume of the Smithsonian History of Aviation will be completed in FY 1986. Additional publications in FY 1986 include U.S. Women in Aviation 1930-1939, the catalog of Space Astronomy Oral History, Congreve and Hale Rockets, an artifact series publication on Apollo 11, and famous aircraft series publication Boeing 247.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of \$300,000 is requested for enhancement of two new archival methods developed at NASM, the System for Digital Recovery (\$200,000) and the Video Disc Program (\$100,000). Both of these innovative programs have elicited great interest throughout the government, industry and academia, as well as other bureaus within the Smithsonian because of their numerous applications. For example, the report language of the House of Representatives prepared in conjunction with the FY 1985 Interior Appropriation bill "recommends that the Holocaust Memorial Council consult with the National Air and Space Museum to determine if the video disc storage program and digital recovery system which they have developed could be useful in archiving and retrieving the materials available to the Council in the National Archives warehouse."

Originally, the programs were started on an experimental basis, using both nonappropriated and appropriated funds which were reprogrammed from within the Museum's base resources. Having now proven the reliability and diversity of application of these techniques, the Institution seeks to expand and accelerate the video disc archival programs.

System for Digital Recovery - (\$200,000) - Using commercially available computer components and other equipment, Museum staff have devised a unique archival application for printed material which solves three major problems; indexing, storage and deterioration. First a page is scanned by a digital camera and that information is stored in computer memory. Next, the text is searched and an index of keywords is generated automatically. Whole collections are captured page by page in this manner and the accumulated information is transferred to video tape. The video tape is then converted into a master video disc (by an outside firm) from which duplicate video discs are pressed. Up to 200,000 documents can be stored on one disc. The documents can be accessed readily because of the self-indexing; the disc, the size of a phonograph record, can be stored easily; and because of the quality of the recording, the original documents seldom have to be handled again.

There are, some aspects of the present system which require further development so that handwritten or original material in very poor condition and microfilm or microfiche copies of such materials also can be digitized and indexed immediately. To accomplish this technological refinement a sum of \$150,000 is being requested for the purchase of new digital cameras, computers and printers and \$50,000 for new software. Once the system is completed, not only will the Museum's current collections be preserved, but they also can be augmented. The new system will be portable, and therefore can be used at other sites. Therefore, NASM could acquire automatically, new or existing collections without excessive handling, costly and potentially damaging shipping, or the need for additional storage space.

Video Disc Program - (\$100,000) - The ongoing video disc program uses an archival method similar to the System for Digital Recovery. Its application is limited to the

transfer to video disc of the 900,000 photographs in the NASM collections. The difference between the two methods is in how the information is captured. In the initial step, the photographs are printed directly on 35mm film instead of digitally stored. Essentially, the process is the same from that point on. The goals of this project are not only to preserve the Museum's photographic collections, but also to make the collections readily available to other museums, libraries, universities, etc. The non-digital video disc format allows for easy access by standard video player systems. This initial step of accumulating the photographs on 35mm film is very labor intensive, which accounts for the relatively long period (18 months) required to provide a non-digital video disc containing 100,000 images. In order to accelerate the transfer of the photographic collection to video discs, \$80,000 is requested for the purchase of additional cameras, and \$20,000 is requested to contract for the services of a camera operator.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including the Museum's share of net proceeds from the shops, restaurant and concession fees, net proceeds resulting from the bureau activities (such as the Theater and Spacearium) and small allotments. In addition to meeting expenses of the Theater and Spacearium, these funds are used to finance fellowships, guest lecturers, symposia and special events for the opening of new exhibits. Portions of the proceeds from the Theater and Spacearium are being reserved for the replacement of the film entitled "Flyers" and for support of other Institutional programs. Outside funding has been received for a new IMAX film taken on the Space Shuttle to be completed in FY 1985. FY 1984 was the premiere of the new multi-image show "200 Years of Flight" in the Spacearium. Continuing support also is provided for distinguished scholars to study at the Museum through the Lindbergh Chair of Aerospace History and the Chair in Space Science History. Other fellowship programs include Guggenheim and Verville, which support pre- or post-doctoral students and other distinguished scholars in aviation and space science.

Restricted Funds - Funds provided here are in the form of restricted endowments which specify the use of the donation or bequest, and of gifts and foundation grants by individuals, organizations or corporations for specific purposes. Examples of these funds are the Ramsey Endowment, used to finance research relating to naval flight history (estimated expenditures of \$25,000 in FY 1985 and \$26,000 in FY 1986), and the Guggenheim Endowment, which is used for lectures and stipends (estimated expenditures of \$13,000 in FY 1985 and \$20,000 in FY 1986).

Federal Grants and Contracts - These are provided by various agencies and departments for special projects which can be conducted at NASM because of its expertise in a given area. Continued funding from the National Aeronautics and Space Administration's grant program supports the following research activities in planetary geology by the Museum's Center for Earth and Planetary Studies: photogeologic investigation, planetary terrain, thermal infrared studies and morphologic studies of the Moon (estimated expenditures of \$68,000 in FY 1985 and in FY 1986). Additional support from NASA continued efforts in mapping and analyzing the origin of surface features on the Moon and Mars (estimated expenditures of \$40,000 in FY 1985 and \$42,000 in FY 1986). A new research project on satellite remote sensing of central Mali was initiated in FY 1984 to determine the long-term effects of climate change on the fragile environment of the inland Niger Delta region. In FY 1985, this research will be expanded to cover fringe areas of the world's deserts, delineating areas prone to soil erosion (estimated expenditures of \$60,000 in FY 1985 and \$41,000 in FY 1986). The Space Telescope Historical Project, a combined effort with the Johns Hopkins University and NASM, also is partially funded by NASA (estimated expenditures of \$30,000 in FY 1985 and \$32,000 in FY 1986).

NATIONAL ZOOLOGICAL PARK

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	319	10,641	1	59	--	212	--	154	1	111
FY 1985 Estimate	319	11,074	1	99	--	119	--	128	1	49
FY 1986 Estimate	324	11,424	1	99	--	108	--	114	1	51

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - In its 1889 charter, the National Zoological Park's mission was defined as "the advancement of science and the instruction and recreation of the people." Today these goals are accomplished through programs that make the National Zoological Park a leading international center for animal exhibition, biological and veterinary research and public education in conservation and the humane care of animals. The Zoo houses its public collection on a 168-acre site at Rock Creek Park in Washington, D.C., and also maintains a major conservation, captive breeding and research center at Front Royal, Virginia, where it manages 3,150 acres. Through its programs in research, conservation, animal health, and education, the Zoo serves the public and specialized audiences in understanding animal adaptations and evolution, and the interaction of wildlife with the environment. For FY 1986, an increase of 5 workyears and \$350,000 is requested: 4 workyears and \$250,000 are needed to provide an adequate level of support for the Zoo's existing facilities, and 1 workyear and \$100,000 are required to begin preliminary planning for an aquatic exhibit.

PROGRAM - The National Zoological Park is responsible for the maintenance and welfare of approximately 2,400 animals comprising 430 species at the Rock Creek site. The species are chosen primarily to be interesting to the public and because they contribute to research and conservation. The collection of animals at the Conservation and Research Center (CRC) at Front Royal are selected for their long-term breeding potential and generally because they are threatened or endangered. More than 350 animals representing 46 species are housed at CRC.

In addition to its traditional animal management practices, the Zoo is playing a major role in developing new techniques for long-term sperm storage and embryo transplantation; these techniques may play a crucial part in future conservation efforts. However, the National Zoo cannot fulfill its conservation objectives by Zoo-based research and activities alone. Many species are endangered because of man-made perturbations in their natural habitats, particularly in the tropics. For this reason, the Zoo has an energetic program of conservation research in the natural habitats of endangered species and is conducting pioneering studies in the reintroduction of animals bred in captivity. The major programs of the National Zoo are grouped as follows: Animal Exhibition, Animal Management, Animal Conservation and Propagation, Research, Public Education and Information.

Animal Exhibition - The ultimate purpose in exhibiting animals is to interest the zoo-going public in animal biology and the role of animals in the environment. To achieve this objective, animals must be provided with as natural an environment as human ingenuity and skill can devise. They also must be provided with the physical conditions necessary for a complete and active life. The recently completed Small Mammal House is an example of this in that it provides esthetically pleasing and attractive settings for a broad range of exciting animals. Breeding successes with animals in this new exhibit attest to their contentment and the Zoo staff's skills in simulating the natural habitat.

In 1984, using construction funds appropriated in FY 1983, planning for the first stage of Olmsted Walk was completed. The entire project will enhance greatly the appearance of the Zoo; it also will increase pedestrian comfort and access to the exhibits. Thousands of trees, shrubs and plants will be added to the Park and several exhibits along the walk will be improved or created. Plans are complete to redevelop the wetlands exhibit at the Rock Creek entrance to produce a habitat that will show the public the wealth of animals to be found in the wetlands of the United States. A new tortoise exhibit will be created and the Zoo will build an innovative gibbon exhibit that will give visitors a multilevel view of these highly gymnastic and engaging primates. The new exhibits will be in harmony with the existing and mature trees of the present Park.

In May 1984, new outdoor exercise furniture for the giant pandas was constructed through a unique volunteer effort by the Friends of the National Zoo (FONZ) with the aid of Zoo staff members. The four-day project, which used some 7,000 hours of volunteer effort, has provided the pandas with furniture that will stimulate their natural behavior and will give them new opportunities for exercise.

Animal Management - The health and well-being of the animals under the Zoo's care is of overriding importance. The continuing efforts to provide animals with natural and congenial conditions in exhibits, contributes increasingly to an excellent overall state of health and absence of stress. Additionally, modern animal health care practices of the very highest standard constantly are available. The National Zoo provides the most advanced techniques in preventive medicine, emergency treatment, surgery, dentistry and neonatal medicine. This is reinforced by a scientifically based nutritional program and the very highest standard of food preparation. Comprehensive medical and general records, the majority of which are automated, are kept on all animals. These records are a major tool in maintaining the Zoo's health standards and in developing breeding programs.

In an average year, around 2,500 medical cases require attention; about 500 of these require hospitalization. Success rates in the treatment of illness remain very high. Construction started in late FY 1984 on a new medical facility at Front Royal. In 1983, more than a third of the medical cases and one-half of the anesthetic procedures were done at the existing facility. The new hospital will provide advanced diagnostic, clinical and surgical support for the Conservation and Research Center.

Breeding successes in 1984 included the production of six water dragons, 21 leopard geckos, and 76 young from four snake species. In addition, the Conservation and Research Center continues to play an important role in research and breeding programs for rare and endangered species. Its facilities provide a unique environment for the establishment of selected breeding programs that can not be matched in a standard zoo setting. The Center has bred successfully such animals as zebras, Bactrian camels, scimitar-horned oryx, Pere David's deer, maned wolves, lesser pandas, binturong, and selected birds, especially cranes. The Zoo also will continue to play an active leadership role in a variety of national cooperative breeding programs including golden lion tamarin, gorilla, orangutan, and tiger.

The National Zoo continues to play a leading role in biological conservation. In 1984, golden lion tamarins were bred in captivity, and were reintroduced to the wild to a protected forest in Brazil. This was the ultimate step in a comprehensive and pioneering program to save this beautiful animal from extinction. All of the problems involved in this program were not apparent initially. It was necessary at first to develop techniques for proper reproduction at Front Royal; these animals then had to be acclimated to the situation in their native land, which was accomplished successfully. Finally, they had to be "educated" to fend for themselves in the wild. This process involved detailed training in recognizing dangers and enemies. The monkeys also had to be taught how to recognize a wide range of naturally occurring edible objects and how to find them. At present these animals are thriving in their native home.

This success in conservation would not have been possible without sophisticated and painstaking research, in the Zoo and in the field. For instance, Zoo researchers had to work out in detail the structure of social and family life of tamarins before they could re-create natural groups of animals that could succeed in the forests of Brazil. None of the information was available to scientists when they started the project. Basic research at the Zoo concentrates on understanding the factors that influence the daily lives of animals. Subjects range from communication behavior to nutrition, and these studies lead to the transmission of results through published reports and contributions to premier scientific congresses. In 1984 the Zoo staff published over 80 scientific articles ranging from reports to books. The publications included a major monograph on the biology and management of Pere David's deer.

The Zoo's genetic studies, in conjunction with those of zoos around the world, will result in the maintenance of viable captive populations of critically endangered species in perpetuity. Automated demographic models and long-term breeding plans are being developed for captive tigers, Asiatic lions, and golden lion tamarins. Efforts to determine pedigrees of several hundred captive endangered Bali mynahs were initiated prior to establishing a reintroduction program for this species in Bali, Indonesia. New biochemical studies resulted in an exciting finding, namely that cheetahs show little genetic variation, a possible partial explanation, for their poor captive breeding record. Other studies of golden lion tamarins and Dorcas gazelles are being conducted to relate genetic variability, as determined from biochemical studies of blood, to presumed genetic variability based on known pedigrees of captive animals. The Zoo's genetic studies are conducted in collaboration with the National Cancer Institute.

An important contribution to conservation is made by training Third World students in wildlife management. In 1984 alone, students from India, Sri Lanka, Ghana, Nigeria, Sierra Leone, Peru, Malaysia and China attended training courses at the Zoo. Training also is given to United States students in veterinary medicine and pathology.

As part of the broad educational programs, the National Zoo reaches a very large audience with signs throughout the park. More personal educational links are provided through programs such as "meet a snake," and "laboratory" groups like HERPlab, BIRDlab, and ZOOLab. More than 10,000 people, largely family groups, visited HERPlab alone. This program received a national educators award in 1983. The National Zoo's educational activities have received attention from as far away as Japan and Australia. The continued success of Symposia for the Public, a series created in 1982, testifies to an interest in serious and detailed biological theory on the part of nonspecialists.

EXPLANATION OF PROGRAM INCREASE:

For FY 1986, an increase of \$350,000 is sought for two purposes. An amount of \$250,000 and 4 workyears are needed critically to alleviate a chronic shortage of support monies and staff. In addition, an amount of \$100,000 and 1 workyear are requested to begin preliminary research and technical planning for a major aquatic exhibit.

Support of Existing Facilities (4 workyears and \$250,000) - Over the last few years the Zoo has responded to emergency situations in world fauna conservation by establishing programs to save endangered species (golden lion tamarins and Bali mynahs, for example). These programs, which included major new construction, have been highly successful but routine maintenance and the levels of keeper staff have not advanced. This situation has to be redressed and the balance restored before vital programs are jeopardized. To reverse the trend, the Zoo requests \$78,000 to hire four animal keepers for the Conservation and Research Center and an additional \$172,000 for support of all Zoo programs.

The four animal keepers are needed to support the programs at Front Royal. As of August 31, 1984, the Center had 758 animals under its care. This, coupled with the newly completed facilities (Small Animal Facility, Hardy Bird Complex, three new barns and 140,000 acres of new hoofed stock pastures), requires additional keeper support personnel. The current keeper force of 15 is not sufficient to utilize fully the new facilities.

The number and complexity of the Zoo's exhibits and facilities have increased due to the modernization program. Coupled with increased costs of labor and materials, the Zoo's base of \$540,000 for maintenance now is inadequate. Deterioration of essential and preventive maintenance will occur unless the present situation is corrected. The additional \$172,000 is needed in support costs to provide for the maintenance of the facilities at Rock Creek and Front Royal. The funds will be used to purchase supplies and materials for routine maintenance programs.

Aquatic Biologist and Related Costs (1 workyear and \$100,000) - The National Zoo is deficient in one major group of animals that is of great interest to a very large number of citizens as well as of major economic importance. These are the aquatic animals. The fishes and other aquatic vertebrates together constitute more than 70 percent of the backboned animals of the world. They are presently not represented in the collection. The development of a major and outstanding aquatic exhibit is a primary goal for the new leadership of the Zoo. To begin developing plans for such an exhibit, the Zoo needs to hire a senior specialist of proven skill in the field of aquatic biology. In addition to the salary for this person (\$60,000), a sum of \$28,000 is needed for technical consultation and travel. The field of aquatic exhibitry is so complex and specialized that contract consultation will best provide the knowledge of complex water chemistry and filtration systems that is necessary.

It is expected that an important research center will develop around the aquatic biology exhibit and the curator will establish an aquatic research laboratory for scholars from the Zoo, the other Smithsonian bureaus, and the national and international scientific community. Additional funds of \$12,000 are requested to establish this laboratory.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are derived primarily from fees for general use of the facilities at the Conservation and Research Center at Front Royal, Virginia, including use of the conference area by authorized visitors. Expenditures are made for the support and maintenance of these facilities; for the purchase of animals for the collection; and for the salary and support costs for the director.

Restricted Funds - These are provided through gifts and foundation grants and are used to support specific research projects and education programs. For example, funds provided from the American Association of Zoo Veterinarians are being used to support research in the areas of artificial insemination (estimated expenditures of \$28,000 in FY 1985 and in FY 1986); and to study viruses in zoo mammals (estimated

expenditures of \$15,000 in FY 1985 and in FY 1986). Funds from the National Geographic Society and the World Wildlife Fund are supporting the golden lion tamarin reintroduction program (estimated expenditures of \$58,000 in FY 1985 and \$54,000 in FY 1986).

Federal Grants and Contracts - These are provided by various government agencies and departments for research being conducted by Zoo staff. A grant from the National Science Foundation is being used to support a research project in Sri Lanka on life history strategies in relation to primate genealogy and environment (estimated expenditures of \$49,000 in FY 1985 and \$51,000 in FY 1986).

OFFICE OF THE ASSISTANT SECRETARY FOR HISTORY AND ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	9	612	1	105	--	8	--	1	--	--
FY 1985 Estimate	9	429	1	100	--	1	--	1	--	--
FY 1986 Estimate	9	429	1	152	--	1	--	28	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Assistant Secretary for History and Art is responsible to the Secretary for the overview and management of the Smithsonian Institution's history and art programs and activities. No program increase is requested for FY 1986.

PROGRAM - I. The Office of Assistant Secretary for History and Art: With a base of 4 workyears and \$208,000 this Office advises and assists the Secretary in overseeing the programs of the Smithsonian history and art bureaus, which include the Archives of American Art (headquartered in Washington, D.C. with regional offices in Boston, Detroit, New York, San Francisco, and Los Angeles); the Cooper-Hewitt Museum in New York City; the Center for Asian Art, consisting of both the Freer Gallery of Art and the Arthur M. Sackler Gallery; the Hirshhorn Museum and Sculpture Garden; the National Museum of African Art; the National Museum of American Art; the National Museum of American History; the National Portrait Gallery; the American Studies Program; and the Anacostia Neighborhood Museum. The Office also coordinates and manages Institution-wide special projects, programs, exhibitions and publications commemorating significant historical events and individuals, including an editorial project to publish the manuscripts of Joseph Henry (1797-1878), the eminent American physicist and first Secretary of the Smithsonian Institution; and administers the Regents Collections Acquisition Program, which was established to facilitate the purchase of major acquisitions by Smithsonian museums.

During FY 1985 and FY 1986, the Office of the Assistant Secretary will continue to provide advice and guidance to history and art bureaus in the development of their programs, specifically in the areas of collections management with emphasis on conservation and appropriate inventory methods. The opening of the Center for Asian Art and moving the National Museum of African Art to its new quarters in the Quadrangle will be of highest priority. Commemoration of significant historical events will continue, with plans underway to commemorate the bicentennial of the signing of the Constitution.

Programs Commemorating Historical Events - In FY 1984, Congress appropriated \$200,000 to the Institution for activities and programs to commemorate the centennial of the birth of President Harry S Truman. From April through December 1984, a number of events were planned, including a 20-minute biographical film on Truman, produced by and shown at the National Museum of American History; a two-day scholarly symposium on domestic and foreign policy during the Truman era, sponsored jointly by the National

Museum of American History and the Woodrow Wilson International Center for Scholars; a series of workshops, films and seminars sponsored by the Smithsonian Resident Associate Program; an "evening dialogue" for scholars, held at the Woodrow Wilson International Center for Scholars; an exhibition on the 1948 Berlin Airlift, at the National Air and Space Museum; and an exhibition examining the political implications of esthetic issues during the Truman presidency at the National Museum of American Art. Similar exhibitions were produced at the Library of Congress and the National Archives.

II. Joseph Henry Papers: With a base of 5 workyears and \$221,000 this documentary project is dedicated to collecting, transcribing, editing, and publishing the manuscripts of Joseph Henry, who was the first Secretary of the Smithsonian Institution. Publication objectives include a fifteen-volume letterpress edition of Henry's correspondence, laboratory notebooks, diaries, and other manuscripts and an indexed microfilm edition of approximately 90,000 items and special publications aimed at more general audiences. The letterpress edition serves two purposes: (1) through the publication of often previously unknown letters and other documents, it is an essential research tool for scholars in the history of science, and in the intellectual and cultural history of the United States; (2) through its extensive annotation and introductory explanatory essays, it provides an interpretive study of Henry and his milieu.

The Office has just concluded the fifth of its letterpress volumes, containing documents that span the years 1841 to 1843, when Henry was Professor of Natural Philosophy at the College of New Jersey (Princeton), and still actively engaged in experimentation on electricity and magnetism, in addition to other topics in the physical sciences. The Office has started the sixth volume, which will include the documentation regarding Henry's call to the Smithsonian in December 1846.

In FY 1985, work will continue on the sixth letterpress volume, comprising the documents from the years 1844-1846. During FY 1986, the sixth volume will be sent to press and work will commence on the seventh volume, documenting Henry's first years at the Smithsonian. Progress also will be made on the microfilm edition. In future years, the Joseph Henry Papers plans to establish the Joseph Henry Institute for the History of the Sciences in American Life which will expand the Henry Papers mission of enlarging our knowledge of the history of the sciences in America. Both the pure and applied sciences would be studied, including technology and medicine, for all periods of American history. Though the natural sciences would be emphasized, the Institute would include the history of the social sciences as well.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided primarily by allotments and are used to pay the salary and expenses of the Assistant Secretary for History and Art, and memberships for the Institution in the American Council of Learned Societies and the American Crafts Council. Special Purpose funds provided editorial assistance for the recently completed Finders' Guide to Decorative Arts in the Smithsonian Institution.

Restricted Funds - In FY 1986, the Joseph Henry Papers Project anticipates support to help defray the cost of the Joseph Henry Institute Symposia on the history of science and technology in the United States (estimated expenditures of \$27,000 in FY 1986).

NATIONAL MUSEUM OF AMERICAN HISTORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
			FTP**	Amount	FTP**	Amount				
FY 1984 Estimate	295	9,856	2	345	1	475	4	526	--	--
FY 1985 Estimate	302	11,055	2	175	--	214	2	1,069	--	--
FY 1986 Estimate	312	11,835	2	138	1	232	--	577	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of American History (NMAH) collects and preserves America's material culture, the artifacts that embody the Nation's heritage. By carefully enlarging and preserving its collections and using them as a basis for exhibitions, educational programs, research, and publications, the Museum offers scholars and the public the opportunity to understand America past and present. In addition to the Mall building, the Museum maintains the exhibition "1876 Centennial," located in the Arts and Industries Building, and supervises the movement and care of objects stored in five buildings at the Institution's Suitland Facility. For FY 1986, an increase of 10 workyears and \$780,000 is requested to undertake a five-year project to clean up the asbestos contamination in the Museum's objects storage buildings at Suitland (6 workyears and \$211,000); establish a comprehensive Native American Program that incorporates their history and culture into the Museum's exhibit, education and scholarly programs (3 workyears and \$104,000); provide needed base support for the escalating cost of computer access, time and storage connected with the Museum's collections management/inventory program (\$100,000); research, design, and produce an exhibition to commemorate the bicentennial of the signing of the United States Constitution (\$265,000); and support the application of automated systems to the Museum's broad range of noncollection management programs (1 workyear and \$100,000).

PROGRAM - The National Museum of American History possesses the largest and most diverse collection of objects representing the heritage of the United States. The Museum's collection--over 16,000,000 objects of every size, type, and material--includes stamps and coins, trains, automobiles, textiles, photographs, paintings, sculpture, paper materials, costumes, tools, power machinery, clocks, weapons, ceramics and glass, musical instruments, and scientific instruments of all kinds. To provide better protection of these artifacts, the Museum strives to integrate and improve all the components of its collections management program: acquisition, conservation, registrarial and inventory control, archival preservation, and secure storage of these objects. The Museum presents the history of the American people through these collections, exhibitions, and the wide range of programs including publications, lectures, symposia, concerts, public tours and demonstrations, and film and broadcast features to over five million visitors per year.

Exhibitions - The Museum opened a number of new exhibitions in FY 1984 which include: "Pain and its Relief," tracing the many ways in which people have historically dealt with pain from ancient rituals to modern anesthetics; "Inventing Standard Time," documenting the development of the system of standard time zones to replace a confusing system of

local times; and "The Naming of America" featuring a world map (circa 1507) that was possibly the first to use "America" as a geographical name. Two traveling exhibitions, developed in conjunction with SITES, were mounted in the Museum during FY 1984: "Southeastern Potteries," containing contemporary examples of traditional pottery methods of the southeastern United States (in cooperation with the Festival of American Folklife); and "Yesterday's Tomorrows: Past Visions of the American Future," examining the history of popular expectations about the future in the late 19th and 20th centuries. Finally, in commemoration of the 20th anniversary of the opening of the NMAH building, "Photo History of the Mall" exhibited photographs taken by Smithsonian photographers of events that have occurred on the Mall over the past 20 years.

The Museum's first major reinstallation of a permanent exhibition will open in March 1985. "After the Revolution--Everyday Life in America" depicts American social and cultural development during the late 18th and early 19th centuries. Using period rooms and objects on loan from many collections, the exhibition demonstrates how ways of life differed among people of various occupations, social situations, and financial means. Other exhibitions are planned in future years to extend this theme through the rest of the 19th and 20th century.

The Museum will move ahead on reinstalling its permanent exhibitions. By FY 1986, "Engines of Change: The Industrial Revolution in America" will have opened. This exhibition deals with the forces behind the transfer of industrial technologies from England to America and examines the subsequent course of the Industrial Revolution in this country.

As an introduction to the major reinstallation of the Museum, four public space projects were completed principally financed with Trust funds. The NMAH Museum Shop and Bookstore, second largest in the United States, opened in March 1984. The "Flag Hall Sound and Light Show," presenting an hourly viewing of the Star-Spangled Banner, also was finished in 1984. Outside the building, the Calder stable was relocated to enhance its orientation to the public, and a 19th-century bandstand has been erected on the west lawn to provide an appropriate setting for live performances.

During FY 1985, the research and design phases will begin for an exhibition commemorating the bicentennial of the signing of the United States Constitution: "The Constitution as a Living Document." Other exhibitions planned include: "Graphic Arts: 100 Years," a retrospective exhibition about the collections of the Museum's Division of Graphic Arts; "Domestic Interiors in Eighteenth-Century America," depicting the significant changes in the ways Americans furnished their homes during the 1700s; and "Bridges of Niagara," a loaned exhibit from Canada presenting the history of the nearly 20 bridges that have been built since 1848 at Niagara Falls.

Collections Management - In FY 1983, the Museum completed its shelf inventory of collections and is maintaining this record successfully as new objects are received. Computer printouts for verifying the accuracy of information gathered during the shelf survey were provided to each division in FY 1984 in preparation for the refinement and reconciliation phases of the inventory program. The Museum plans to upgrade and expand its minicomputer system to support the efficient storage, retrieval, correction and updating of the collections data in automated data base files. It is anticipated that the refinement of inventory records of several of the Museum's curatorial divisions will be completed by the end of FY 1986. The process of photographic documentation of selected high-value collections of the Museum, such as stamps and coins, also should be finished in FY 1986.

In FY 1984, extensive collections surveys were conducted and pilot projects in the conservation and storage requirements of the Museum's archival and photographic materials were completed. NMAH's Division of Conservation examined or treated over 1,400 objects

during FY 1984. To provide the proper storage conditions necessary for collections requiring a controlled environment, such as costumes, the Museum created a cold storage facility. The Museum also continued its program to upgrade storage facilities for its other collections by the purchase of new storage equipment. The security of the collections also was improved by placing alarms on exhibit cases containing high-value or sensitive material and installing a card reader system to be used in high security areas.

The NMAH Archives Center recently finished a first draft of a guide to the Clark Collection of Radio History materials, one of the Center's largest and most complex collections, and an informal guide to photographic collections throughout the Museum. The Center continues to process and organize new collections of manuscripts from curatorial divisions preparing them for use by researchers.

Suitland Facilities and the Museum Support Center - In addition to reference collections at the Mall building, the collections of the Museum are stored currently in five buildings at the Institution's Suitland Facility. Since 1980, a program for encapsulating exposed ceiling asbestos in each of these buildings has been under way. In addition, the fire protection and HVAC systems in the buildings are being updated.

In FY 1986, the initial move of some of the Museum's collections to the Museum Support Center (MSC) is scheduled to begin. In preparation for this move, NMAH's conservation laboratory at the MSC began operations during the summer of 1983. In addition to conservation treatment, preparatory work for the move to the MSC will include final determination of collections and objects to be stored at the MSC; recording of inventory and registrarial information for these objects; and the examination, packing, transfer, unpacking and storage of these objects.

Research - As the result of research conducted by NMAH curatorial staff, the following books were published in FY 1984: Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures Since 1880; Forces of Production; Carl Friedrich Gauss: A Bibliography; Analytical Bibliography of Native American Science, Medicine, and Technology; Understanding Relativity; and A Bibliography of Chemical Technology.

The Museum continues to provide support staff and space for the scholarly publication "Technology and Culture," the official journal of the Society for the History of Technology. In addition, during FY 1984, the Museum helped sponsor the development of a magazine examining black American history. The Museum's Afro-American Communities Project continues to develop a data base of social and economic information dealing with the structure and development of free black communities in ten United States cities prior to the Civil War.

Collections Acquisition - The Museum received through purchase or gift a number of significant collections. Some of the acquisitions include: a Model A Steurator, 1952-1953, the earliest experimental device for controlled release of nuclear energy by means of the fusion of hydrogen nuclei; a 15-by-8-foot photograph of the Alton Limited Train, circa 1901, taken by George Lawrence and considered at the time to be the world's largest photograph; a rare and important set of six fanback Windsor side chairs, circa 1765, in original, untouched condition (to be used in the "After the Revolution--Everyday Life in America" exhibition); a surveyor's transit, a standard instrument of the 1860s used to lay out railroads and other engineering projects; a 1941 RS-1 diesel locomotive, the first model of a road switcher used for moving trains; and a Whitworth lathe, built in England about 1870, which embodies some of the features of industrial technology important to the success of mechanical engineering in America and Great Britain.

Public Programs - To fulfill its special role within the Smithsonian to enrich the public's understanding of American history, the Museum has reorganized its public service

functions into a Department of Public Programs. Concentrating on the interpretation of American history through publications, tours and demonstrations, lectures, special events, recitals, and performances, the Department will develop programs to orient, inform, and educate the public and to reach diverse audiences both locally and throughout the country. More than 10,000 Washington metropolitan area residents and organizations receive the Department's new "Events Calendar," which describes the many concerts, films, tours, and demonstrations that are sponsored by the Museum.

The Program in Black American Culture continued to present concerts, colloquia, workshops, and broadcast features, reflecting the contributions and cultural heritage of black Americans. An eight-part video series, "Voices of the Civil Rights Movement" (based on a conference and exhibit at NMAH in 1981), was broadcast on public television.

During FY 1985 and FY 1986, the Department of Public Programs will continue to bring American history to life by presenting the richness and importance of the Museum's collections to the public. Future programs will include "Museum Masterpieces," a series of 23 musical performances featuring resident musicians playing instruments from the collections, and the "Palm Court Series," educational presentations involving performances and multimedia presentations on early 20th-century social history.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 10 workyears and \$780,000 is requested to undertake a five-year project to clean up the asbestos contamination in the Museum's objects storage buildings at Suitland, Maryland (6 workyears and \$211,000); research, design, and produce an exhibition to commemorate the bicentennial of the signing of the United States Constitution (\$265,000); provide needed base support for the escalating cost of computer access, time and storage connected with the collections management/inventory program (\$100,000); establish a comprehensive Native American Program that incorporates their history and culture into the Museum's exhibit, education and scholarly program (3 workyears and \$104,000); and support the application of automated systems to the Museum's broad range of noncollections management related programs (1 workyear and \$100,000).

Asbestos Clean-Up at Suitland (6 workyears and \$211,000) - In the spring of 1983, the Office of Protection Services conducted sophisticated tests which indicated that asbestos had contaminated the Museum's collections stored in the five storage buildings at Suitland, posing a threat whenever collections were moved or sent out on loan, as well as causing recontamination of the three buildings which had been renovated to encapsulate asbestos.

Because of the contamination of these collections and buildings, NMAH could not complete the inventory of its collections at Suitland; incorporate objects stored there into its exhibitions on The Mall; loan these objects to other museums; move collections displaced by the exhibit reinstallation program from The Mall to the Suitland buildings; upgrade the protection of important collections at Suitland; or free space on The Mall for the staging areas needed for new exhibits and for the move to the Museum Support Center.

To clean all the collections and rid the buildings of asbestos will cost \$1,067,000 and take five years to complete. The requested increase of \$211,000 would provide the necessary funding to begin the project. An Asbestos Cleaning Team of six people would be hired to form the special workforce required to clean the objects in the buildings (6 workyears and \$84,000). Other costs would include the purchase of disposable safety clothing (\$80,000), asbestos testing (\$30,000), contaminated waste removal (\$15,000), and necessary supplies (\$2,000). The Museum has a well conceived, thoroughly developed plan for removing asbestos from the objects. With a "clean" building already provided, the positions and dollars would be used to construct a "clean" room and begin processing

contaminated objects through it. As each building's objects were cleaned and removed the building itself would be cleaned. This process would continue until all buildings and objects were decontaminated.

Constitution Bicentennial (\$265,000) - The Museum plans to dedicate a major section of the Armed Forces exhibit to the Celebration of the 200th Anniversary of the Constitution in 1987. The Constitution and its history would be examined as a living and unfolding document rather than a static one. To illustrate this, the exhibit will focus on the history of the 442nd regimental combat team (comprised of Japanese American soldiers) during World War II. The story of this unit, the most decorated combat team of the war who suffered heavy losses and whose loyalty to America was unquestioned, would be compared to the experiences of American civilians of Japanese heritage who suffered through internment camps, loss of property and many other indignities.

Some of the material for the exhibit would come from an existing exhibition on display in California. More material would be added accompanied by an extensive audio-visual program. Also, there are plans for holding a symposium, attended by historians, political scientists and members of the legal profession, that would focus on the issue of civil rights and the Constitution. It is anticipated that the proceedings of the symposium would be published.

While the Museum's reinstatement budget provides funds for installing the military history exhibit, the costs associated with research and production for the 442nd, especially the audio-visual portion, will require additional support as well as a scholarly program on the theme "The Constitution as a Living Document." In FY 1985, the Museum will begin the research and planning phases of the exhibit. An amount of \$265,000 is needed in FY 1986 to cover approximately 60 percent of the construction and installation cost of the exhibit and related symposium and publication expenses. In FY 1987, a continuation of this funding would enable the completion of the exhibit's installation and cover the remaining symposium and publications costs.

Automation of Collection Inventory Records (\$100,000) - The Museum has made tremendous progress towards completing the physical inventory of its collections by automating the collections management inventory program. This work has enabled the Museum to exercise better control over its collections, but it also has reemphasized the need for further collections management/inventory efforts to support the long-term requirements of effective inventory control, especially in the areas of refinement and reconciliation of these collection inventory records.

Refinement of inventory records requires further work on collections that were initially inventoried on a group or batch basis or the inclusion of additional information in existing inventory records to make these records more useful. During the last quarter of FY 1984, the Museum will begin planning for this refinement process. During FY 1985, refinement of the National Numismatic Collection and the National Philatelic Collection records as well as those of all other collections will begin and, depending on available funding, be completed within the next several years.

Since 1979 when the inventory project began, this Museum as well as many others, saw an increase in the level of demand for the services of the Office of Information Resource Management (OIRM). OIRM supports NMAH's collection-related data base by providing hardware access, time and storage on the Institution's mainframe computer as well as programming services. The cost for these services soon began to rise dramatically from \$27,000 in FY 1984 to an estimated \$70,000 in FY 1985. In FY 1986, such costs will continue to escalate as a result of additional use of this system for continuing data entry and expanded use of the collections data base as the Museum maintains, refines, and reconciles its inventory; and the need for more sophisticated programming tools. Programming will move beyond modification of existing programs to the application of new

software as part of the Institutional Collection Information System (CIS) implementation. The Museum seeks \$100,000 in FY 1986 to assist in meeting this expanding obligation.

Native American Program (3 workyears and \$104,000) - In FY 1984, the Museum of American History began to develop a much needed Native American Program. The Native American experience has been inadequately addressed in previous exhibits and popular and scholarly educational productions. Stereotypes dominate public understanding, and much of the actual history of Native American relationships with immigrant and majority societies remains unexplained.

Preliminary Native American research commenced in FY 1984. The needs of Native American communities were defined and during FY 1985 incorporated into new programs and exhibits. For FY 1986, funding is requested to implement what has become a comprehensive program of public programs and outreach activities. The primary elements include exhibition, educational, scholarly and product materials development; lectures, symposia, workshops, demonstrations and performances; and service to Indian tribes and Indian cultural and educational institutions. Onsite museum training and fellowship and intern support, in cooperation with existing programs for training and education, will be sponsored in the areas of the Museum's special expertise, including historical archives, material culture studies, and historical research. Moreover, assistance to tribal museums, tribal colleges, tribal and nonreservation cultural and educational programs--perhaps the most important element of this program--will focus on both American Indian history and commerce, science, technology and material culture.

This proposed program has been developed in conjunction with other Smithsonian bureaus that are concerned with American Indian cultures: the National Museum of Natural History/Museum of Man, the Office of Museum Programs, the Office of Folklife Programs, and the Office of Fellowships and Grants. These bureaus, including NMAH, have established the Ad Hoc American Indian Planning Group to avoid duplication of effort and to increase cooperation for maximum impact.

The requested increase would permit the hiring of an American Indian historian, a scholar-manager and a secretary (3 workyears and \$90,000) and provide support for the various components of the program (\$14,000).

Computer Systems Application (1 workyear and \$100,000) - Since the Museum began its Collections Management Inventory project, a minicomputer has been used primarily for recording the shelf survey data that had been collected. In FY 1985, the Museum will hire a data base administrator to oversee the computer operations and to help develop systems for further refining the data so that it could be reconciled with existing curatorial and registration records. With the Museum's collections management related automated needs secured, the Museum's Office of Computer Services is directing its attention to the many noncollection management needs. Developing visitor information systems, financial management programs, programs for tracking projects, and other office automation packages will further the usefulness of the Museum's computer system. This effort will require a position for a computer specialist (1 workyear and \$25,000) versed in these types of systems. This individual will contribute to what is still a small staff of specialists assigned a very complex program.

In addition, hardware and software will be required to handle the volume of information as well as number of users. A sum of \$75,000 is needed for this purpose.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including the Museum's share of sales in the museum shop and book store, cafeteria and royalties. In FY 1985, allotments will support the salary and benefits costs of the Museum director and the director's special assistant, the care of the furniture collection and the cost of cataloguing and otherwise making accessible for research the Sultner Photographic Collection. A \$136,000 allotment in FY 1984 supported the Visions Foundation, Inc., which currently is developing a magazine examining black American history. Trust funds also support special events and weekend musical events.

Restricted Funds - Individual or corporate gifts and foundation grants are the principal sources of income under these funds. In FY 1984, a number of exhibitions and special projects received support. Of particular note are: The Morris and Gwendolyn Cafritz Foundation awarded the Museum a \$165,000 construction grant to relocate the Alexander Calder stabile from the west side of the Museum to the corner of 14th Street and Constitution Avenue and to put in its place an 1878 bandstand from Jacksonville, Illinois; and the purchase of a set of six rare and important Windsor side chairs, circa 1765, in original condition to be used in the "After the Revolution--Everyday Life in America" exhibition. In FY 1985 and FY 1986, the Museum will have programs entitled "Musical Masterpieces," a series of 23 musical performances featuring resident musicians playing instruments from the collections (estimated expenditures of \$185,000 in FY 1985 and \$208,000 in FY 1986), and "Palm Court Series," educational presentations involving performances and multimedia depictions of early 20th-century social history (estimated expenditures of \$104,000 in FY 1985 and \$133,000 in FY 1986). The Museum also will seek funds in FY 1985 to revitalize the "Ceremonial Court" near the First Ladies Hall (estimated expenditures of \$312,000).

NATIONAL MUSEUM OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	117	4,441	--	46	3	89	--	268	--	--
FY 1985 Estimate	118	4,648	--	57	3	146	--	213	--	--
FY 1986 Estimate	120	4,948	--	45	3	174	--	337	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Established in 1829, the National Museum of American Art (NMAA), the country's oldest national art collection, is devoted to the acquisition, preservation, study, and exhibition of American painting, sculpture, graphic art and crafts. The Renwick Gallery, established in a separate building in 1972 under the purview of NMAA, displays American crafts, decorative arts and design as well as exhibitions from abroad. Also, the Barney Studio House, with a part-time curator paid from an endowment, is maintained by NMAA as a period home open for tours and for special interpretative programs. For FY 1986, an increase of 2 workyears and \$300,000 is requested to undertake integrated automation of NMAA's key office operations, including the Renwick Gallery, and to provide for future communication capabilities with the Smithsonian network of collection, bibliographic and financial information systems.

PROGRAM - NMAA's collection represents American art from its beginnings to the present and serves as the basis for active programs of research, exhibition and public education. The recently completed inventory confirmed that there were 30,418 objects in NMAA's permanent collection as of June 30, 1983, a number which continues to grow at a rate of approximately 1,000 new works each year. A portion of the permanent collection is on view to the public on a rotating basis in the Museum's galleries. The balance is in storage, available for scholarly research, or on loan to selected museums and university galleries throughout the country. Preservation and restoration of irreplaceable American art works are also important features of the Museum's mission. Scholarly research performed by the professional staff results in publications, exhibitions and educational programs which further the understanding of American art and artists throughout the country.

NMAA's reference materials are used by both lay and scholarly researchers from a wide variety of disciplines. Unique among these resources are three art indices: the Inventory of American Paintings Executed Before 1914; the Smithsonian Art Index, which lists art works currently housed in the Institution's nonart museums; and the Index of Pre-1877 American Art Exhibition Catalogues, which documents artistic activities in early regional centers of this country and Canada. Taken together, these indices comprise more than 560,000 computer entries, which constitute the most complete data base on the subject of American art in existence.

Collections - During FY 1983 and FY 1984, the permanent collection has been augmented by acquisitions in previously unrepresented areas and strengthened in areas for which NMAA is noted. The Museum was pleased to accept the transfer of over 1,700 contemporary photographs from the National Endowment for the Arts (NEA). These photographs provide the nucleus of NMAA's new photography collection and include works by most major living American photographers. This collection is being expanded through gifts and purchases. Recent acquisitions include photographs by such noted artists as Jerry Uelsmann, Helen Levitt and Harry Callahan.

Notable recent additions to the Museum's collection of paintings have included "The Subsiding of the Waters of the Deluge," by Thomas Cole; a fine early portrait by Thomas Sully of David La Motte; 17 objects--including prints, paintings and sculptures--from the estate of the Surrealist master Man Ray; a watercolor, "Babe La Tour," by Stuart Davis; and the 1851 painting "Miners in the Sierra" by Charles Nahl and August Wenderoth. NMAA's collection of Afro-American art has been strengthened by the transfer of over 200 works from the National Museum of African Art. Several major works by American artists in the crafts media were also added to the collection, most notably "Rocking Pot," a pivotal stoneware sculpture by Peter Voukos.

In FY 1985 and FY 1986, particular attention will be placed on strengthening the photography collection. With the nucleus of a fine collection provided by NEA, the Museum is in a position to build a significant holding worthy of national recognition. The Museum also will continue to seek paintings, sculptures, graphics and crafts which will fill major gaps and will broaden the existing collection.

The preservation, management and security of the collections remain intrinsic parts of the Museum's overall collection program. During FY 1983 and FY 1984, over 700 objects received conservation treatment. Conservation will continue to be an area of particular concern.

Research - During FY 1983 and FY 1984, scholarly research by the professional staff resulted in 23 publications, 27 exhibitions and numerous educational programs. Significant publications which accompanied temporary exhibitions include: "Jose de Creeft: Sculpture and Drawings"; "Provincetown Painters: A Woodcut Tradition"; "The Capital Image: Painters in Washington, 1800-1915"; and "Exposed and Developed: Photography Sponsored by the National Endowment for the Arts." Another publication, the "Descriptive Catalogue of Painting and Sculpture in the National Museum of American Art," lists approximately 5,500 works in the Museum's permanent collection documenting artists, titles, subjects and other information of use to scholars, curators, students, collectors, and the general public.

NMAA also has recorded achievements in fulfilling its role as a research center for the study of American visual arts. The Museum has added over 10,000 slides and over 10,000 prints to its slide and photographic archives. Preservation of the Museum's collection of nitrate negatives taken by Peter A. Juley, the noted photographer of works by American artists, is proceeding. Over 16,000 negatives were converted to stable film in FY 1983 and FY 1984. The Inventory of American Paintings Executed Before 1914 continues to serve more researchers than any other automated resource, with over 1,100 queries annually; roughly 16,000 entries were added to the Inventory data base during FY 1983 and FY 1984.

In FY 1986, NMAA plans to undertake a national inventory of American sculpture which will index on computer all sculpture produced by an American or in America through 1950. At the same time data is collected to locate sculpture, the necessary information also will be gathered to extend the Inventory of American Paintings to 1950.

Exhibitions - In its exhibition program, NMAA emphasizes re-examination of works by American artists, both familiar and neglected, and regional aspects of American art. The

Renwick Gallery provides opportunities for exhibition of works by American craftsmen and for the presentation of new concepts, approaches and techniques in the crafts media. Approximately 20 temporary exhibitions--not including rearrangements within the permanent collection galleries--open at NMAA and the Renwick each year. With each major exhibition organized by NMAA, a substantial catalogue or publication is produced. When the exhibitions are of important national or regional interest, they are offered on tour to other museums. During FY 1984, the Museum circulated four such exhibitions to ten museums in the United States.

Also during FY 1984, NMAA completed its single most ambitious exhibition project ever undertaken, the first comprehensive reinstallation and refurbishment of galleries since the Museum's move to the Old Patent Office Building in 1968. The exponential growth of the collection since 1968 and the focus on American Art, as reflected in the Museum's present name, necessitated a reinstallation of those galleries ill-suited to the display of the permanent collection and those galleries displaying European Old Masters and other non-American works. The reinstallation of NMAA galleries has resulted in a chronological and coherent arrangement of the collection, enabling visitors to easily find works of particular interest and to grasp the full development of American Art. The reinstallation also will enable a larger number of works from the permanent collection to be on public view.

Temporary exhibitions drawn from the permanent collection also have become an important aspect of NMAA's program. Emphasis on temporary exhibitions will shift in future years from numerous, constantly changing, small exhibitions to fewer, high quality major exhibitions which examine the work of individual American artists such as Man Ray, or explore thematic topics such as the art of Taos and Santa Fe. Use of the permanent collection will continue to be of fundamental importance in planning temporary exhibitions.

Interpretive Programs - The Museum presents scholarly programs coincident with current exhibitions, such as the day-long symposium "Wonderland: Joseph Cornell's Adventures in the Arts, Humanities and Sciences," as well as a diversity of educational activities such as lectures, plays, films and concerts which complement exhibitions and enrich the learning experience of the Museum's visitors. Other activities, such as the annual program of "Evenings at Barney Studio House," provide opportunities for interested people to gain insight into other aspects of Washington's early cultural life. During FY 1985, the Museum plans to present a national program in conjunction with Black History Month. The program will emphasize the visual arts, and also will include dance, music, theater, film and literature.

In addition to providing a broad spectrum of educational programs for the scholarly community and the general public, NMAA has assumed a national, as well as local, role in the fostering of art education. In January 1984, NMAA published a study guide based on ten works selected from the permanent collection that will be used by teachers and students in 400 high schools throughout the country. NMAA also has been a leader in the presentation of art related programs commemorating Black History Month. In addition to the thematic educational programs presented each year, the Museum has been awarded a MacArthur Foundation Grant of \$25,000 to complete research and development for a national program which presents Afro-American contributions to the country's cultural heritage.

Automation - In FY 1985, NMAA will begin the process of creating standardized entries for bibliographic information such as artist's names, subject headings and titles of works of art in the Museum's separate art data bases. This work ultimately will allow researchers and the public to retrieve information on-line from computer terminals within the Institution, as well as from remote terminals located across the country in museums, universities and libraries.

EXPLANATION OF PROGRAM INCREASE:

Automation (2 workyears and \$300,000) - For FY 1986, 2 workyears and \$300,000 is requested to undertake integrated automation of NMAA's key office operations, including the Renwick Gallery, and to provide for future communication capabilities with the Smithsonian network of collection, bibliographic and financial information systems.

NMAA implemented a first stage of automation in March 1983, by the purchase with base resources of a small computer system which can support only eight peripheral devices (four workstations and four printers). Over 50 users, representing every office of the Museum, currently share these workstations. Many of NMAA's applications have undergone conversion to automation, including facets of loan registration, accession procedures, exhibition production, manuscript preparation, data entry for art research computer projects into central Smithsonian data bases, and responses to public inquiries. The Museum staff's rapidly growing demand for automating other applications--a demand accelerated by the success of the present system and the increasing sophistication of its users--already far exceeds the resources of this small system in terms of devices. Numerous applications that should be automated cannot be implemented because of the unavailability of workstations. The use of an automated system will improve the Museum's effectiveness in collections management, research, exhibitions, publications, security and general administration. The purchase of computer hardware also will enable the Museum to begin the conversion of art data bases to an on-line system, thereby making these valuable resources easily and widely accessible to public and scholarly communities. In order to continue conversion of applications, and to integrate fully automation into the daily operations of the Museum, workstations and printers must be more readily available.

The requested increase would permit the acquisition of office automation equipment (25 workstations, 14 printers, and telecommunications hardware/software) to provide support for most of NMAA's key museum operations in FY 1986, with one workstation for every five people (\$257,000). The increase of one system administrator and one assistant to maintain the system is also requested (\$43,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from many different sources, including the Museum's share of sales in the restaurant and museum shop; allotments for special purposes; royalties from publications; sales of slides and photographs; honoraria received by staff while on official duty; participation fees from museums to which NMAA exhibitions are lent; and tuition reimbursement from universities for NMAA interns. Funds are used for the support of publications, exhibitions and public programs; curatorial research and travel; stipends for summer interns; purchase of photographic supplies; travel costs for meetings of the NMAA Commission; repairs to Barney Studio House; and special events for the opening of new exhibitions. Starting in FY 1984, through an agreement with the J. Paul Getty Center for the History of Art and the Humanities, Special Purpose funds will be used to continue the preservation project of the Juley Collection until its anticipated completion in FY 1989 (estimated expenditures of \$70,000 in FY 1985 and \$76,000 in FY 1986).

Restricted Funds - These are contributed for specific purposes in the form of gifts and grants from individuals, foundations or corporations. Funds are available to support curatorial and programmatic activities of the Barney Studio House (expenditures of approximately \$35,000 annually). From the Robert Tyler Davis bequest, prints and drawings will continue to be purchased for the permanent collection (estimated expenditures of \$10,000 in FY 1985 and in FY 1986). Other significant uses of restricted grants and gifts are for the support of publications--such as The Graphic Art of Mary Cassatt and Sculpture and the Federal Triangle--and for the support of programs, videotapes and other activities of specific exhibitions, including "The Capital Image:

Painters in Washington, 1800-1915"; "Sawtooths and Other Ranges of Imagination: Contemporary Art from Idaho"; and "Woodworks: Constructions by Robert Indiana." In FY 1985, funds will be used to refurbish the Doris M. Magowan Portrait Miniature Gallery (estimated expenditure of \$52,000) and for portrait miniature acquisitions (estimated expenditures of \$13,000).

NATIONAL PORTRAIT GALLERY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount					
FY 1984 Estimate	82	3,221	--	64	3	115	--	800	--	--
FY 1985 Estimate	82	3,367	--	18	1	96	--	239	--	--
FY 1986 Estimate	83	3,472	--	19	--	57	--	117	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Portrait Gallery (NPG) was established by Act of Congress in 1962 (20 U.S.C. 75b) as a museum for the exhibition and study of portraits 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. For FY 1986, an increase of 1 workyear and \$105,000 is requested for computer terminals (\$75,000) and a staff specialist to determine office automation requirements (\$30,000).

PROGRAM - The arts of portraiture and biography are the means through which the Gallery offers a continuing exploration of the American people's heritage and accomplishments. The Gallery, opened in 1968, collects, studies, preserves, and exhibits portraits in all media as both historical and artistic documents.

The growth of such a collection imposes continuing responsibilities for thorough research and careful conservation of the objects acquired. Research results are published by curators and historians in articles, monographs and exhibition catalogues. The collections are exhibited continuously in a series of galleries arranged both chronologically and thematically, and are cared for by professional conservators on the Gallery's staff. The Gallery also organizes a schedule of popular and scholarly temporary exhibitions on a wide variety of subjects. Each is accompanied by an illustrated catalogue and usually incorporates materials borrowed from museums throughout the country and abroad.

Collections - In FY 1984, the Gallery was fortunate to purchase approximately 100 works of paintings, sculpture, drawings, photography and printmaking, and to acquire more than 200 works by donation. Among the major purchases were a portrait of American artist Mary Cassatt by Edgar Degas; a rare portrait of the poet Joel Barlow by Robert Fulton, who like Samuel F. B. Morse, was an artist as well as inventor and scientist; a painting of the noted critic, Sadakichi Hartmann, by the Michigan artist, John S. Coppin; a rare 1860 lithograph of Abraham Lincoln by Joseph E. Baker; a photograph of the American Publisher James Thomas Fields by the noted British photographer Julia Margaret Cameron; and photographs of Sherwood Anderson, George Washington Carver, W. C. Handy, and Frances Benjamin Johnson.

Gifts to the Portrait Gallery included portraits of the inventor and businessman, King C. Gillette; naturalist William T. Hornaday; civil rights activist Rosa Parks; economists Thornstein Veblen and Milton Friedman; and a substantial group of caricatures by Aline Fruhauf of noted Americans in the fields of music, the arts, and fashion.

Exhibitions - The Gallery's exhibition program continues to expand in scope and to attract new audiences. The following is a sampling of exhibitions held in FY 1984.

All the surviving work of Robert Cornelius, America's first portrait photographer, was assembled in an exhibition that opened in October 1983. New ground was broken in the history of photography since this exhibition provided the occasion to submit many of these very early daguerreotypes (dating from 1840-1843) for metallurgical analysis. The results of this study have been published in a catalogue of the exhibition, along with extended essays on the beginnings of portrait photography in America and on Cornelius' career.

In November 1983, the National Portrait Gallery presented "Masterpieces from Versailles: Three Centuries of French Portraiture," a special loan of treasures from France's national portrait collection that provided an opportunity for Americans to see for the first time major examples from the reign of Louis XIII (1610-1643) to the final years of the monarchy under Napoleon III (1851-1871). The group of paintings generously made available to the National Portrait Gallery consisted of portraits originally commissioned for the Royal Collections and from more recent additions to the French patrimony.

Two exhibitions opened simultaneously at the Gallery in February 1984. The first was "Artists by Themselves: Artist's Portraits from the National Academy of Design," a pictorial "Who's Who in American Art," which brought together 72 portraits from the National Academy of Design's collection of more than 1,300 artists' portraits. Appropriately, NPG was the first stop for this traveling exhibition. The other exhibition that opened in February was "Arnold Genthe: The Celebrity Portraits," created by the Library of Congress from its Genthe Collection. Arnold Genthe, a turn-of-the-century photographer, gained an enviable reputation as a photographer of celebrities. The exhibition contained 50 photographs of famous personalities, among them Tallullah Bankhead, Pearl Buck, John D. Rockefeller, Greta Garbo, Somerset Maugham, Sonja Henie and Frank Lloyd Wright.

In commemoration of the 200th anniversary of the beginning of trade between America and China, "'Adventurous Pursuits': Americans and the China Trade, 1784-1844," opened in March 1984. Through portraits of the entrepreneurs, missionaries, diplomats, and their Chinese counterparts, and through associated memorabilia, the exhibition examines the first epoch in Sino-American relations. The exhibition is accompanied by a comprehensive, illustrated catalogue.

A retrospective exhibition "Erastus Salisbury Field, 1805-1900," the first comprehensive exhibition of this American Folk artist and student of Samuel F. B. Morse, opened in June 1984 as the first joint exhibition ever held at the National Portrait Gallery and the National Museum of American Art. Field is known especially for his portraits of sitters from the Connecticut Valley, his genre paintings and paintings of historical events. The National Portrait Gallery exhibition contains 73 of Field's portraits painted from 1825 to the 1850s when Field turned to painting large, often allegorical, pieces on historical and religious themes; many of these history paintings are displayed in the National Museum of American Art exhibition.

Exhibitions being planned for FY 1985 include shows on the artists Miguel Covarrubias, James Earl, Chester Harding, and William Edward West, as well as exhibitions on Indian peace medals, and a commemorative exhibition on Ulysses S. Grant. Planned for

FY 1986 are shows on the artists John Frazee and Gaston Lachaise and an exhibition on American radio and television. As usual, major publications will accompany these exhibitions.

Publications - In addition to the Gallery's heavy publications program associated with its exhibition schedule, the National Portrait Gallery has published two major scholarly works in FY 1984: (1) American Portrait Prints, the proceedings of the Tenth Annual American Print Conference held at NPG; and (2) the first volume of the seven- or eight-volume letterpress edition of The Selected Papers of Charles Willson Peale and His Family.

Copy-editing is under way on a definitive catalogue of The Portrait Engravings of C.B.J.F. de Saint-Memin. Also in preparation is the manuscript for the next edition of the Gallery's Illustrated Checklist, an invaluable reference guide to the permanent collections. The Gallery now produces four handsome calendars of events per year, to announce its activities to the community and the Nation.

Education - The National Portrait Gallery's public education program continues to combine an active schedule of docent-led tours seven-days-a-week, an intensive program of education aide training in cooperation with local universities, and an active outreach program which brings the drama of American history--in compelling productions of such themes as the trial of John Brown--to school groups, senior citizens, and the disabled.

The Education Department also has continued to provide its highly popular "Portraits in Motion" (biographical dramatic presentations) both in numerous free performances and through the recent establishment of a very well subscribed series of "Portraits in Motion Showcases" in cooperation with the Smithsonian Resident Associate Program.

The Gallery also has revitalized its "Living Self-Portrait" series in which notable and venerable Americans of achievement bring to invited audiences the recollections of their productive lives. These occasions are videotaped for archival and programmatic purposes. A pilot program of the "Evening with George Abbott," produced with Smithsonian Outreach funds, was completed for consideration by public television.

Research - In FY 1984, the library, shared by the National Museum of American Art and the National Portrait Gallery, launched its automation program. In order to improve its reference service, it can now provide access to two national bibliographic electronic data bases, as well as to an information retrieval service. As the Smithsonian Libraries develops its own automated bibliographic system, the shared library will need to expand its data processing so acquisitions and cataloging are compatible with the Smithsonian Libraries.

The National Portrait Gallery continues to add listings to the Catalog of American Portraits, a large and growing source of information on portraiture for scholars of American history, art history and biography. Field researchers in FY 1984 examined collections in Texas, Oklahoma and New Mexico, and the project yielded approximately 2,083 records from 21 institutions and 43 private collections to be integrated with the existing data base of more than 35,800 records. Computer-generated printouts of collections already canvassed have been placed with over 250 individual institutions. States yet to be surveyed include Washington, Oregon, Idaho, Nevada, Montana, Utah, Wyoming, Colorado, Kansas, North Dakota, South Dakota, Nebraska, Alaska, Hawaii, Missouri and Arkansas. When completed, the Catalog of American Portraits should contain more than 100,000 entries.

EXPLANATION OF PROGRAM INCREASE - Automation (1 workyear and \$105,000) - For FY 1986, an increase of 1 workyear and \$105,000 is requested for ten computer terminals and computer user fees (\$75,000) and for a staff specialist to determine the requirements of office automation (\$30,000).

Currently, the Museum uses two word processing terminals for manuscript work associated with the Charles Willson Peale Papers Project. By adding stand-alone and on-line computer terminals in FY 1986, the registrars and curators will be able to access the most up-to-date collections information rapidly; keep the inventory files and their location current; and better manage the vast files of the Catalog of American Portraits. Several terminals, to be purchased in FY 1986 for use by the Departments of Education and History, and the Publication Office, will allow these offices access to the most accurate and current data about the holdings that could be used in publications and wall labels.

In addition to equipment, a staff specialist also is needed who will help determine requirements for office automation; select the system or systems that would best meet these requirements; maintain liaison with other Smithsonian offices involved in data processing; and provide ongoing staff support in this field. One workyear and support funds are sought for an automation/computer specialist.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from several sources including: the Gallery's share of sales in the restaurant and museum shop; sales of photographic reproductions of portraits in the collection; staff honoraria; and participation fees from museums to which NPG exhibitions are loaned. These funds are used to 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 for research expenses of staff who are preparing special publications or lectures. Funds provided by allotment also will be used to provide partial support for the Catalog of American Portraits' nationwide survey program.

Restricted Funds - These funds are provided for specific purposes in the form of gifts and grants from individuals, foundations, organizations or corporations. The Catalog of American Portraits is currently in the sixth year of a seven-year nationwide survey of American portraits. A grant of funds (\$325,000) from the Andrew W. Mellon Foundation in 1977 made possible the implementation and continued operation of this extremely important project.

The Morris and Gwendolyn Cafritz Foundation provided a matching grant (\$650,000) to purchase the portrait of Mary Cassatt painted by Edgar Degas. Support for the "Masterpieces of Versailles" exhibition came from Guerlain, Inc. Funds provided by a grant from Merrill Lynch were used to publish the catalogue for "'Adventurous Pursuits': Americans and the China Trade, 1784-1844." American Portrait Prints, the proceedings of the Tenth Annual American Print Conference, was published with the support of a matching grant from the Barra Foundation. Funds are being sought in FY 1985 for the production of a definitive catalogue of The Portrait Engravings of C.B.J.F. de Saint-Memin.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General FTP**	Amount	Special Purpose FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	77	2,986	--	12	--	198	--	1	--	--
FY 1985 Estimate	77	3,109	--	12	--	175	--	719	--	--
FY 1986 Estimate	77	3,139	--	12	--	45	--	60	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Hirshhorn Museum and Sculpture Garden (HMSG) was established by an Act of Congress (P.L. 89-788, November 7, 1966) and opened to the public on October 4, 1974. Its collection of art, soon to number more than 13,500 works, forms the basis of an active program of public exhibitions. The Museum also prepares catalogues relating to its collection and exhibitions, conducts extensive research and presents a wide range of educational activities including film programs, lectures, concerts, publications and tours. For FY 1986, an increase of \$30,000 is requested to support concert performances at the Hirshhorn Museum by the 20th Century Consort.

PROGRAM - In October 1984, the Hirshhorn Museum and Sculpture Garden celebrates its tenth anniversary. As one of the major museums of modern and contemporary art in the United States, HMSG operates an active program of exhibitions, research, acquisitions, and conservation, along with related programs of lectures, films, concerts and educational activities involving audiences of all ages.

Research - The Museum's resources include works of art, a curatorial file providing information on artists and works in the collection, and a library with 6,000 volumes. Approximately 700 works are on display at any one time in the Museum. Works not currently on exhibition are available for study to scholars and students by appointment. In coordination with the Office of Information Resources Management's Institution-wide automation plans, HMSG's data base will be placed on a new system that ultimately will allow researchers and the public to retrieve information on-line from computer terminals. The feasibility of producing a video disc publication of the entire collection is being explored currently. This would permit a high quality visual image of every object in the collection to be made available in approximately four seconds. Working with the Smithsonian Office of Printing and Photographic Services, a trial video disc containing 100 images from the Museum was produced in FY 1984.

Exhibitions - The Museum conducts an active exhibitions program that draws upon works in its own collections, as well as other collections. Major exhibitions scheduled for FY 1984 are: "Dreams and Nightmares: Utopian Visions in Modern Art"; "Drawings 1974-1984"; "German Expressionist Sculpture" (organized by the Los Angeles County Museum of Art); and "Artistic Collaborations in the Twentieth Century." In FY 1985: "Content: A Contemporary Focus, 1974-1984"; "Jim Dine: Five Themes" (organized by the Walker Art

Center); "Representation Abroad: Diversity"; and "Contemporary Italian Mysticism" are among the major shows scheduled.

Emphasis is placed on using the permanent collection as a source of traveling exhibitions. The Museum has organized a number of exhibitions drawn from its permanent collection that are toured by the Smithsonian Institution Traveling Exhibition Service (SITES) and by the Museum. Recent exhibitions toured by SITES are: "Raphael Soyer: 65 Years of Printmaking"; "Genre Scenes"; "Artists and Models"; and "Aspects of Color." Recent exhibitions circulated by the Museum include "Joseph Stella"; "Sculpture from the Hirshhorn Museum"; and "Oscar Bluemner."

Approximately 85 docents, trained by the Museum, give general tours covering the Museum's permanent collection and special tours of major exhibitions. These tours are supplemented by ones offered by the staff of the Education Department for special exhibitions.

As HMSG's permanent holdings become better known, they are sought as loans for exhibitions by other museums. In FY 1980, FY 1981 and FY 1982, the Hirshhorn lent 155, 181 and 186 objects, respectively. In FY 1983, this number grew to 344 objects and is expected to continue to grow. Funds first provided in FY 1984 are being used to support the cost to HMSG of these increasing number of loans. Expenses of these loans are related to inspecting objects to assure that they can travel, matting and framing works on paper when necessary, substituting Plexiglas for glass, photographing, and performing necessary conservation and restoration work. The borrowing institution defrays the cost of transportation and insurance.

Development of the Collection - The legislation establishing HMSG described its function as a "museum in Washington, D.C. where modern art could be exhibited and studied...(which)...would enrich the culture of the Nation." In order to carry out this mandate, it is essential that HMSG's collection always include contemporary art and that the Museum keep abreast of current developments in the visual arts. To present an accurate account of esthetic developments on an international level, an active acquisitions program is essential. In FY 1983, the Hirshhorn acquired 18 gifts and in FY 1984, ten objects were donated. In FY 1984, the Museum was able to add nine works of art through purchase with Federal funds, including a painting by Avigdor Arikha, "The Square in June"; and a drawing, "Three Mile Island, Night," by Yvonne Jacqueline. During FY 1985 and FY 1986, HMSG expects to accession the 7,500 objects from the bequest of the late Joseph Hirshhorn into its permanent collection. With approval of the Estate Trustees, work will begin in FY 1985 to create registration, archival and curatorial records on this material. This will include photography and other related activities.

Collections Management - The Museum inventories its entire collection on a three-year cycle with spot checks made at least annually. Starting in FY 1982 and continuing through FY 1984, there was a major effort to complete photographing the permanent collection. In FY 1984, catalogue worksheets were completed for all of the works on paper and work was under way to preserve, and where necessary conserve, the sculpture collection, especially the outdoor pieces.

Education and Public Orientation - To increase visitor appreciation and understanding of specific exhibitions and of modern art in general, the Museum provides visitors with a variety of educational materials, including explanatory wall labels and brochures. The latter range from a single page to illustrated minicatalogues and are distributed free of charge to the public. In a small theater on HMSG's third floor, a slide lecture program is presented three times an hour for the benefit of visitors. The slide presentation is enhanced by the installation of original works of art in a nearby gallery. During the "German Expressionist Sculpture" exhibition, a related slide program produced by the Los Angeles County Museum of Art was presented. The Museum has produced its own slide lecture, "Elements of Art: Color," the second in a series.

The Hirshhorn encourages visitation through its outreach program. Several film series are conducted including a lunchtime series about artists and their work, an evening series of films by artist filmmakers, and a Saturday film series for young people. Events held in the auditorium include concerts by the 20th Century Consort and lectures by artists, critics and art historians. There also are organized occasional symposia in connection with exhibitions.

EXPLANATION OF PROGRAM INCREASE:

Exhibitions and Performances (\$30,000) - The 20th Century Consort has been performing at the Smithsonian for ten years and the 1984-1985 season will mark its seventh season at the Hirshhorn. The Consort, an innovative chamber music ensemble, presents programs of contemporary and modern music and attempts to create a connection between its music and a current exhibition in the Museum. Prior to each concert, the chief of the Department of Education lectures about the current exhibitions and introduces one of the composers whose music is featured in the concert. One of the programs in the 1983-84 concert season featured German music relevant to the "German Expressionist Sculpture" exhibition.

These concerts are cosponsored by the Resident Associate Program and the Hirshhorn Museum. Four programs a year are given in the auditorium of the Hirshhorn. Attendance at these programs is excellent, frequently filling to capacity the 280-seat auditorium.

Funding for the 20th Century Consort has been sporadic in the past. In order to ensure a stable base for the annual musical programming and to allow proper long-range planning with the potential of expanding the scope of the Consort's programming an increase of \$30,000 is needed. The proposed funding will be applied to the contract costs of three to four concerts a year.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided from several sources including the Museum's share of sales in the museum shop and plaza cafe, and from other receipts such as fountain coins. In FY 1984, allotments will support the exhibition, "Content: A Contemporary Focus, 1974 - 1984," for the tenth anniversary of the Museum (estimated expenditures of \$170,000 in FY 1984 and \$130,000 in FY 1985) and travel expenses of the Museum's Board of Trustees.

Restricted Funds - In FY 1984, the Women's Committee of the Smithsonian National Associate Program funded a slide program on the "Conservation of Works of Art." The Museum is seeking outside support from various sources to help acquire costly and important major works for the permanent collection (estimated expenditures of \$696,000 in FY 1985 and \$37,000 in FY 1986).

CENTER FOR ASIAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	30	1,090	1	56	--	5	21	1,488	--	--
FY 1985 Estimate	37	1,587	1	62	--	3	21	1,485	--	--
FY 1986 Estimate	50	3,097	1	67	--	3	21	1,555	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Center for Asian Art is comprised of the Freer Gallery of Art, established May 5, 1906, and the Arthur M. Sackler Gallery, established July 28, 1982. The Freer Gallery of Art has a continuing program to acquire works of Oriental art of the highest quality and to conserve, study and display these objects as keys to understanding the civilizations that produced them. The Arthur M. Sackler Gallery is devoted to the acquisition, study, interpretation and exhibition of Asian art. For FY 1986, an increase of 13 workyears and \$1,510,000 is requested for the Sackler Gallery to further support the costs for inaugural activities to be held in the Quadrangle; exhibition preparation; collection acquisitions; collection management and research activities; and for education and administrative services.

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 26,800 works of art from China, Japan, Korea, India, and the Near East and spans 5,000 years. Included in the collection are paintings, sculptures, and other objects in stone, wood, lacquer, jade, pottery, porcelain, bronze, gold, and silver, and Biblical manuscripts. "The Peacock Room" by James McNeill Whistler is a highlight of an outstanding collection of American art that Charles Lang Freer, the Gallery's founder, considered a bridge between the arts of the East and of the West. Items not currently on exhibition are available to students and scholars for study. In addition to the collections, the Gallery houses a public library of approximately 30,000 volumes relating to the objects in the collections.

The unique Oriental collections of the Freer Gallery, together with notable holdings of American paintings, have made the Museum a center for students, scholars and the general public. The growing interest in this collection has been manifested in 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.

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 made available to the public through exhibitions, catalogues of exhibitions, articles, free gallery leaflets, and public lectures at the Freer as well as at other similar institutions. Updating the research files on the individual pieces in the collection continues. These files are made available to visiting scholars and students as well as the general public.

The results of curatorial research are most visible in the Gallery's exhibitions. However, additional research made available to the public can be found in collection research records, in lectures, and in published papers and books. Specifically, areas of research in Japanese art include an ongoing study of porcelains, the study of the influences of Korean slip-glazed ceramics on Japanese ceramics and the economics of ceramic production in Edo-period Japan, with special interest in daimyo-descended kilns and Kyoto potteries. Research also is being conducted on late Edo-period drawings including those by Hokusai, on Edo-period lacquer and on medieval narrative painting.

In the field of Chinese art, work continued on Chinese calligraphy in preparation for an exhibition and catalogue in FY 1985 as well as on Chinese paintings. Results from recent archeological discoveries in the People's Republic of China contributed to new research on similar objects in the Freer; the results of this research were made available to the public in lectures at the Gallery and in other museums in the United States and abroad.

The Technical Laboratory of the Freer Gallery of Art is renowned for its research activities, in addition to the ongoing conservation and restoration of objects in the collection. Research has included: lead-isotope ratios in Chinese bronzes and colors of the copper-tin-lead alloy system (both subjects of papers presented at the Archaeometry Conference in Washington, D.C., in May 1984), lead-isotope ratios in Oriental pigments, and examination and analysis of Islamic metalwork in the collection for the catalogue of the exhibition scheduled for FY 1985. The Technical Laboratory will continue infrared photography on American pastels, research on lead-isotope ratios and bronzes, identification of certain unidentified green pigments on Japanese paintings and studies on Chinese ink samples. An ongoing study of American pastels and watercolors using infrared photography, that was begun recently, will continue in the future. Additional technical research included the completion of the survey of pigments on Japanese Ukiyo-e paintings in the Freer; this is being reviewed for publication.

Conservation - In FY 1984, objects in various media (ceramics, wood, lacquer, metal, etc.) were treated, along with many Persian and Indian miniatures. A large group of works of art by James McNeill Whistler were treated so that they could be included in a major exhibition which opened on May 11, 1984. This included many drawings and pastels as well as 17 wooden dado panels from the stairway which led up to the Peacock Room in its original London setting. The panels never before had been exhibited in the Freer and required treatment to render them structurally sound. Also, conservation activities will broaden to include examination and treatment of objects from the Arthur M. Sackler collection.

Exhibitions - Japanese exhibitions in FY 1984 included "Korean Influences in Japanese Ceramics" which exhibits 50 objects from the Freer's ceramic collection. This exhibit examines the enduring appeal in Japan of Punch'ong ware, Korean ceramics that entered Japan in the 16th century. The exhibition presents several Korean prototypes from the Yi Dynasty (1392-1910). It also focuses on Japanese ceramics from the Momoyama (1568-1615) and Edo (1615-1868) periods that feature several Korean techniques of applying slip to dark-bodied wares. These techniques became major elements in the styles of the western Japanese ceramics centers founded by Korean potters. They also were adopted and adapted elsewhere in Japan.

Another recent Japanese exhibition is entitled "Japanese Portraiture." On view was a selection of 18 portraits and imaginary portraits by Japanese painters of the 13th to 19th centuries. Included are interpretations of historical personalities of India, China and Japan who have had an impact on the cultural history of Japan.

"Japanese Drawings" includes the preliminary drawings that Katsushika Hokusai (1760-1849) made for a partially published series of woodblock prints that are featured

in this exhibition of 35 brush and ink drawings by 19th-century artists. The works by Hokusai illustrate the extraordinary amount of care with which this master prepared his print designs. Also included will be drawings by Gyosai (1831-1889) and others.

"Japanese Fans" includes painted fans of high artistic quality produced by some of Japan's most famous painters, as well as by workshops where fan painting was an important means of livelihood. This exhibition, presented in conjunction with the major fan exhibition held in the Renwick Gallery, includes Japanese fans of both folding and circular shapes, some mounted on folding screens or scrolls or serving as decorative motifs for screens, ceramics, or lacquer. Fans decorated by well-known Japanese painters include a folding fan with an ink landscape by the 16th-century painter Sesson and a circular fan with paintings in color by Korin (1658-1716).

"Chinese Paintings" exhibited a selection of 30 paintings spanning the Sung dynasty (960-1279) through the Ch'ing dynasty (1644-1912). This exhibition included two recently accessioned works by Tao-chi, a 17th-century painter with a wide reputation in the West. Tao-chi was a member of the imperial family that ruled during the Ming dynasty and retreated to a monastery and took up painting following the Manchu conquest in 1644. Tao-chi's painting, "Peach Blossom Spring," also was exhibited.

In "The Ramayana" exhibition, 24 paintings from a 16th-century Indian manuscript tell the story of Rama, the Hindu god-man. A children's version of the story of Rama was published as the catalogue for the exhibition entitled, The Adventures of Rama.

"Islamic Manuscript Illumination" exhibited 19 folios produced in Egypt, Iran, Afghanistan and Uzbekistan between the 10th and 16th centuries. This exhibition offers a look at the decoration of religious and secular manuscripts.

"Pre-Islamic Metalwork from the Near East" exhibited 24 objects in silver, gold and bronze, made in Iran and Egypt, from the 4th century B.C. to the 6th century A.D, including Sasanian Iran (224-651) and nine gold objects from Egypt.

In May 1984, a major exhibition on James McNeill Whistler marked the 150th anniversary of the painter's birth. Every Whistler painting, drawing and watercolor in the Freer collection (there are approximately 300) was exhibited and reproduced in an exhibition catalogue which is considered a definitive statement on the Freer's Whistler collection, one of the two largest collections of his work in the world. The Freer also holds 900 etchings and engravings by Whistler which will be exhibited at some future time.

"Islamic Metalwork" is being planned for early 1985 which will also include a catalogue. This exhibition marks a four-year collaborative research effort by the curator of Near Eastern art and the technical laboratory. Also planned for FY 1985 is a major exhibition entitled "Chinese Calligraphy." In FY 1986, the Freer is planning a large exhibition that is tentatively entitled "Freer Masterpieces" as well as an exhibition of Dwight W. Tryon, an American artist well represented in the Freer collection.

Collection Acquisitions - Recent additions to the collection purchased with the Freer Gallery's nonappropriated Trust funds included Chinese wooden sculpture, painting, calligraphy, ink sticks, jade and ceramics. With the recent purchase and donation of 29 Chinese ceramics from a private American collection, the Freer's holdings in Shang and Chou dynasty ceramics are the best in the United States. Japanese art paintings, ceramics, calligraphy and a Noh mask were also acquired by purchase and donation. A pair of Japanese Kamakura period lion-dog wooden sculptures were purchased by the Freer using a Smithsonian Society contribution and Freer Trust funds. An important Chinese painting by Shih-tao was purchased by the Freer using monies from the nonappropriated Smithsonian Collections Acquisition, Scholarly Studies and Educational Outreach Program and from Freer Trust funds.

Education - As part of the Freer's education program during FY 1984, the Gallery offered seven public lectures with the general theme of connoisseurship. Other parts of the education program include a free introductory brochure given to the public and mailed to individuals and groups who write for general information on the Freer, a free introductory brochure for the visually impaired, the continuance of the highly successful free exhibition leaflets introducing various aspects of the Gallery's collections, and the tours given by docents. In FY 1984, over 19,000 visitors joined the weekday and weekend tours given four times a day. The Freer also participated in a consortium of local universities for the teaching of Oriental art in the Washington metropolitan area.

Leaflets, pamphlets, catalogues produced by the staff in FY 1984 included a general book on the history and programs of the Freer Gallery of Art, The Adventures of Rama by Milo Cleveland Beach, and James McNeill Whistler at the Freer Gallery of Art by David Park Curry. A Freer Gallery floor plan in Chinese was added to the Gallery's other four in French, German, Spanish and Japanese. A new program currently being planned is educational outreach to the elderly and to the young. Docents will visit institutions using slides to illuminate aspects of Asian and American art for these special groups.

ARTHUR M. SACKLER GALLERY

PROGRAM - The primary goal of the Sackler Gallery is the advancement of the scholarly appreciation and public knowledge of the arts, especially Near and Far Eastern art. Towards this end, Dr. Arthur M. Sackler donated a collection of nearly 1,000 objects in the fields of Chinese, Indian, Southeast Asian and Near Eastern art. Among the works in the collection are 475 Chinese jades spanning a period from Neolithic times (5000 B.C.-1500 B.C.) into the 20th century; 153 Chinese bronzes from the Shang (ca. 1523 B.C.-ca. 1028 B.C.) through the Han (206 B.C.-220 A.D.) dynasties; Chinese lacquer, Near Eastern metalwork, and sculpture from ancient Cambodia, India and Thailand.

Funds were provided in FY 1984 for an assistant director for the Gallery and for steel storage cabinets to serve as temporary storage at the Museum Support Center for the valuable artworks. All of the objects given to the Gallery by Dr. Sackler will be in the possession of the Smithsonian by the end of 1984. Since the Gallery cannot receive objects until the building's completion in 1986, temporary storage space at the Museum Support Center in Suitland, Maryland will be used.

Conservation - There is a critical shortage in this country of skilled persons trained in traditional methods of preserving Far Eastern paintings and screens. Only three facilities capable of restoring and mounting rare Far Eastern paintings and screens exist in this country, and the works in those institutions consume all of the time of those studios. Studios in Japan also are fully occupied with conservation of Japanese collections. Expansion of the conservation facilities in a renovated Freer building will accommodate the requirements of the Sackler programs. An expanded Oriental painting restoration program also is being planned.

Exhibitions - An extensive exhibition program is envisioned. This program will include Gallery-originated exhibitions as well as traveling shows organized elsewhere. Exhibitions will be drawn from public and private collections as well as from the Sackler collection. It is expected that many Gallery-organized exhibitions will travel to other museums and institutions. The inaugural exhibition in the new building will display the entire collection of the Sackler Gallery along with certain other major objects on loan from the collection of Dr. Sackler. Under consideration 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 these exhibitions.

Education - In addition to scholarly publications related to particular exhibitions, an extensive publications program is planned. Under consideration is a journal that would contain articles relating to objects in the collection. It is anticipated that the collections of the Gallery will attract a large number of research scholars and that an active program for awarding research fellowships would be beneficial. These fellows would work closely with curators on topics related to the collections.

Collection Acquisitions - The Gallery may acquire art objects in those fields of central interest to the museum, e.g., the arts of Asia in its broadest terms, from Korea to Egypt. Objects acquired for the collection in the future will be of high quality with respect to aesthetic standards, cultural history and physical condition. Objects may be acquired by gift, bequest or purchase provided that they meet established acquisition criteria and the approval of the director.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, 13 workyears and \$1,510,000 is requested for the Sackler Gallery to further support the costs for: the inaugural exhibition to be held in the Quadrangle; exhibition preparation; collection acquisitions; collections management and research activities; and education and administrative services.

Exhibitions (3 workyears and \$1,000,000) - An additional 3 workyears and \$1 million are requested in FY 1986 to establish an exhibit design and installation staff for the Sackler Gallery (3 workyears and \$95,000 for part-year funding of five positions); to furnish exhibition space in the Gallery and prepare for the inaugural exhibition (\$890,000); and purchase supplies (\$15,000).

The positions needed for the staff consist of an exhibition designer, graphics designer, woodcrafter, carpenter and painter assistant. The exhibition designer and graphics designer are required to design the inaugural and subsequent exhibitions. Graphics tasks will include design of exhibition labels, photo murals, signage, posters, and information brochures. The woodcrafter, carpenter and painter assistant initially will assist with installation of the inaugural show and then with subsequent exhibitions.

An amount of \$890,000 is sought to furnish all of the exhibition space in the Sackler Gallery and to defray the costs of the installation of the inaugural exhibition. This show will take place in the more than 25,000 square feet of available exhibition space and include the entire collection of 1,000 objects in the Sackler collection. An amount of \$15,000 is requested for exhibition installation supplies. The total of 25,000 square feet is larger than the current exhibition space in the Freer Gallery of Art. The proposed increase will be used for such essential items as secured exhibition cases, many of which must be humidity and temperature controlled, partitions and special lighting for the art objects.

Collection Acquisitions (\$100,000) - With an increase of \$100,000 the Gallery would be able to systematically expand the initial collection which is deficient in three specific areas: Japanese, Indian and Islamic art. There are only two pieces of Japanese art in the current collection, and in view of the importance and prominence of Japan in the Asian art world, additional representative pieces are needed. A typical Japanese object, appropriate for the Sackler collection, would cost in excess of \$100,000. The Indian portion of the Sackler collection is relatively small with 20 pieces of stone and bronze sculpture, and expansion is desirable. The 1985 Festival of India is expected to affect the demand for Indian artworks by greatly increasing their popularity. At present it is not uncommon to purchase an Indian sculpture for \$150,000, and some major sculpture costs considerably more. The Gallery plans to strengthen the Islamic collection as well.

Collections Management (4 workyears and \$171,000) - In FY 1986, an additional 4 workyears for six new positions to be phased in during the year and \$90,000 are requested. The six positions consists of a photographer, a conservation technician, an assistant curator, curatorial secretary, registration secretary, and an oriental art restoration specialist.

A photographer is needed to photograph the entire collection not only for registration purposes but also for study and publication purposes for both Sackler staff and outside scholars. The conservation technician will assist in cleaning, repairing and other preparation work of each object prior to exhibition. An inventory of the collection, in terms of current conditions and conservation requirements, will be made. This technician, trained in handling art objects, will be involved in the relocation of the collection from the Museum Support Center to the Sackler Gallery. The assistant curator will be a specialist in ancient Chinese art, particularly bronzes and jades, reflecting the emphasis of the Sackler collection and to some extent the Freer collection. This curator will assist in preliminary work on the inaugural exhibition. This work will include producing exhibition labels and maintaining the records of objects within this area of specialization in order that such information be available to scholars and the general public. A registration secretary is needed not only for the development of records for the Sackler collection but also for the additional documentation related to traveling exhibitions involving other collections beside the Sackler. An oriental art restoration specialist is needed not only to work with the objects in the Sackler collection but also to prepare objects from other collections for exhibitions.

A further sum of \$81,000 is requested for: general supplies for collection management and for setting up the oriental art restoration studio in the Sackler Gallery (\$65,000); related equipment (\$10,000); and travel (\$6,000).

Research (2 workyears and \$55,000) - To maintain the level of research established by the Freer and with the increased activity related to the collections and exhibitions at the Sackler Gallery, two workyears and part-year funding of \$49,000 is sought for a curator, an assistant curator and a secretary. The assistant curator will have particular expertise in ancient Near Eastern art history and will engage in research projects related to the ancient Near Eastern objects in the Sackler collection. This specialist would complement the expertise of the Freer curator who specializes in Islamic art. The part-time senior curator will conduct research from a different perspective from the traditional art historical approach, e.g., the Sackler ancient Chinese bronze collection may be examined in terms of technique that will complement art historical analysis. A further sum of \$6,000 is sought for curatorial travel in FY 1986.

Education and Administration (4 workyears and \$134,000) - For the education program, 4 workyears and \$134,000 are sought for a public affairs specialist, an education specialist, technician, library aide, and a secretary. A public affairs specialist is required to prepare for the inaugural exhibition; and editor, who will prepare catalogues, gallery leaflets, scholarly journals for exhibitions subsequent to the opening; an education specialist, who will establish a docent program, a children's workshop and related programs; and a library aide, who will organize the library for public opening. Contractual services for printing and general brochures, pamphlets, and guides for the Gallery will be required as well. Also required for the administrative office are the services of a technician and a secretary, who will assist in preparing accounting type documents for the numerous program and exhibition installation activities; administrative travel; and office supplies.

Automation (\$50,000) - A sum of \$50,000 is requested for the purchase of office automation equipment. Seven computer terminals and ancillary equipment will be needed in the Sackler Gallery when the new building is occupied initially. They will be located in the Office of the Director, the library, the editorial office, the Technical Laboratory,

and in various staff office areas. In addition to standard word processing capability, the equipment will provide access to data on the collections of the Center for Asian Art as well as traveling exhibitions shown at the Gallery. Additional functions will reflect the specialization and interests of the various departments, e.g., budgetary functions for administration and scientific analytical functions for the Technical Laboratory. The equipment will provide the capability for better collection management control, better data accessibility for students and other researchers, and more efficient production of manuscripts and exhibition labels. The Office of Information Resource Management is making a determination of the specific equipment to be used at each location.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided from allotments and are used to defray the costs of special events associated with the opening of new exhibits and to cover the travel costs of members who attend the Center's Visiting Committee meetings. These funds also support the coordinator of special programs position in the Center.

Restricted Funds - The major portion of the nonappropriated Trust funds used by the Center stems from the Charles Lang Freer gift and bequest and is restricted by the conditions that are stipulated in that document. The funds are used to help finance expenses of 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 (estimated expenditures of \$1,449,000 in FY 1985 and \$1,522,000 in FY 1986). A grant from AT&T of \$120,000 was received to support the exhibition and catalogue on James McNeill Whistler. Additional support has been received from the Clark Endowment for the purchase of Japanese art and from the Harold Stern Endowment to support scholarly research (estimated expenditures of \$27,000 in FY 1985 and \$30,000 in FY 1986).

ARCHIVES OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose					
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	16	714	-	3	-	-	16	1,031	-	-
FY 1985 Estimate	16	741	-	6	-	-	16	1,369	-	-
FY 1986 Estimate	20	1,094	-	6	-	-	19	1,318	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Archives of American Art is a national research bureau of the Smithsonian Institution with a network of offices across the country. It is the Nation's largest repository of documentary and source materials relating to the history of the visual arts in the United States. Its collections contain more than eight million documents, 400,000 photographs, 75,000 works on paper and some 3,000 tape recorded oral history interviews. The original material in these collections is housed in Washington, D.C. Through a series of regional centers the Archives reaches out to the Nation with microfilm copies of the collections which are readily available to students and scholars; the collections on film also circulate worldwide through interlibrary loan. Regional Centers are located in Boston, New York, Washington, D.C., Detroit, San Francisco, and Los Angeles; temporary offices for special collecting projects are in Houston, Santa Fe, Philadelphia and Seattle. For FY 1986, an increase of 4 workyears and \$353,000 is requested to begin critical conservation work on the photographic and tape recordings collections (4 workyears and \$155,000); to begin a program of repair and replacement of the microfilm collection (\$80,000); and to purchase computer hardware and software and to fund computer user fees (\$118,000).

PROGRAM - As a national organization devoted to the study of art and cultural history in America, the Archives' primary mission is to provide the fundamental documentation for research and publication on the visual arts in America. The Archives collects basic manuscript materials, photographs, drawings and prints that pertain to research; makes its documentary resources known across the country; and provides easy access to its resources in the form of microfilm. Through the continuing accumulation of letters, diaries, sketchbooks, business papers, photographs, oral history interviews, and other forms of primary records, the Archives offers the raw material for scholarly analysis and interpretation of the arts in America. Its holdings provide primary information on the lives of the artists, art galleries, museums, and the historical events of American art.

Founded in 1954 as a private institution in Detroit, the Archives became a bureau of the Smithsonian in 1970 following a resolution by the Board of Regents and the drawing up of an agreement between the Archives' Board of Trustees and the Institution. The national Board of Trustees provides advice and assistance to the Board of Regents and the Secretary on all matters relating to the Archives. Since the purpose of the Archives is to stimulate research, its constituency is made up chiefly of art historians, museum curators and graduate students. The Archives resources make possible numerous books, articles, dissertations, graduate papers and exhibition catalogues.

Research - For a Smithsonian research bureau, one measurement of success is the degree to which its collections are used. During FY 1984, 3,300 research visits were made to all offices and 1,900 rolls of microfilm were lent to researchers through libraries in the United States and abroad. Earlier research conducted at the Archives came to fruition this year in the form of several dozen books, exhibition catalogues and films. In addition to its catalogue, inventories, and other finding aids, detailed accounts of recent acquisitions are published in the quarterly Archives of American Art Journal and reports are given regularly to an expanding national network of advisory committees representing the scholarly community.

Future plans for the Archives include: the compilation of a finding aid to documents of the Federal Art Project to commemorate the Project's 50th anniversary in the summer of 1985; the first publication in a series of sources and documents in the history of art in America (in FY 1986); an expansion of the Journal to include additional documents from the collection; and a finding aid to the photographic collection.

Development of Collections - Collections of papers received in the past year cover one and a half centuries of American art. They include the records of William Edward West, an early 19th-century portrait painter; substantial microfilmed groups of papers of Thomas Cole and Winslow Homer; important series of letters from Mark Tobey and Adolf Dehn; and a large quantity of the correspondence, diaries, photographs, and manuscript writings of the Philadelphia artist Violet Oakley. The Edward Corbett papers have useful letters from Ad Reinhardt and Clyfford Still, and those of the caricaturist Al Hirshfeld contain fan mail from notable theater and literary figures. Negotiations conducted over several years with the Jackson Pollock estate came to a successful conclusion in 1984 with the acquisition of his records. For the Archives, perhaps the most gratifying accession was the voluminous files of its founder, the eminent art historian Edgar P. Richardson.

The Oral History Program continued two major projects and completed a third. Begun as a project in FY 1981, further reminiscences of the artist Mark Rothko (one of the most important and influential artists since World War II) were obtained from close friends and associates. A combination of oral and video interviews with selected artists in five cities, begun in 1983, will use as subjects this year Frank Stella, Tom Wesselman and Sam Gilliam. The two-year Pacific Northwest oral history project concluded in 1984 with the completion of 30 taped interviews on the art of that region. The Archives conducted 64 oral history and audio-visual interviews in FY 1984 in its continuing effort to document contemporary artists, craftsmen, dealers, critics and art historians.

Preliminary surveys of institutional holdings of art records in Philadelphia, Rhode Island, and New York libraries, historical societies, and museums in those areas are now under way, while a similar project in Santa Fe and in Taos, New Mexico, is being conducted by the Archives' Texas center in Houston. In a significant new development for collecting in the Southwest and Southern California regions, the Archives opened a Los Angeles area office in 1984. Housed at the Huntington Library and funded entirely by local contributions, it will serve as an additional base for acquisitions and research on the West Coast.

In FY 1985, cooperative programs of collecting will be arranged with other archival and scholarly institutions, and an index of papers not in the Archives will be established. It is expected that by FY 1986 a significant data base of existing collections will be established, which will allow for both study and exhibition. The Archives also expects that the large collections of papers from institutions such as the American Federation of Arts, the American Academy in Rome and the papers of the Carnegie International Exhibitions will be catalogued and ready for use. A large project to film the collection of papers of J.A.M. Whistler will be completed in FY 1985.

Exhibitions - The Archives makes available selections from its holdings to museums for exhibition purposes. The successful large scale exhibition of David Smith papers at the Hirshhorn Museum and the San Antonio Museum of Art last year was followed by a small but choice exhibit on Gertrude Vanderbilt Whitney at the National Portrait Gallery. The Whitney Museum of American Art borrowed from the Archives substantial groups of letters, photographs, and sketchbooks for three exhibitions: works by Reginald Marsh, the architect Raymond Hood, and for the recreation of the influential Forum Show of 1916. Similar material supplemented an exhibition of the early 20th-century realist group "The Eight" at the Hirshhorn Museum and the Terra Museum of American Art in Evanston, Illinois. Documents from the papers of the American symbolist painter Claude Buck accompanied an exhibition of his work in San Francisco, and the Harry Gottlieb papers supplied useful items to Rutgers University.

Under consideration for FY 1985 is an exhibition of photographs of artists' studios with a publication drawn from supporting manuscript material, and in FY 1986 an exhibition of drawings, manuscripts and photographs concerning the early history of the American Academy in Rome.

Public Education - The Archives' educational activities include symposia, staff lectures, art tours and publication of the Archives of American Art Journal. In 1983, a major conference was organized in conjunction with the Detroit Institute of Arts exhibition, "Quest for Unity," on American art and culture between 1876 and 1893. The Archives' New York center sponsored a series of tours of corporate art collections, and the New England center arranged an informative tour of museums and artists' studios in the Berkshires. Plans for more frequent and extensive publication of historical documents are under way.

As a new educational project, the Archives began development of a film on its activities. This endeavor will enable the Archives to reach a vast national audience through television and other means of distribution.

Conservation and Care of Collections - The Archives is faced with critical conservation problems. These are addressed in the "Explanation of Program Increase" section. Large groups of valuable manuscript material, photographs, sketches and drawings are in urgent need of preservation measures, but with no access to a paper or photograph conservator, the Archives can undertake only minimal steps to preserve its holdings. One significant accomplishment in 1984, however, was the final elimination of some 7,755 nitrate negatives from the photograph collections. Some were copied onto safety film while others were either put in cold storage or destroyed. Moreover, a survey and analysis of the condition of photographs, especially those of esthetic or historic value, has begun with expert assistance from the National Portrait Gallery.

During FY 1985 and FY 1986, the Archives will give increased attention to the management and care of collections. Deteriorating microfilm gradually will be replaced. The Archives also will continue its inventory program to reconcile the physical collection to the accession records, and will initiate indexing and cataloguing related to the automated collections management system implemented in FY 1984 and FY 1985.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 4 workyears and \$353,000 is requested to begin critical conservation work on the photographic and tape recordings collections (4 workyears and \$155,000); to begin a program of repair and replacement of the microfilm collection (\$80,000); and to purchase computer hardware and software and to fund computer user fees (\$118,000).

Care and Conservation of Collections (4 workyears and \$155,000) - It is essential that the Archives begin some critical conservation and organizational work on its invaluable collection of an estimated 400,000 photographs. The Archives estimates that some

3,000 of its photographs, in addition to being important historical documents, are intrinsically of high value either because of their age and uniqueness or because of their recognized, fine-art quality. The Archives now has an extraordinary collection of some 3,000 interviews--original voice recordings which communicate material in a unique way simply not translatable into any other medium. It is important to assure that this collection is not lost due to neglect and lack of professional care. The early tapes are showing signs of deterioration, and expertise is needed to examine this collection and to take the necessary steps to clean, properly store, and preserve them. Professional methods and systems for the oral and video history programs need to be developed as these activities continue as important forms of information gathering. The proposed increase of \$155,000 would allow for: one workyear and \$98,000 for a curator of photographs, storage supplies and the beginning of contractual conservation work on some of the high value photographs; one workyear and \$23,000 for a keeper of oral history with expertise in the preservation of audio and video tapes; one workyear and \$19,000 for a technician to work on processing and basic preservation of collections which have been received recently but not yet processed because of lack of staff; and one workyear and \$15,000 for a clerical support person to assist in the development of records, cataloguing and indexing in these areas as well as to handle the demands of steadily increasing photo orders and correspondence.

Collections Management (\$80,000) - In 1954, the Archives began collecting artists' letters, diaries, business papers and photographs along with extensive museum, gallery and collectors' records to document the visual arts in America. These documents have been microfilmed to allow continued and permanent access to a body of material, now numbering approximately eight million items. A broad range of individuals across the country and around the world, including art and cultural historians and students, critics and writers, curators, and other museum professionals, collectors, and dealers, have access to the entire Archives' collection, by the use of this microfilm, at its six regional centers and through inter-library loan.

Since the resources of the Archives have gained wider attention, increased wear and tear on the microfilm has occurred. As a result, reels of microfilm that have been given heavy use now need splicing, cleaning, new leader tapes or replacement reels as images have faded. It was recently discovered that an entire series of tapes produced between 1974 and 1976 are of poor quality (film has become brittle, film cannot be threaded for reading without snapping, etc.). It is imperative that the Archives begin a regular, ongoing program to repair and replace damaged microfilm in order to maintain the collection at its best and to continue uninterrupted service to the scholarly community. For FY 1986 \$80,000 is needed to replace 1,600 tapes at five Archives centers that have this particular film.

Automation (\$118,000) - Until 1984, The Archives of American Art conducted all of its operations manually. Given the complexity of the operation, the multiple sources and type of funding, the geographical dispersion of the regional centers, and the limited staff support at every level from collecting to collections management to administration, it is essential that the Archives become automated to gain critical physical control necessary to maintain a collection of eight million items, an active membership program, and a multiple office system. The Archives plans to achieve full automated capability by the end of FY 1986.

In 1984 the Archives acquired four terminals and two printers which allowed automation capability for the collections management operation in Washington, D.C. where the central processing of all collection items is handled. With automation, the Archives will be able to provide users with more helpful guides to the collection through expanded cataloguing, references, and subject headings. Similar systems are planned for each of the six regional centers by end of FY 1984, a move which will provide an unprecedented bibliographic link between all of the Archives' facilities.

In addition, the Archives plans to purchase a computer system which will be compatible with the current system in order to provide additional sophisticated office automation capability such as word processing and accounting systems, as well as providing collections management capability. The Archives plans to install additional computer systems in each of the regional centers. In 1984, the Archives will purchase two terminals, printers, and several software packages for the Washington and New York City offices. As the administrative center of the Archives, the Washington center, in conjunction with the New York administrative office, will develop the specialized software packages for use by the other regional centers.

In FY 1985, the cataloguing process will continue and collections management and hopefully office automation capability will be made available to at least one additional regional center with the purchase of a third system. For FY 1986, the Archives will concentrate on completing its national automation program by purchasing hardware and software for the four remaining regional centers. In addition, the Archives plans to purchase any outstanding component parts not bought previously to service the entire Archives automation system. For this purpose, a sum of \$118,000 is sought in FY 1986.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided to defray costs associated with special events and to supplement the travel expenses incurred by the Archives' Board of Trustees.

Restricted Funds - These are generated through fund-raising activities, the solicitation of gifts, as well as foundation and corporate grants, and a membership program. A substantial portion of this income is used to support the Archives' general operating expenses, including 16 full-time employees, its Oral History Program, and the entire publications program.

Foundation and corporate grants have provided the principal sources of support for special projects. The Luce Foundation and Lehman Foundation are supporting collection projects in Philadelphia, Rhode Island, and New York (estimated expenditures of \$112,000 in FY 1985 and \$50,000 in FY 1986). Development of a film on the archives activities to reach a vastly increased audience through television and other means of distribution has been started through a grant from the Robert Wood Johnson Charitable Trust (estimated expenditures of \$70,000 in FY 1985 and \$98,000 in FY 1986). In FY 1984, the Archives opened its Los Angeles area office, housed at the Huntington Library and funded entirely by local contributions (estimated expenditures of \$104,000 in FY 1985 and \$113,000 in FY 1986). Support in FY 1986 and FY 1987 will be sought to publish a series on the history of art in America and for a publication of selected prints in the Archives' collection of photographs.

COOPER-HEWITT MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose				FTP**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	25	851	18	739	5	1,041	1	264	--	177
FY 1985 Estimate	32	1,092	18	717	5	1,023	1	732	--	50
FY 1986 Estimate	38	1,242	18	747	5	1,100	1	812	--	50

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Cooper-Hewitt Museum, housed in New York City's national landmark Andrew Carnegie Mansion and the adjacent Miller House, opened its doors to the public in October 1976 as the Smithsonian Institution's museum of design. With world-renowned collections that include drawings, prints, textiles, wallcoverings, furniture, jewelry, glass, ceramics, metalwork and other examples of decorative and applied arts representing three millenia and dozens of cultures, the Museum is a leading international center for the study and interpretive display of the arts of design. For FY 1986, an increase of 6 workyears and \$150,000 is requested to strengthen the Museum's collections management efforts (5 workyears and \$100,000) and automation efforts (1 workyear and \$50,000).

PROGRAM - The Cooper-Hewitt Museum is a center for collections, exhibitions and educational activities exploring the processes and products of historical and contemporary design. The Museum was established as the Cooper Union Museum for the Arts of Decoration in 1897, a hands-on working laboratory for the benefit of designers, whether practitioners or students. Through the generosity of several benefactors, extraordinary resources were assembled and freely made available for study, resources which have since been described as some of the most distinguished "working" collections of the applied arts in the world.

The Museum's collection of drawings is the largest of any museum in this country, and its prints, textiles, and wallpaper holdings are of international importance. Groups of jewelry, silver, porcelains and other ceramics, glass, and furniture constitute the decorative arts collections; and the Dreyfuss Study Center, with a library of 35,000 volumes and a massive archive of related materials, is recognized as being among the most important of its kind in the world.

In 1967, the Museum and library were transferred by the Cooper Union to the Smithsonian Institution and renamed the Cooper-Hewitt Museum, the Smithsonian Institution's museum of design. Today, it is housed in a national and city landmark, a 1902 mansion built as the residence of philanthropist Andrew Carnegie, as well as an adjacent town house. These properties were given to the Institution in 1972 by the Carnegie Corporation as a permanent home for the Museum and now stand as one of the principal attractions of New York City's famous "Museum Mile" on Fifth Avenue.

Through an active exhibitions program (12 to 16 projects per year), related publications and innovative educational programming, the Museum serves a widening and increasingly enthusiastic public. A membership program serves 5,500 individual and

family membership holders annually and provides the opportunity for interested, appreciative persons to offer the Museum a measure of tangible support. In FY 1983, the Cooper-Hewitt welcomed over 216,000 visitors. The pattern of service to a dramatically growing, loyal public is established clearly, despite the Museum's youth.

In FY 1984, Cooper-Hewitt exhibitions and publications presented subjects as diverse as innovative contemporary uses of continuous pattern in textile design, the artistry of Renaissance silversmiths, traditional arts of the American Plains Indians, Dutch Expressionist architecture, and design traditions of tea. "The Amsterdam School: Dutch Expressionist Architecture 1915-1930" was the first analysis of this important topic prepared for English-speaking audiences and a book of the same title is now being distributed for the Museum by M.I.T. Press. Architecture was also the focus of another major FY 1984 exhibition, "Manhattan Skyline: Between the Wars," which was organized by the Museum with partial support from the New York State Council on the Arts (NYSCA).

In a very different vein, and again with assistance from the NYSCA, the Museum's Textiles Department organized a first showing of the finest embroidered examples from the large collection of samplers in FY 1984. A stitch guide and collection handbook, illustrating specimens from various European, American, and other cultures, accompanied the exhibition. Tea was the theme of another major exhibition which surveyed the variety of design considerations and traditions that have been generated by that ubiquitous beverage. The exhibition included teapots and utensils used in the service of tea.

Numerous smaller exhibitions in FY 1984 included a study of a highly individual esthetic theory evolved by the architectural sculptor John De Cesare to relate musical and visual forms; selections from the Museum's extensive holdings of prints by the Tiepolo family; and a recently acquired collection of antique European damask textiles. Others were devoted to intricately carved and finished netsuke figures from Japan, the world-famed Schroder Collection of important Renaissance silver objects, and the Minneapolis Institute of Fine Arts' impressive Doneghy Collection of southwest American Indian silver.

Three other large exhibitions mounted in FY 1984 again typified the diversity of the Museum's interests. "American Enterprise: Nineteenth Century Patent Models" was a popular panoply of colorful and amazing relics of the history of American patent law and Yankee ingenuity (together with a book of the same title); and "Circles of the World: Traditional Art of the Plains Indians," gave visitors to the Cooper-Hewitt the opportunity to enjoy and study the sumptuous Native American design achievements to be discovered among the superb holdings of the Denver Art Museum.

In FY 1985, the Museum plans to deal with "Fabled Cloth: Batik from Java's North Coast," "Chicago Furniture," "Chinese Gold and Silver from the Tang Dynasty (AD 618-907) from American Collections," "Paestum and the Doric Revival," "Wine," "Rare Books from the Cooper-Hewitt Collection," "Embellished Calendars," "New Vistas: American Art Pottery from the Goodman Collection," and the art of contemporary European illustrators. Among the many specialized subjects and larger thematic areas being developed for exhibitions and publications in FY 1986 and beyond are: Berlin in the 1920s, the influence of Asian Indian culture on design, printed fabrics, ribandry, railroads, underwater life, color and light, and death.

Among the most important recent changes at the Cooper-Hewitt has been the successful launching of an accredited, two-year masters degree program in the decorative arts which is administered jointly by the Museum and the Parsons School of Design. FY 1984 saw the graduation of the first class admitted to the program and admission of the third. At the same time, the Museum continued to offer courses in the history of art and design for undergraduate degree credits, also in coordination with Parsons. Hundreds of individuals register for courses at the Museum every quarter, drawn by lecturers dealing with

subjects related to current temporary exhibitions; the history of landscape, industrial or interior design; architectural criticism and history; craft demonstrations; and tours. Special programming is developed continuously for children and special audiences who cannot visit the Museum.

In the fundamental area of collections management, the Cooper-Hewitt continues to refine inventory records, reconcile discrepancies between pre-existing records and the automated listings created for the recent comprehensive collections inventory project, develop more complete location guides, and add records for new acquisitions. Also in FY 1984, the Museum obtained a grant from the New York State Council on the Arts to permit the appointment of a staff photographer. A basic photography studio was established during the grant period and intensive efforts were directed toward the goal of documenting important segments of the decorative arts collection not previously photographed. The Museum will initiate an effort to organize and care for its extensive archival holdings during FY 1985 and FY 1986. While not formally part of the permanent collections, these materials (estimated to contain several hundred thousand images and items) are invaluable documents which closely complement both the Museum's collections of objects and its celebrated library resources. Not dealt with during the permanent collections inventory process, these rich holdings are a very high priority for continuing collections management energies.

In FY 1984, with additional grants from the New York State Council on the Arts, the Museum continued to serve as a conservation advisory center for smaller institutions throughout the State and was able to offer a paid internship in textiles conservation to a young professional.

In connection with its long-sought Capital Campaign, the Museum consulted throughout FY 1984 with a professional fund-raising firm. An architectural firm refined conceptual plans for major expansion and renovation of the Museum's town house structure. Preliminary legal and construction management studies and related discussions with local authorities and prospective donors have produced positive results, and in January 1984, the Board of Regents officially authorized the initiation of a major fund-raising effort to produce the monies necessary for actual construction planning and execution of the concept.

EXPLANATION OF PROGRAM INCREASE:

Collections Management (5 workyears and \$100,000) - The Cooper-Hewitt has three curators to care for the Museum's permanent collections. These collections are extremely diverse in character and more than twice as numerous as the holdings of all other Smithsonian art museums combined. The curator of Decorative Arts and the curator of Drawings and Prints each face enormous workloads regarding the care and use of the collections. Study and research for exhibitions, publications, and lectures vie with duties related to collections development and public service. The support of an assistant curator will allow each department to provide the research, care, and explication of the collections without interruption, a commitment made when the Smithsonian adopted the collections of the Cooper Union Museum for the American people (2 workyears and \$46,000).

For many years, the Museum has had in its possession enormous groups of archival records which are related to the permanent collections and constitute primary documents of great value in the study of the history of design. Not counted in the inventory, these materials (referred to collectively as the Archives and Picture Files) include the George Kubler Collection, hundreds of thousands of Picture File images, thousands of photographs by Therese Bonney, and a unique color archive of business and other records of such leading designers as Henry Dreyfuss, Donald Deskey, and Lladislav Sutnar. Special grants have permitted efforts to organize and index the color and Dreyfuss materials, and

volunteers have traditionally staffed the Picture File, but many records are now largely inaccessible to the public for lack of appropriate staff to supervise their management. Until now, the Museum's librarian, interns and volunteers have managed this material. More specialized care is needed, therefore, an archivist and an assistant archivist are sought to care for these irreplaceable materials in a systematic and professional fashion and to plan future acquisitions and uses of the collections (2 workyears and \$39,000).

Finally, the Museum's responsibility to respond to public inquiries and to publish as much information as possible about its collections requires additional secretarial support for the curatorial staff and the staff editor. A secretary position is requested to meet this long-standing need (1 workyear and \$15,000).

Automation (1 workyear and \$50,000) - The Cooper-Hewitt's need for carefully coordinated automated information systems is evident both to the Museum and to the Smithsonian's Office of Information Resource Management. The Museum's diverse financial activities (development, membership, subscription and other educational programs, sales shop administration, etc.), which are managed on site by the Museum, but which require frequent exchange of information with central accounting and other offices in Washington, D. C., can be managed more efficiently and effectively with the use of labor-saving automated systems. Moreover, with permanent collections numbering over 167,000 items, the Museum can improve public access to collection information with automation capabilities. Automation planning and systems implementation will produce improved levels of productivity and increase general efficiency in many areas of Museum activity.

An increase of 1 workyear and \$50,000 will permit the Museum to hire a management analyst to determine the most efficient possible uses of existing and developing technologies in those departments and programs where such capabilities will generate the greatest cost savings and improved quality of vital information. Amounts also are included for increased communications costs between the Museum and central administrative offices in Washington, D. C., automation hardware, software, supplies and materials. These costs are expected to remain a constant element of the Museum's base in future fiscal years.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including museum shop sales, product development, membership and admission fees, donations, fund-raising events, and allotments. The allotments to date have supported salaries of the director, administrative officer and various other staff members and help defray expenses associated with special events such as exhibition openings. Specific funds are used to support various educational programs, museum shop expenses, exhibitions and publications for the Museum.

Restricted Funds - These funds are provided from grants, bequests, and other donations from individuals, foundations, organizations, or corporations for specific purposes. In FY 1985 and FY 1986, these funds will support: "Wine" (estimated expenditures of \$180,000 in FY 1985); "Fabled Cloth: Batiks from Java's North Coast" (estimated expenditures of \$25,000 in FY 1985); "Death" (estimated expenditures of \$200,000 in FY 1986); "Berlin in the 1920s" (estimated expenditures of \$50,000 in FY 1985 and \$200,000 in FY 1986); and "ManTRANSforms II" (estimated expenditures of \$50,000 in FY 1985 and \$250,000 in FY 1986).

Federal Grants and Contracts - These funds are provided by various government agencies and departments for specific program support. The Museum annually seeks funding in varying amounts from the New York State Council on the Arts for exhibition support and other programs as well. Requests for eight separate projects were submitted for

possible funding in FY 1985 (estimated expenditures of \$50,000 in FY 1985 and in FY 1986).

NATIONAL MUSEUM OF AFRICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	25	986	--	87	--	15	--	46	--	--
FY 1985 Estimate	32	1,241	3	88	--	16	--	65	--	--
FY 1986 Estimate	43	2,825	1	39	--	14	--	52	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of African Art is the only museum in the United States devoted solely to the collection and preservation, exhibition and related educational programs, research and documentation of the visual arts of Africa. Founded in 1964 as a private institution, the Museum became a bureau of the Smithsonian Institution in August 1979 following the enactment of Public Law 95-414. In 1986, the Museum will move from its Capitol Hill properties to The Mall as a part of the Smithsonian's Center for African, Near Eastern, and Asian Cultures. For FY 1986, an increase of 11 workyears and \$1,584,000 is requested to prepare for the expanded activities that will be presented in the Quadrangle, scheduled to open in 1987.

PROGRAM - The National Museum of African Art (NMAfA) endeavors to promote an interest in and an understanding of the diverse cultures of Africa south of the Sahara in the visual arts. Although the Museum's primary emphasis is on the traditional cultures of the sub-Saharan region, it also studies, accepts into its collections, and occasionally exhibits the arts of North Africa as well as the ancient and contemporary arts of the entire continent. The Museum develops and implements a variety of interpretive programs: exhibitions, lectures, tours, classes, workshops, audio-visual presentations, and publications. Each program endeavor is motivated by the esthetics of traditional African art, and the Museum actively cooperates and coordinates its activities with those organizations and institutions whose purposes are complementary.

During FY 1985 and FY 1986, the Museum's plans and efforts will be directed intensively toward its move to the Center for African, Near Eastern, and Asian Cultures in the Quadrangle. This is a sizable physical undertaking because shortly after the relocation, all programs of the Museum, including research, exhibitions, collections, public education and orientation, must be operative in time for the scheduled 1987 opening.

Research - The Eliot Elisofon Photographic Archive is one of the Museum's strongest research components. It is one of the largest archives in existence on African art, culture, and environment. Its holdings now consist of about 33,000 color slides, 35,000 black and white photographs, 75,000 feet of unedited film footage, and 50 feature films. In FY 1984, the Archive provided more than 1,500 slides or photographs for personal, academic, and publication purposes. In addition, more than 1,000 telephone and 250 written responses for visual information were serviced. Within the Museum, the curatorial and education staffs depend upon the Archive for research, exhibition and teaching purposes. In FY 1984, the Archive was able to acquire a series of five documentary films produced in 1982 by the National Ministry of Information of the Ivory Coast in consultation with African and Western anthropologists.

In FY 1984, the National Museum of African Art began a Union Catalogue Project of its African art objects that is coordinated for the entire Institution by the National Museum of Natural History/Museum of Man. The collection documentation is an invaluable resource for research work. It enables the Museum to compile and present collection information in a systematic format. The absence of a standard specialized terminology in African Art studies has been one of the most difficult aspects of research. The Union Catalogue addresses this need for standardization by utilizing terminology that is suited uniquely to the special requirements of African art research. In addition, all automated entries reflect the most current field data and reference literature, thereby assuring accurate attribution, regional and ethnic styles, and when possible, chronological classifications. Also, photographs now exist for most of the primary holdings in the collection. This project may become a model for other museums for cataloguing African art collections as well as facilitate access to objects for research purposes. The project is not only important for research, but it also has proved to be invaluable in collections management and conservation efforts. During FY 1986, the Museum plans to concentrate more intensively on research opportunities for its curatorial staff, as well as visiting research scholars.

Exhibitions - A systematic exhibition program is viewed as one of the most effective methods the Museum has to assure public understanding of African art and culture and to develop new research. Each exhibition contains objects which are considered to be the finest of their type esthetically. In FY 1983, the Museum established its first exhibition schedule covering a four-year period. In FY 1984, the Museum organized, "African Mankala," an examination of a type of African gameboard, from historical and cultural perspectives and as an esthetic form. Loans for this exhibition came from United States public and private collections, as well as from museums in Antwerp, Brussels, Hamburg, Stuttgart, and Paris. It was the first time NMAfA had successfully cooperated with major lending institutions in Europe. In FY 1985, two major traveling exhibitions have been scheduled: (1) "Praise Poems: The Katherine White Collection," one of the foremost American private collections now a part of the Seattle Art Museum that organized the tour; and (2) "Igbo Arts: Community and Cosmos," organized by the UCLA Museum of Cultural History, the first comprehensive examination in the United States of the art of the Igbo people of Nigeria. Other noteworthy exhibitions in FY 1984 were "Ethiopia: The Christian Art of an African Nation," circulated by the Smithsonian Institution Traveling Exhibition Service, and an exhibition of selections from NMAfA permanent collection, titled "Pattern and Form in African Art." Also in FY 1984 and FY 1985, a series of small, rotating exhibitions were and will be organized by the Museum focusing on individual objects in the Museum's collection.

During the first part of FY 1986, the Museum will be operating at its location on Capitol Hill. Exhibitions already planned for that site include: "Bamana Masks and Figure Sculpture from the Western Region of the Sudan" to be organized by the Museum, and an exhibition of "Tabwa Art" organized by the University of Michigan Museum of Art, Ann Arbor.

Development of Collections - The Museum's permanent collection of 6,100 objects represents hundreds of ethnic styles. During FY 1984 and FY 1985, collection development has led and will continue to lead the list of priorities on the Museum's agenda. The art object is as fundamental to the work of an art historian as the scientific specimen is to the work of a scientist. Research, exhibitions, education and outreach programs, and publications flourish when a collections development program is vital and thriving. Many of the cultures of Africa south of the Sahara present unique opportunities for investigation and for understanding the meaning and cultural context of a variety of objects and artistic traditions. To accomplish this, an active acquisition program is essential since cultural changes are taking place quickly throughout Africa.

In FY 1984, the Museum acquired 140 works of art that included a donated private collection of 62 examples of N'Debele beadwork from Southern Africa, and a donated pri-

vate collection of 26 metal objects from the western region of the Sudan. In addition, private donated funds were used for the acquisition program. Of the total 140 acquisitions, nine were purchased with appropriated funds. Important purchases from appropriated funds included: a Nigeria, Yoruba figurative cult staff; a Nigeria, Yoruba divination board; a Guinea-Bissau figurative staff finial; a Republic of the Sudan, Topossa pendant; a Zaire Kuba, applique textile and a Zaire bride price in the form of an exaggerated blade.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 11 workyears and \$1,584,000 is requested to prepare for the expanded activities that will be presented in the Quadrangle, scheduled to open in 1987.

Exhibitions (5 workyears and \$1,032,000) - For FY 1986, an increase of 5 workyears and \$1,032,000 is requested to design and install the inaugural exhibitions in the Quadrangle that will be opened to the public early in 1987. This increase provides funds of \$824,000 for exhibition installation related expenses, an allowance of approximately \$50.00 per square foot of exhibit space; \$80,000 for informational and educational materials; and \$128,000 for personnel costs. Three major exhibitions to be installed will be (working titles): "Art in African Life," "African Textiles," and "African Art from the Permanent Collection." There also will be smaller displays in the Orientation Gallery and Focus Gallery.

The proposed increase will support the costs associated with borrowing objects of the highest esthetic quality from European, American and African collections, the majority of which have never been seen in the United States, for the exhibition, "Art in African Life," and will ensure that this exhibition, as well as all exhibitions throughout the new museum, are designed handsomely, installed properly, secured and lighted. Definitive exhibition catalogues will accompany the "Art in African Life" and "African Textiles" exhibitions. Informational brochures, gallery guides and text panels will be produced for all exhibitions. Photograph panels illustrating aspects of African art, culture and environment will be displayed in the Orientation Gallery as well as throughout all public areas of the museum. In addition, audio-visual programs will be produced and installed for "Art in African Life" and "African Textiles" to further enhance the viewer's perception of the art in its cultural context.

An exhibit production assistant, a carpenter and a shop foreman will be needed to become part of the permanent staff to assist in exhibition construction and installation. Additional positions for a writer/editor with a familiarity with specialized terminology associated with non-Western visual and cultural traditions will be needed to assist in the preparation of text panels, caption labels, catalogues and informational brochures that accompany exhibitions. The addition of a graphics designer will ensure that materials of this kind are attractively designed and communicate the substance of each exhibition. This designer will assist in the preparation of maps, education program flyers, museum brochures and public orientation materials.

Collections Management (1 workyear and \$38,000) - An increase of 1 workyear and \$38,000 is requested in FY 1986 for a photographer who will provide an ongoing visual record of collection material, a record essential to collections management, conservation, and exhibitions, as well as to produce photographs of publishable quality for catalogues, brochures, exhibition guides, press kits, and other printed material produced by the Museum (\$28,500). The services of two temporary museum technicians will be required to assist in the inventory of collection material that will precede and follow the move of the collection to the new facility (\$9,500).

Education and Public Orientation (3 workyears and \$199,000) - The Museum of African Art plans to increase the scope of its education programs to accommodate the increase in visitation that is projected when the move to the Quadrangle takes place. For FY 1986,

an increase of 2 workyears and \$91,000 is requested for an education specialist and a docent (intern) coordinator. In addition to funding the new staff (\$52,000), the requested increase will defray the cost of developing and producing new educational programs for adult and secondary school groups including topics for conferences and symposia; outreach programs to schools and senior citizens centers; and expanded docent training program and a lecture and film series. Printed materials, such as special exhibition teaching manuals, workshop guides, docent handbook, intern handbook and tour scheduling and program brochures, also will be produced in connection with the various education program activities.

An increase of \$62,000 also is requested to produce a general museum brochure, a calendar of events, information flyers, press releases and press packets for the opening exhibitions, as well as to fund the necessary mailings costs of such material. This proposed increase also would provide funds for the production of public service announcements for both radio and television, in cooperation with the Smithsonian Office of Public Affairs.

Finally, an increase of 1 workyear and \$46,000 is requested for an administrative assistant in the Office of Assistant Director to help meet the increased administrative responsibilities associated with the move and a temporary clerk-typist to assist in the Director's Office for one year during the period preceding and immediately following the move to the new facility. At present, there is only one secretary to provide such assistance to both the director and the assistant director. It is anticipated that additional help will be needed to handle telephone inquiries, compilation of lists for inaugural activities, and the increased volume of correspondence that will result from the international aspect of the opening exhibitions. This increase will provide funds for copying equipment, typewriters and other office equipment.

Research (2 workyears and \$63,000) - The increase of two workyears and \$63,000 is needed for FY 1986 for a curator of Central African art and a secretary for the entire curatorial department. The curatorial staff at NMAfA is divided into areas of special expertise according to a cultural/regional division. The addition to the staff of a curator of Central African art will strengthen the existing curatorial staff which currently lacks specialization in that area. Two of the inaugural exhibitions will include material from that region of Africa and such additional expertise on the staff will assure that these exhibitions meet the highest professional standards.

Collection Acquisitions (\$100,000) - The Museum has a base funding of \$30,000 for acquisitions. At its present level of funding, the Museum cannot systematically fill gaps within the collection of objects representative of major ethnic styles from the Guinea Coast and Central Africa. Continuing the present course has several deleterious consequences. Scholarly research is impeded in an institution that has a unique cultural role nationally and internationally. Donations of objects are attracted to more active and ambitious museum acquisitions programs. The Museum risks forfeiting its position of the right of first refusal to primary material available on the market. The ability of the Museum to organize substantive, quality exhibitions primarily or entirely from its own holdings with increased frequency, and at considerably less cost than loan exhibitions, becomes more difficult.

There are works of African art that are available and would greatly strengthen the collection ranging in price from \$16,000 to \$25,000. While these objects would be important additions to the collection, it should be noted that the price of rare pieces of traditional African art now available are in the range of \$100,000 to \$250,000. An amount of \$100,000 will provide the Museum with stable base funding of \$130,000 for acquisitions.

Automation (\$152,000)- At present, NMAfA has no office automation equipment. Therefore, the amount requested for FY 1986 will provide basic automation equipment to

permit registrarial and curatorial staff to participate in the central collection information system; to more efficiently perform functions such as budget control, filing and personnel record keeping; and to provide word processors for clerical, public information, education and editorial staff.

The increase would allow the purchase of 18 terminals, 13 printers, software and training for staff members. The specific equipment that is required has been determined by the Smithsonian Office of Information Resource Management after an in-depth review of the needs of participating departments.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from the Museum's share of sales in the museum shop, membership contributions, courses conducted in cooperation with metropolitan area public education institutions, and allotments. They are used to support the cost of certain museum publications, opening of new exhibitions, and to defray travel costs associated with meetings of the Board of Trustees. An allotment was provided in FY 1984 and in FY 1985 for the mortgage payments at the present location on Capitol Hill and to support insurance premiums plus the salary and benefit costs of three employees.

Restricted Funds - Funds provided here are in the form of grants and gifts from individuals, foundations, organizations or corporations for specific purposes. Generally, they provide support for a particular project or exhibit. For example, in FY 1984, a grant received from the Women's Committee of the Smithsonian National Associate Program and the Friends of the National Museum of African Art provided support for the purchase of five Ivory Coast documentary films. These films provide a sound contextual basis for understanding the most important Ivory Coast visual traditions. Funds from various individuals, organizations and corporations provided support for the Education Department which, among its programs, conducts credit courses each semester in cooperation with local universities (estimated expenditures of \$19,000 in FY 1985 and \$22,000 in FY 1986). Gifts and grants also are anticipated to support a special publications program, the first volume of which is titled African Art in American Collections (estimated expenditures of \$46,000 in FY 1985 and \$30,000 in FY 1986). The Museum is actively seeking outside support from various sources to acquire or supplement the acquisition of important major works for the collection as well as to support its education, research and exhibition programs.

ANACOSTIA NEIGHBORHOOD MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS										
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS		
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount	
			Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	19	828	1	32	--	--	--	2	--	--	--
FY 1985 Estimate	19	863	1	38	--	--	--	1	--	--	--
FY 1986 Estimate	19	863	1	39	--	--	--	1	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Founded in 1967, the Anacostia Neighborhood Museum (ANM) serves as a national resource for the exhibition, scholarly and applied research, historical documentation, and interpretive and educational programs related to the black experience in American history. In addition to its off-the-Mall public and exhibition space at 2405 Martin Luther King, Jr., Avenue, the Museum maintains a facility at Fort Stanton Park, in the Southeast section of the District of Columbia, for the management of artifacts and the research, design and fabrication of exhibits. No program increase is requested for FY 1986.

PROGRAM - The Anacostia Neighborhood Museum serves as a national prototype in its scholarly and applied research, historical documentation, exhibition, interpretation and educational programs as they relate to the experience of black Americans and their contributions to science, history and the arts. It especially provides a continuing museum experience for those individuals and groups of persons who, historically, have seen themselves excluded from the presentations of our State and National museums. The Anacostia Neighborhood Museum, therefore, serves as a cultural resource for the people of Anacostia. In addition to its service to and involvement with its identifiable local constituency, the Museum also serves as a source of materials on black American history for similar institutions around the Nation and demonstrates to other museums and neighborhoods new and innovative ways of inviting non-traditional museum audiences into the worlds of science, history and the arts.

In fostering closer collaboration with other Smithsonian history and art museums, ANM concentrates on American history from a black perspective resulting in cooperative efforts in research, systematic information collection and retrieval, education, collection, and curation programs. An extensive network with other museums, the academic community, the Library of Congress, archival repositories, universities and other research institutions enhances its research and borrowing capabilities, allowing the Museum to offer diverse audiences major exhibitions of national importance and scope.

Research - During FY 1984 and FY 1985, research department staff vigorously pursued a program of scholarly and applied research that serves as a catalyst for and undergirds the Museum's exhibitions, public information and publishing activities. Enhanced by photographs from the collection of the Smithsonian Archives, staff prepared the manuscript for "Kind Regards of S. G. Brown," presenting selected poems of Solomon G. Brown, an

Anacostian and for more than fifty years (1852-1906) an employee of the Smithsonian Institution. Staff also completed the research, scripting, and artifact search to support the design and production of "Black Women: Achievements Against the Odds," an exhibition that vividly presents the adversities, contributions, and varied roles of a representative group of American black women. Organized in nine discrete units from the colonial era to the modern period, the exhibit begins with the noted slave-poetess Phillis Wheatley and concludes with the distinguished former Congresswoman Barbara Jordan. A panel show designed as a traveling exhibit offers a general museum audience succinctly scripted bio-historical facts, appropriate quotations, and little known vintage photographs. Together, they tell the story of the struggle of black women who have overcome sexism and racism, and who are distinguished by their accomplishments. Continuing to concentrate on the Afro-American experience, research has been completed, and artifacts located and identified, that will facilitate the scripting and enhance the design of a major exhibition concerning the era of American history that is known as the "Harlem Renaissance" or the "New Negro Movement."

Exhibitions - In FY 1985 the Museum will present the "Black Women: Achievements Against the Odds" and "The Renaissance: When the Negro Was In Vogue." As a sampling of the flowering of this literary period of the 1920s, and its subsequent impact on the arts, this important exhibit explores and highlights the influences of the leading protagonists and supporters of the "New Negro Movement." Greatly enhanced by loans from major archival repositories, the Library of Congress, and private collectors and patrons of the arts, this show will also feature audio-visual presentations of interest to a wide and varied museum audience.

Exhibit plans for FY 1986 and beyond include continued emphasis on Afro-American themes and subjects that are of historical interest. Among the subject areas to be explored are: "Trumpeters of the Lord," an overview of the historic role of the 19th-century black church; "Black Inventors"; and a retrospective showing of the photographic work of Prentice H. Polk (b.1898), who, like C. M. Battey, concentrated on photographic studies and portraits of the simple folk and rural folk-culture in the vicinity of Tuskegee Institute, Alabama.

Public Education and Orientation - During FY 1984 and FY 1985, staff, with the assistance of volunteers, conducted tours for elementary and secondary school groups, gave lectures to museum audiences and academic and professional groups, developed special presentations and interpretive programs to amplify and support exhibits, and began a new program, "The Lunch Box Forum," that brought together at ANM a speaker, community residents, colleagues from other Smithsonian museums and other interested individuals.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Funds are provided by an annual allotment to cover the salary and benefits costs of a woodcrafter. During FY 1985, this woodcrafter will work on the "Harlem Renaissance" exhibition, the largest in the history of the museum. Additional monies are derived from exhibit rentals, and donations, and are used to purchase supplies and materials to support the Museum's programs and community outreach activities.

Restricted Funds - These are in the form of gifts from individuals, organizations and corporations and are designated for the support of specific Museum programs.

ASSISTANT SECRETARY FOR PUBLIC SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General FTP**	Amount	Special Purpose FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	17	789	24	1,147	-	286	-	69	-	-
FY 1985 Estimate	17	822	27	1,208	-	149	-	-	-	-
FY 1986 Estimate	18	872	30	1,404	-	150	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

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, and folklife programs and advises the Secretary on policy issues and program planning for Public Service activities. The Assistant Secretary also serves as the director of the International Center. Included in this line item are the Office of Telecommunications, the Visitor Information and Associates' Reception Center, and the Office of International Activities. For FY 1986, an increase of 1 workyear and \$50,000 is requested for the Visitor Information and Associates' Reception Center to support the Intern Information and Registration Service (1 workyear and \$31,000); and to upgrade the information and orientation services available to visitors (\$19,000).

PROGRAM - I. Immediate Office, Assistant Secretary for Public Service: With base resources of 5 workyears and \$252,000, the Office of the Assistant Secretary for Public Service provides coordination and supervision of the Institution's 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, and the Office of International Activities (which are all included in this line item); the Smithsonian Institution Press; the International Center; Smithsonian magazine; the Office of Folklife Programs; the Office of Smithsonian Symposia and Seminars; and the Office of Elementary and Secondary Education. (The Office of International Activities had been transferred organizationally from the Museum Programs to the Public Service activity during FY 1984.)

The Assistant Secretary for Public Service also serves as director of the recently established International Center of the Center for African, Near Eastern, and Asian Cultures. In this role, the Assistant Secretary oversees the planning and development of the cross-cultural and interdisciplinary programs to be initiated by the Center and serves as the chairman of the International Center Planning Group.

II. Office of Telecommunications: With base resources of 5 workyears and \$211,000, the Office of Telecommunications assists in developing plans for Smithsonian policies and objectives in telecommunications. The Office also develops and produces television and radio programs and films for distribution to public and commercial broadcasting outlets, as well as to educational and civic organizations.

The Office produces three major program series. "Here at the Smithsonian," an award-winning series of two-minute video features is seen on 65 television stations nationwide. "Radio Smithsonian," a weekly, 30-minute series heard on 70 public and commercial radio stations in the United States is broadcast on the Voice of America and United States Armed Forces radio network overseas and in Canada. "Smithsonian Galaxy," the popular series of short radio features reaches 230 stations twice a week in the United States, Canada, New Zealand, and the Virgin Islands; the series also is broadcast on the United States and Canadian Armed Forces Radio Network overseas. "Smithsonian World," a new Public Broadcasting Service series of prime-time hour-long specials co-produced by WETA-TV and the Smithsonian Institution, premiered on public television stations throughout the country in January 1984. The series' second season will begin in October 1984.

During FY 1984, the production of "The Work of Peace," commemorating the bicentennial of the Treaty of Paris, was completed. The film will be distributed widely throughout the United States and abroad to mark the anniversary of the Treaty. Two films to commemorate the Harry S Truman Centennial--a short film on the Berlin Airlift for an exhibit at the National Air and Space Museum, and "Truman: A Self-Portrait in Film" for the National Museum of American History. Other major film and video projects finished in FY 1984 included: "Yesterday's Tomorrows: Visions of the Future on Film," to accompany the Smithsonian Institution Traveling Exhibition Service (SITES) exhibit "Yesterday's Tomorrows"; and a half-hour videotaped program featuring Pulitzer prize-winning author Edmund Morris in a conversation about his work, The Rise of Theodore Roosevelt, with the National Portrait Gallery. The Office also produced 15-minute film on Washington silk-screen artist Lou Stovall, produced by the Anacostia Neighborhood Museum; and a five-minute visitor orientation videotape produced for the Visitor Information and Associates' Reception Center.

The Smithsonian has received national and international recognition for its broadcast program series and films. Recent awards presented to the radio and television series include the 1984 Houston International Film Festival Gold Award (for "Here at the Smithsonian"), and the National Association of Government Communicator's Gold Screen Award for 1984 (received by both "Radio Smithsonian" and "Smithsonian Galaxy"). "American Picture Palaces," a 1983 film production documenting the "Golden Age" of movie theaters of the 1920s and 1930s, received 14 awards including Best Film of the Festival from the Fourth International Festival of Architecture and Planning, the Red Ribbon from the American Film Festival, and the Gold Award of the International Film and TV Festival of New York. "Mirror of Kings: Tales from Kalila Wa Dimna," a 1982 animated film that tells the story of an ancient fable used to teach morals and princely behavior to rulers--produced to accompany the SITES exhibition "Renaissance of Islam: Art of the Mamluks"--received three awards including the 1983 Columbus International Film Festival CHRIS Bronze Award. "In Open Air: A Portrait of the American Impressionists," a 1982 production on the growth of Impressionist painting in late 19th-century America received the CINE Golden Eagle and the Bronze Cindy from the Information Film Producers of America.

Film projects currently in production include two related films on coral reefs--an hour-long program developed for the Public Broadcasting Service and a 15-minute study for inclusion in a National Museum of Natural History exhibit. Work also has continued on a film production to document the creation, development, and construction of the Quadrangle complex.

III. Visitor Information and Associates' Reception Center: With base resources of 2 workyears and \$159,000, the Visitor Information and Associates' Reception Center (VIARC) serves as the focal point for public information about Smithsonian exhibitions, events, programs and activities. VIARC's mandate is to administer a broad range of centralized information and assistance programs. Many of the Center's programs operate seven days a

week and involve the coordination and direction of large numbers of volunteers who constitute a primary source of public information and behind-the-scenes support for the Institution's information programs and for staff project assistance.

Seven-day services provided by VIARC include the staffing of information desks in eight museums by a corps of 400 volunteer information specialists; the operation of the primary telephone service for general information about the Institution, its exhibitions, programs and activities; and the provision of recorded telephone information 24-hours a day (Dial-A-Museum and Dial-A-Phenomenon). VIARC also serves as the primary referral point for public mail received by the Smithsonian. Volunteer lecturers present a variety of 30-minute group orientation slide/lecture programs as an overview to the Institution. Behind-the-scenes tours of the Smithsonian Institution Building, which outline its history, use and furnishings, are provided by docents on a regular weekend schedule. During summer months of peak visitation, additional information services are provided to visitors from mobile units located on the Mall.

VIARC is responsible for the Independent Volunteer Placement Service, the registration and placement program for the Institution's workforce of approximately 800 volunteers working behind the scenes throughout the Smithsonian, and conducts an annual Institution-wide volunteer survey which provides necessary statistical data and forms the basis for the Institution's annual acknowledgment of volunteer support. A similar program was initiated in FY 1984 for the interns working throughout the Institution. VIARC also developed a Handbook for Smithsonian Interns and two booklets, "Internships and Fellowships" and "Housing Information for Interns and Fellows," for this program.

In order to strengthen the Institution's ability to inform, orient and serve the millions of visitors to the Smithsonian each year, the Visitor Information and Associates' Reception Center has developed a multifaceted program to upgrade the different visitor services provided by the Institution. One facet of this plan has been the establishment of a nationwide pre-visit education program, coordinated with the Washington metropolitan area and national travel and tourism industry. During FY 1984, VIARC represented the Institution at numerous regional, national and international tourism marketplace functions, including World Travel Market, which attracted 20,000 journalists, travel writers and tour planners. As a result, the Smithsonian has received increased publicity in travel trade publications. A booklet, Planning a Smithsonian Visit: A Guide for Groups, was produced as a pre-visit information tool.

IV. Office of International Activities: With base resources of 5 workyears and \$200,000, the Office of International Activities coordinates international aspects of Smithsonian research and museum programs and maintains liaison with appropriate agencies of the United States Government and foreign governments, international organizations and private institutions. The Office obtains passports and visas for Smithsonian travelers; assists in establishing necessary arrangements and contacts to facilitate research in other countries; and provides assistance to dignitaries, scholars and students from other countries participating in Smithsonian programs in the United States.

During FY 1983, the Office provided advice and information for more than 286 Smithsonian projects and hosted 361 distinguished visitors from other countries. Since FY 1982, the Office has published a Handbook for International Activities to serve as a guide for Smithsonian personnel involved in international projects and also has initiated a quarterly newsletter to provide current information on international research exchanges to all concerned staff.

During FY 1985 and FY 1986, the demand for the services provided by the Office of International Activities is expected to increase dramatically with the heightened emphasis on international programs and research exchanges developed by the International Center and other program units of the new Center for African, Near Eastern, and Asian Cultures.

EXPLANATION OF PROGRAM INCREASE: For FY 1986, an increase of 1 workyear and \$50,000 is requested for the Visitor Information and Associates' Reception Center to support the Intern Information and Registration Service (1 workyear and \$31,000); and to upgrade the information and orientation services available to visitors (\$19,000).

Intern Information and Registration Service (1 workyear and \$31,000) - The Intern Information and Registration Service was initiated in FY 1984 to establish a central registration system to maintain intern records and to provide a central clearinghouse for the orientation and information needs of the hundreds of students working as Smithsonian interns. The initial support to begin this program was provided with base funding. However, the growing responsibilities of administering this program for the Institution require the addition of a full-time position to keep up with the increased workload required to support the approximately 400 interns in FY 1986.

The program coordinator for the Intern Information and Registration Service (1 work-year and \$22,000) would develop updated information on internships for public distribution; implement and maintain an automated central registry of intern records, providing statistical analyses of this data; and serve as corresponding secretary and archival officer for the 35-member Smithsonian Internship Council. The coordinator also would provide essential program support, including the preparation and updating of a handbook and other printed guidelines for interns, issuing security credentials, and developing orientation procedures. An amount of \$9,000 also is requested to develop computer applications for this and other VIARC activities.

Upgrading Visitor Services (\$19,000) - In FY 1985 and FY 1986, VIARC plans to continue its program to upgrade visitor services at the Smithsonian through the pre-visit education program and the development of a graphic information system for visitors. VIARC will represent the Institution at tour and travel industry trade shows to provide the travel industry with pre-visit information on the Smithsonian; work with the American Bus Association to improve information services for visitors who arrive as part of a motorcoach tour; develop and support better information services for Washington metropolitan area hotels and motels; provide pre-visit information and other materials for school groups to teachers throughout the United States; and coordinate the further design and implementation of improved graphic orientation systems for visitors.

For the pre-visit program, an amount of \$8,000 is sought to develop and print brochures and press kits for distribution at tour and travel industry marketplaces and by mail; to support Smithsonian membership in tour and travel associations; to pay registration and exhibition fees at industry marketplaces; and to rent and maintain video monitors used to show the visitor orientation videotape presentation at marketplace functions and in the Mall museums.

In FY 1984, VIARC requested the Department of Urban and Regional Planning at George Washington University to undertake the design of a graphic orientation system for Smithsonian visitors as a class project. The final report and recommendations of this project, presented to VIARC in May 1984, will serve as the basis of further development of a graphic visitor information system. For FY 1986, an amount of \$11,000 is requested to conduct pilot testing of proposed recommendations, such as signs, kiosks and information booths on The Mall.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. Immediate Office, Assistant Secretary for Public Service: These funds are provided by an allotment which will cover the salary and benefits of one full-time staff member. In FY 1984, allotments were provided to support expenses associated with the Edinburgh International Festival in Scotland and the "Aditi" exhibition.

II. Office of Telecommunications: These funds are provided by allotments which support eight full-time staff members and expenses associated with the production of educational and informational materials for television, film and radio. In addition, a nominal amount of subscription fees is received to help cover distribution costs. The Office produces three ongoing series of programs which reach the American public regularly through radio and television. "Here at the Smithsonian" and "Radio Smithsonian" are financed partly by an allotment and partly by subscriber fees. "Smithsonian Galaxy" is supported by an allotment.

III. Visitor Information and Associates' Reception Center: These funds are provided by an allotment and are used primarily to support 18 full-time staff members associated with the Center's work as the Institution's public service bureau responsible for the information and assistance activities described in the Program Statement.

Restricted Funds - Office of Telecommunications: A corporation grant enabled the Office to supervise production of a film on the research of tropical reefs in the Caribbean (estimated expenditures of \$58,000 in FY 1984).

SMITHSONIAN INSTITUTION PRESS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	29	1,044	33	11,770	--	--	--	42	--	--
FY 1985 Estimate	29	1,085	33	12,460	--	--	--	--	--	--
FY 1986 Estimate	29	1,085	33	13,045	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Press is responsible for the editing, design, production, and distribution of printed materials prepared by staff scientists, historians, and curators. Such materials include research monographs, technical and scientific series, exhibition catalogues for Smithsonian museums, educational pamphlets, and informational leaflets. The Press also has responsibility for the development, production, business, and marketing functions of the Institution's recording program. Additionally, the Press acts as the official agent of the Smithsonian Institution in the procurement of printing services from the United States Government Printing Office in creating government forms, guides, instructions, and the like, as well as providing professional assistance to Smithsonian authors upon request. No program increase is requested for FY 1986.

PROGRAM - The Smithsonian Institution Press, in its official capacity, serves as the publishing arm of the Smithsonian, meeting the Institution's requirements for quality book publication for both Federally-funded and Trust-funded activities. The Federal publication activity of the Press is a fundamental extension of the Smithsonian's basic research activities. The scientific, technological, and historical monographs published by the Press make the results of research conducted by Smithsonian curators and staff experts available to libraries, museums, scientific institutions, and interested members of the public throughout the United States and abroad. In addition to publishing research findings, the Press edits and designs exhibition catalogues, educational pamphlets, and informational leaflets that serve the millions of visitors to the Smithsonian in Washington, D.C., and the extensive programs conducted all over the Nation.

Serving as an academic press, it also publishes, using nonappropriated Trust funds, both scholarly and general trade books relating to the collections or research interests in the Smithsonian. As a result, the Press undertakes the responsibility for securing quality manuscripts, as well as editing, designing, marketing and distributing these books domestically and internationally.

The Direct-Mail Books Division publishes popular books based on Smithsonian collections and research, primarily for sale by direct mail to National and Resident Associate members of the Smithsonian and through the Smithsonian Museum shops. The Recording Division produces and sells sound recordings relevant to the collections and performing arts interests and research and study efforts of the Smithsonian. Both the Direct-Mail Books and Recording Divisions are financed directly with nonappropriated Trust funds.

The Press also edits, designs, and produces Smithsonian Year (the Institution's annual report to the Regents and the Congress). In addition, the Press is responsible for the procurement and distribution within the Institution of a variety of necessary manuals, reports, and directories, including copies of congressional materials and reports from government agencies.

Basic scientific research results published by the Press in FY 1983 with Federal funds were Smithsonian Contribution series in a wide range of categories including: "Inclusions in the Allende Meteorite" (Earth Sciences); "Systematics and Ecology of the Sea-urchin Genus Centrostephanus (Echinodermata: Echinoidea) from the Atlantic and Eastern Pacific Oceans" (Marine Sciences); "Geology and Paleontology of the Sea Creek Mine, North Carolina" (Paleobiology); and "Paelaemonid Shrimps from the Amazon Basin, Brazil," (Crustacea: Decapoda: Natantia). FY 1984 publications included: "Field and Laboratory Investigations of Meteorites from Victoria Land, Antarctica" (Earth Sciences); "The Carnivora of the Edson Local Fauna (Late Hemphillian), Kansas" (Paleobiology); "Ecology and Social Organization of the Maned Wolf (Chrysocyon brachyurus)" (Zoology); and "United States Women in Aviation, 1919-1929" (Air and Space).

Federal publishing plans for FY 1985 and FY 1986 will be determined by the Press' client bureaus and offices, which depend in turn on the allocation of funds made available to these bureaus for publishing purposes.

Books published by the Press in FY 1984 with nonappropriated funds include: The Eagle Aloft: Two Centuries of the Balloon in America; The Birds of China; One Hundred Masterpieces of American Painting from Public Collections in Washington, D.C.; Shrimps, Lobsters, and Crabs of the Atlantic Coast; African Islam; Treasures of the Smithsonian; and Raised in Clay: The Southern Pottery Tradition. Books planned for FY 1985 include Phantom Combat History; Sculpture and the Federal Triangle; American Issue: The U. S. Postage Stamp, 1842-1869; The World's Whales; and Space, Time, Infinity: The Smithsonian Views the Universe. Additionally in FY 1984, the Press' Recordings Division published the album "Big Band Jazz" and will produce in FY 1985 the album "American Popular Music."

During FY 1983, the Smithsonian book program continued to receive acclaim for its editorial, design, and production capability and was accorded recognition by the National Association of Government Communicators (Blue Pencil Awards); the Association of American University Presses (AAUP Book Show Award); Art Directors Club of Metropolitan Washington; American Association of Museums (Museum Publications Competition); and the Aviation/Space Writers Association.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are derived from the sale of Trust-funded books, royalties, and special publishing services. They support nine staff members within the University Press Division, 15 members of the staff of the Direct-Mail Books Division, and nine members of the Recording Division staff. These funds also support the necessary services required to develop, market, warehouse, and distribute records and scholarly and general-interest books, which are published in connection with the Institution's research, collections, exhibitions, and other programs.

Long-range plans call for gradual growth of the University Press Division from 30 to 40 books a year to about 75 books a year. Emphasis will be placed on scholarly publications with major expansion in anthropology, music, art and art history, American studies, and museum management. Careful attention will continue to be given to electronic publishing (data base retrieval) and video cassettes/discs.

The Direct-Mail Book Division will examine whether it should expand from one or two popular books a year to three or four. This determination will be based on careful

market analysis. The Recordings Division, which is now operating efficiently, will continue to produce one or two popular record packages a year. In addition, the program will explore the feasibility of releasing two or three scholarly, archival records a year.

THE INTERNATIONAL CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
FY 1984 Estimate	--	--	1	146	--	--	--	--	--	--
FY 1985 Estimate	2	100	8	437	--	--	--	1,770	--	--
FY 1986 Estimate	22	850	9	480	--	--	--	1,486	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The International Center is an important centerpiece in the development of the Institution's programs for the new Center for African, Near Eastern, and Asian Cultures. The role of the International Center within the Quadrangle will be to create cross-cultural and interdisciplinary programs to promote greater awareness and understanding of the different cultures of the peoples of Africa, the Near East, and Asia. For FY 1986, an increase of 20 workyears and \$750,000 is requested to establish basic program funding for the research, exhibition, and other scholarly and educational programs of the International Center. Of this amount, \$478,000 is sought for the personnel costs of the 20 positions requested, and \$272,000 is required for program costs in the planning and initial operations of the Center's activities.

PROGRAM - Established in October 1983, the International Center of the Smithsonian's new Center for African, Near Eastern, and Asian Cultures will conduct scholarly research and coordinate educational programs on natural and cultural history and conservation issues of worldwide concern, in order to promote greater awareness and understanding of the cultures of the peoples of Africa, the Near East, and Asia.

The International Center will coordinate collaborative research projects involving Smithsonian scholars and scientists, and scholars from other American and foreign institutions. Based on this research, the Center will sponsor international symposia; coordinate exhibitions and performance programs, produce a variety of educational materials and publications, and provide information on international historical, cultural and scientific subjects through the development of an automated video disc system. The Center's facilities in the Quadrangle will include: an exhibition gallery, an information and reference center, research and administrative offices, audio-visual facilities, a seminar room and classrooms.

The Center's integrated program of research, exhibition, public information, educational outreach, and publication will seek to demonstrate the importance of recognizing and conserving the diversity of life and life support mechanisms on the Earth. International Center efforts to delineate, analyze and examine worldwide natural and cultural ecological problems will address areas of immediate, practical concern and theoretical complexity in preserving unique physical and cultural environments. Of particular interest will be the conservation of endangered species; historic sites, monuments and artifacts; the quality of the physical environment; and living human cultures. The concept of conservation integrates those critical issues most relevant for dialogue among United States and foreign representatives under the aegis of the Smithsonian. The

International Center will facilitate the systematic sharing of conservation resources, insights, and techniques that have developed around the world in local, regional, national, and international settings.

The Assistant Secretary for Public Service serves as the director of the International Center. In this role, he oversees the planning and development of the Center's programs and serves as chairman of the International Center Planning Group. The planning group, including representatives from the Offices of the Assistant Secretaries for Administration and Public Service, the National Museum of Natural History/Museum of Man, and the Office of International Activities, has advised on many aspects of the Center's program development and helped to formulate strategies for its implementation. The planning group also has benefited from the guidance of the International Center Advisory and Quadrangle Committees and from the input of staff members in other bureaus.

The International Center has begun to examine scholarly trends of natural and cultural conservation research to determine programming themes for its first four years. This data, gathered systematically from scholars and scientists both within and outside of the Institution, will provide the foundation on which the direction and program emphasis of the Center will be formulated.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 20 workyears and \$750,000 is requested to establish basic Federal program funding for the research, exhibition, and other scholarly and educational programs of the new International Center. Of this amount, \$478,000 is sought for the personnel costs of the 20 positions requested, and \$272,000 is required for program costs involved in planning and implementing the initial operations of the Center. In FY 1985, initial program support for the Center's operations will be provided by anticipated Federal funding of 2 workyears and \$100,000, supplemented by unrestricted general Trust funds.

Research (4 workyears and \$226,000) - Research on the interdependent relationships between human cultures and their natural environments will form the basis for all of the International Center's programs and activities. The International Center will formulate plans and draft proposals for collaborative research in several countries in Africa, the Near East and Asia. The projects developed in these countries will serve as models for exploring the intricate interdependence of cultural practices, natural resources and the environment. It is anticipated that collaborative research and technical assistance in these nations will result in a series of International Center exhibitions, performance programs, symposia and publications to share the results of the research with a broad international audience. The International Center will also serve as the focal point for a consortium of domestic and international institutions involved in natural and cultural conservation, to facilitate dialogue between scholars and scientists worldwide.

The International Center plans to establish multidisciplinary research teams to work in the field for portions of each year. It is anticipated that at least three teams of researchers will be supported at any time, devising and implementing model research projects abroad, as well as developing programs to be produced at the Smithsonian in future years. These teams will be designed so that Smithsonian and other American scholars will work in collaboration with scholars from the host countries, providing an opportunity for all to benefit from the innovative approaches and perspectives of the others. As part of their projects, Smithsonian researchers also could work with natural scientists and cultural workers from the host country to establish archives, develop effective fieldwork research strategies, or preserve natural and cultural artifacts in ways that would be appropriate for that particular region.

For FY 1986, a research coordinator, assistant research coordinator, and research assistant (3 workyears and \$105,000) are required to develop themes for research and

programming. These staff members also would identify and match the research priorities of Smithsonian staff and the needs and interests of the participating countries, and to develop strategies for collaborative long- and short-term research projects, including the selection of multidisciplinary field research teams. A consortium officer (1 workyear and \$34,000) would be hired to coordinate the research and informational exchanges between the International Center and other consortium members and to permit the Center to function as a clearinghouse for information on natural and cultural conservation. A further amount of \$87,000 is requested to support three field research teams in FY 1986, including research contracts, travel, equipment rental and supplies.

Exhibitions (3 workyears and \$179,000) - As part of the "Festival of India" (a series of events on Indian culture to be presented across the United States in FY 1985) the International Center is currently working with the National Museum of Natural History and the Office of Folklife Programs on the production of a unique exhibition, "Aditi: A Celebration of Life." "Aditi," displaying 1,500 objects and sponsoring live presentations by 40 traditional craftspeople and performing artists, will illuminate not only the world of the child and his development in traditional Indian society, but also define the folk traditions of India, their beauty and value to the culture.

Other programs planned include an exhibition on the natural and cultural ecology of arid land settlements, which may be mounted in conjunction with an international symposium, performance program, publication, film series, and the development of educational materials; and an exhibition on the uses and cultural significance of bamboo, to be coordinated with the international "grasses" symposium by the National Museum of Natural History in August 1986. Future exhibitions will be developed to present the results of the Center's research in different aspects of cultural and natural conservation. The same theme may be treated in more than one exhibition in order to introduce different perspectives and present different emphases to the same topic. For instance, if two exhibitions were developed on arid land settlements, one could address the topic as an overview of the experiences of these communities in Africa, the Near East and Asia; the second exhibition could focus more specifically on one particular isolated settlement.

For FY 1986, the development of basic exhibition design and production capabilities requires the hiring of an exhibition coordinator, a designer, and an editor (3 workyears and \$74,000). A further sum of \$105,000 is sought for essential program support, including shipping, insurance, security, and production of exhibition catalogues.

Public Information and Education (4 workyears and \$98,000) - Educational materials on topics of concern to the International Center and participating countries will be developed in cooperation with scholars from these countries to insure that these materials reflect the culture from its own perspective. Publication of a series of filmstrips on these cultures, accompanied by tape cassette recordings and booklets, and the distribution of recorded traditional folk and classical music of each country will broaden intercultural understanding within the United States. To develop these materials on natural and cultural conservation issues and to serve as a liaison with elementary and secondary schools, colleges, and other educational centers, an education officer (1 workyear and \$28,000) is requested. A public affairs officer (1 workyear and \$34,000) would develop written press and publicity materials on natural and cultural conservation issues and on the research, exhibition, publication, symposia, and presentation programs of the Center.

The International Center will maintain a central information resource for international conservation research and exchange. Existing material and new information, developed by research on issues of natural and cultural conservation, will be made available to scholars and the general public to enhance the practical successes of conservation efforts and to share new insights into these issues. A committee, consisting of staff from concerned Smithsonian bureaus, was established in 1984 to review the

availability of this type of information and to consider the applications of computer technology to the storage, retrieval, and public accessibility of this material. The committee's recommendations have been incorporated into the Center's plans for the development of its information resources.

The application of new and innovative information management and communication technologies to the storage, retrieval and transfer of printed, musical and visual material will reinforce the traditional forms of presenting educational information. Scholars and the public will be able to develop individualized presentations on the broad range of the Smithsonian's international activities and on specific programs and activities of the International Center. Basic information, such as population density and growth, cultural diasporas, and linguistic relationships, will be displayed on a large color map which will be generated by a combined video projection and high-resolution computer graphics system. Scholars and visitors will obtain additional information from the Center's automated information data base by using specially-designed research carrels. Visitors also will be able to listen to recordings of the music and languages spoken in different cultures, and read periodicals from African, Near Eastern, and Asian countries.

In FY 1984, the International Center submitted a grant proposal to the MacArthur Foundation for the development of these information resources. Part of the funding requested would be used to produce a series of films on natural and cultural ecological concerns to serve as an introduction to the Center's integrated approach to understanding the interdependence of cultural and physical environments and to equip a facility in the International Center to present these films.

The important role that film, video and sound materials will play in the presentation of the International Center's educational programs require a technical specialist to maintain the audio-visual equipment and an audio-visual materials librarian to catalogue, store and retrieve the materials used in these presentations (2 workyears and \$36,000).

Symposia, Conferences and Presentations (4 workyears and \$129,000) - Symposia and conferences will be developed in cooperation with the other scholarly work of the International Center and other Smithsonian research. The symposia, designed to be interdisciplinary and cross-cultural in approach and participation, will take their themes from the Center's exhibitions. A follow-up conference on each theme will be held one year later, coinciding with the publication of the proceedings of the symposium. (When appropriate, the conference may be held in the country or region under consideration, and its proceedings issued both in English and the language of the host country.) To develop the scholarly content of these symposia and conferences and to oversee all aspects of their implementation, a conference coordinator and assistant (2 workyears and \$47,000) are requested. They will assemble biographical information and make recommendations on the choice of participants; arrange travel and lodging; handle the logistics of the meetings; and oversee the design and editorial work of resulting publications. An amount of \$35,000 is sought to produce, publish and distribute informational materials to potential participants and audiences for these conferences and symposia and to edit and publish conference proceedings.

Series of presentations will be developed to complement the scholarly programs of the International Center, including lectures, film programs, performances, and craft demonstrations. Presentations by performers and craftspeople from a specific culture will be sponsored in conjunction with a symposium or exhibition on that culture. The presentation program also will include monthly "living celebrations" of American ethnic groups (similar to those held at the Renwick Gallery during the exhibition "Celebration, A World of Art and Ritual"). The "living celebrations" will encourage these American ethnic cultures to preserve their traditions and transmit them to younger generations. To develop and produce these programs, a presentation program coordinator and assistant (2

workyears and \$47,000) will be hired. They will schedule events and select participants for presentations, including lectures, film programs, performances, and craft demonstrations; arrange travel and accommodations. They will also serve as cultural liaisons with local and national ethnic communities involved in particular presentations.

Program Support (5 workyears and \$118,000) - In order to support the administrative structure necessary for the planning, implementation, and operation of the International Center's programs, support staff required include a fiscal technician, secretary, two clerk-typists, and a receptionist (5 workyears and \$73,000). An amount of \$45,000 is sought for basic support costs, including travel, office equipment purchase and rental, and supplies.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by an allotment which will support eight positions in FY 1985 and nine in FY 1986 and for costs associated with the planning and development of research and exhibitions programs for the Center (estimated expenditures of \$437,000 in FY 1985 and \$480,000 in FY 1986).

Restricted Funds- These funds are provided from grants and other donations from individuals, foundations, organizations or corporations for specific purposes. A foundation grant is now being sought to subsidize, in part, the cost of designing, constructing, and operating orientation exhibits, information resources, information and reference facilities, and an internal information management system; and to equip a theater facility to produce a series of films on natural and cultural ecological concerns (estimated expenditures of \$1,770,000 in FY 1985 and \$1,220,000 in FY 1986). Anticipated endowment funding will support six research programs in the Center (estimated expenditures of \$266,000 in FY 1986).

ASSISTANT SECRETARY FOR MUSEUM PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	19	670	-	48	1	219	3	475	-	1
FY 1985 Estimate	19	704	-	14	-	53	3	483	-	2
FY 1986 Estimate	20	816	-	15	1	57	3	348	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Assistant Secretary for Museum Programs acts for the Secretary in coordinating and providing direction to the Institution's central museum support activities, maintains a liaison with national and international museum organizations and undertakes special projects affecting Smithsonian museum operations and facilities. The Office also furnishes advice and technical assistance to other museums; performs studies on the effectiveness of museum exhibitions, programs and management methods; conducts training seminars and workshops for museum personnel; and disseminates technical information on museum practices. Also included in this line item is the Office of Museum Programs. During FY 1984, the Office of International Activities was transferred organizationally from Museum Programs to the Public Service activity. The Office of Horticulture and South Group Buildings Management, which report to this Office, are included in the Facilities Services section of this budget request, since their functions relate closely to those of the Office of Plant Services. For FY 1986, an increase of 1 workyear and \$112,000 is sought for the Native American Museum Program (1 workyear and \$72,000) and the Audiovisual Loan Program (\$40,000).

PROGRAM - I. Immediate Office, Assistant Secretary for Museum Programs: With base resources of 7 workyears and \$354,000, this Office administers, oversees, reviews and supports the Office of Museum Programs, the Office of the Registrar, the Office of Exhibits Central, South Group Buildings Management, the Conservation Analytical Laboratory, the National Museum Act, Smithsonian Institution Traveling Exhibition Service (SITES), the Office of Horticulture, Smithsonian Institution Libraries and Smithsonian Archives.

In addition, the Office coordinates and supports projects related to the development and improvement of facilities, operational methods and exhibition programs of the Smithsonian museums, including the Museum Support Center (MSC) and the Collections Management/Inventory Program. Responsibilities for this latter program encompass the accelerated inventory effort begun in FY 1979 and the process of refinement and reconciliation. The Office has worked closely with the General Services Administration, the architects and the museums that occupy facilities of the Museum Support Center in the development of specifications for the storage equipment to be used, in the planning for the transfer of the collections and the implementation of the operating requirements. The Office is coordinating the development of a Conservation Training Program to be administered by the Conservation Analytical Laboratory at the MSC.

Within the museum profession, the Office of the Assistant Secretary works closely with museum organizations and professionals, both nationally and internationally, such as the American Association of Museums and the International Council of Museums, to support the enhancement of scholarship, exhibitions, and educational functions of museums; to encourage the development and application for new techniques for museum administration and practices; and to establish and improve museum training programs, particularly in conservation.

II. Office of Museum Programs: With base resources of 12 workyears and \$350,000, the Office of Museum Programs conducts specialized training programs for museum personnel from American and foreign museums, including programs designed particularly for the Native American community; arranges internships in museum practices; and facilitates visits to the Smithsonian for visiting museum professionals. The Office plans and conducts special conferences on museum matters and provides program supervision for the Museum Reference Center, which is the major library source for museological information in the United States. The Office also produces informational and audio-visual presentations on conservation and museum practices for distribution to museums and educational organizations. Moreover, the Office currently is involved in a three-year study to investigate how museums can increase their educational contributions to their communities. The Museum Training Program offers workshops and seminars taught primarily by Smithsonian staff for individuals employed by museums throughout the United States and abroad. The courses concentrate on improved museum practices in such areas as management, design and production of exhibits, conservation awareness, educational programming, registration methods and automation, public relations and publications, audiovisuals, library and archival organization, curation and collections management. New subjects offered and planned for FY 1985 are uses of horticulture programming in a museum setting, families in museums, and older adults and museums. In FY 1984, 30 workshops attracted approximately 650 museum professionals.

The onsite program of 14 workshops conducted in 1984, at no direct cost to the Institution, will continue in 1985. This program makes it possible to present training opportunities through cooperating museums to personnel of several local museums who are unable to attend the workshops given in Washington, D.C. Since 1977, more than 800 Native Americans and their museum and cultural institutions have been served through workshops, publications, specially produced slide-tape programs and other technical assistance activities geared to the special need of this community. Since 1974, the audio-visual conservation information program has produced 112 programs and distributed over 6,500 tape and slide cassette programs illustrating and explaining museum practices and techniques with emphasis on conservation, care of collections and education. This is a unique service in the United States and as interest in conservation grows, the demand for use of the program is expected to increase.

In FY 1984, more than 80 museum professionals and students from the United States and other countries participated in the Museum Practices Internship Program conducted by the Office in cooperation with various bureaus and offices of the Institution. Interns were placed with those Smithsonian units that could provide the experience appropriate for each individual. The number of such interns has been growing and is expected to increase during FY 1985. Awards for Minority Museum Professionals, a new program, was initiated in June 1984. In 1984 and 1985, twelve minority museum professionals will be awarded up to \$500 each to defray the costs of travel to Washington, D.C. to attend a workshop of their choice and to spend a second week in residence at the Institution as a Visiting Professional. In FY 1984, the Office of Museum Programs, with funding from and in cooperation with the United States Information Agency (USIA), planned and organized the fifth annual 30-day tour of United States museums for foreign museum professionals, based on a theme of educational programs in museums. Based on the success of this effort, the USIA requested that the Office of Museum Programs organize a second tour program on museum administration.

EXPLANATION OF PROGRAM INCREASE:

Native American Museum Program (1 workyear and \$72,000) - For FY 1986, an increase of 1 workyear and \$72,000 is sought for the Native American Museum Program to enable it to provide additional services (\$53,000) and to hire a program assistant (1 workyear and \$19,000). The Native American communities have an awareness of the need to preserve their cultural heritage through museums and look to the Smithsonian Institution for professional assistance for their museum operations. Over 1,400 Native Americans and their institutions have been served through workshops, residencies, technical assistance, audiovisuals and publications since 1977, and requests are increasing annually. The success of the Program is demonstrated through evaluations by the Native Americans as well as by other organizations' recognition of its importance.

Except for a one-year Department of Labor grant of \$150,000 in 1979, Federal resources have been inadequate to provide these services. Some limited nonappropriated monies have been provided, but not to the extent required. To permit the Institution to establish a planned program of assistance to Native American museums and cultural centers, an amount of \$53,000 is requested. The monies will be used to conduct two onsite workshops on conservation awareness/collections management and exhibition techniques, ten residencies for Native American museum staff at the Smithsonian, one audio-visual production on museum organization per year, and to plan with SITES a traveling exhibition to be completed by 1988 and shown at Native American museums. The Native American Museum Program coordinator, at the present time, has only a part-time secretary. The heavy workload requires additional assistance. Therefore, an increase of 1 workyear and \$19,000 is requested to hire a program assistant who will help to coordinate the growing range of services offered by the Program.

Audiovisual Loan Program (\$40,000) - A sum of \$40,000 is requested to strengthen the Audiovisual Loan Program. This Program, which began in 1974, produces audiovisuals on the preventive care of objects and artifacts, including environmental controls, handling, storage, use in exhibitions, preventive care before treatment, recognition of problems, security and other conservation concerns. Since the Program's inception, over 6,500 loans have been distributed. Smithsonian staff utilize the programs on a regular basis and regional conservation centers have purchased them for training purposes. An increase of \$40,000 is requested to provide three additional productions annually.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Office of Museum Programs has two revolving Trust funds for training and for the audio-visual loan program to accommodate small fees for services. A separate fund has been established to record the sale and the biennial revision of the Office of Museum Programs' publication Museum Studies Programs in the United States and Abroad and in FY 1984 an allotment for the Awards for Minority Museum Professionals was provided (estimated expenditure of \$6,000 in FY 1985 and in FY 1986). Funds also were provided for the "Treasures from the Shanghai Museum--6,000 Years of Chinese Art" exhibition participation fee (estimated expenditures of \$150,000 in FY 1984).

Restricted Funds - The Office of Museum Programs received a grant of \$1.1 million from the Kellogg Foundation in 1982 for a three-year project to "expand the educational influence of museums." The purpose of the grant is to enable the Smithsonian to assume a leadership role in creating a network of museums in the United States to examine issues and provide means of implementation so that museums can increase their educational impact in their communities. All aspects of museum operations are being explored with decision-makers from museums and with representatives from other educational resources. Colloquia, regional workshops, community-resources workshops, residencies, and video tapes are being planned and organized to involve over 400 museums (estimated expenditures of \$482,000 in FY 1985 and \$347,000 in FY 1986).

OFFICE OF THE REGISTRAR

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	2	95	-	-	-	-	-	-	-	-
FY 1985 Estimate	2	99	-	-	-	-	-	-	-	-
FY 1986 Estimate	2	99	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Registrar is responsible for Institutional development, oversight and coordination of collections management policies, including advice to management concerning accountability, procedures and information management techniques for all museum objects and specimens held by the Smithsonian. It is charged with overseeing cyclical collection inventories and inventory-related activities such as reconciliation of findings with existing records. No program increase is requested for FY 1986.

PROGRAM - In 1976, traditional registration functions of the Office of the Registrar were decentralized and emphasis was shifted from record keeping to improvement of policies and practices in collections management. From the 1880s to 1976, the Office provided centralized registration services for only the Museums of Natural History and American History; but at the time of decentralization, its mission was expanded to provide support for all Smithsonian bureaus engaged in the management of collections.

When collections inventory control was designated as an urgent Institutional priority in FY 1977, the Office developed the Smithsonian's basic inventory policy and subsequently was charged with overseeing baseline collection inventories in all Smithsonian museums (1978-1983) and cyclical reinventories thereafter. This charge now encompasses reconciliation of inventory findings with existing records and enhancement of all records to provide improved accountability for collections. At the same time, the Office monitors collections management policies in the Institution's museums and provides coordination for the processing of policy documents. In further support of the activities, the Registrar's Office conducts seminar programs, initiated in FY 1978, in the information management aspects of collections management. Additional workshops on collections management also are held at least twice a year in cooperation with the Office of Museum Programs for museum professionals throughout the country. Other continuing responsibilities of the Office include coordinating the Smithsonian Registrarial Council, through which interbureau registrarial business is conducted and cooperative procedures are developed; and maintaining contact with national and international organizations concerned with the application of computers to collections management functions and also with other museums involved with the development of systems for such applications.

The inventory effort, in calling attention to the critical role of records in accountability in collections management, underscores the fact that most of the

Institution's collection records are themselves irreplaceable. Security copies of the records are being maintained, usually on a medium such as microfiche. As a result, each time more information is generated about the use or movement of an object, a new record must be created, because the information cannot simply be added to the original microfiche. The Office of the Registrar, in consultation with the museums, is investigating the use of new technologies to generate and maintain security copies of collections records in a less cumbersome manner, and will be involved in this project for the coming year.

CONSERVATION ANALYTICAL LABORATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		Funds		& Contracts	
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	36	1,666	--	--	--	--	--	--	--	
FY 1985 Estimate	46	2,274	--	--	--	--	--	--	--	
FY 1986 Estimate	49	2,404	--	--	--	--	--	--	--	

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Conservation Analytical Laboratory (CAL) provides Institution-wide support to scientific research and the application of technology in the field of conservation. CAL advises and assists the Smithsonian and other museums in the study, preservation and conservation of objects and artifacts of artistic, scientific, cultural and historical importance; conducts basic research in conservation, by studying the physical characteristics of materials, the effects of environmental factors and the chemical processes involved in the deterioration of objects. CAL performs research in archaeometry which is the systematic technical study of objects, their material make-up and their relationship to the society that produced them. CAL also conducts the Conservation Training Program at the Museum Support Center (MSC) which includes advanced conservation training, supports workshops and seminars and provides other opportunities for the dissemination of the latest knowledge in the field of conservation to museums and research professionals throughout the United States and the world. At the end of FY 1983, the Conservation Analytical Laboratory relocated from its facilities on The Mall to new facilities at the MSC. For FY 1986, an increase of 3 workyears and \$130,000 is requested to strengthen CAL's research capability in conservation science and archaeometry.

PROGRAM - The Conservation Analytical Laboratory provides a specialized facility at the Smithsonian devoted to all aspects of museum conservation. CAL conducts scientific examination of objects, provides treatment for their protection and preservation, and performs analyses of objects to develop scientific and historical data about collections. Furthermore, CAL gathers and disseminates information to assist museums in the care of their collections; advises on the environmental conditions within Smithsonian museums where valuable objects are displayed or stored; and conducts and provides assistance for conservation training programs.

Conservation activities are carried out by three departments--Conservation Treatment, Conservation Science, and Archaeometry. CAL's unique combination of research and practical conservation work enables the knowledge gained from state-of-the-art scientific research to be applied to the actual treatment of objects. Moreover, the diversity of the objects treated and the variation of their state of preservation provide a unique opportunity to develop the experience needed to define directions for scientific research in conservation.

Conservation Treatment - Conservation treatment is provided at CAL for objects presenting special problems or requiring scientific analysis by conservation scientists and

use of more specialized equipment than is available in the museums. Among the items treated in FY 1984, were many paper objects and an Early American over-mantel painting from the National Museum of American History, stair-panels painted by James McNeill Whistler from the Freer Gallery of Art, and Early American paintings of the studio of Christian Herter from the Smithsonian Institution Building collections. Numerous objects, including two bronzes from the Sackler collection, were treated to prepare them for travel and display in the exhibition "Treasures of the Smithsonian". Several ethnographic objects were conserved for the exhibition, "The Yak," at the Renwick Gallery. The bronze statue of Joseph Henry on the Mall was cleaned and waxed to protect it against environmental hazards. CAL conservators presented papers at several major national and international conservation meetings.

General preservation activities, including fumigation of infested objects and environmental monitoring in various museums and bureaus, continues. In FY 1984, CAL conducted fumigation work requested by six Smithsonian museums, undertaking 12 fumigation treatments. Using 85 hygrothermographs placed in critical areas, CAL monitors the environmental conditions of collections in 12 Smithsonian buildings, including the Cooper-Hewitt Museum in New York City.

Conservation Science - The Conservation Science Department continues to serve as both a research and a service laboratory. Research activities relate to conservation problems of broad interest to conservators and other museum staff, and service activities involve chemical and physical analyses to provide data for technical study of objects in the Institution's collections and for their preservation.

During FY 1984, conservation scientists investigated the surface treatment of concrete floors and recommended measures to make them suitable for storage of museum objects. Another study involved detection in the atmosphere of corrosion inhibitors used in air conditioning systems and their potential effect on museum objects. Studies continue on the interaction of architectural design and air conditioning in museum structures, particularly in historic and older buildings. A reevaluation of pest control methods, with a more critical view of their effects on objects and the environment; also is being undertaken. Research results prepared for publication included papers on the use of varnish on outdoor statuary, controlled temperature display cases, glue used in an American Indian bow, salt migration in fibrous materials, replication of delicate embossed paper, and the microclimate of a museum with particular reference to the restoration of historic structures. Staff members prepared lectures on various subjects such as climate control and on aspects of protein chemistry of interest to conservators.

For research in conservation and for information purposes, CAL maintains and constantly adds to a large collection of relevant reprints from professional journals and reports of past treatments on Smithsonian objects. These reprints (over 18,000 entries) and the many detailed CAL treatment reports require setting up cataloguing and information retrieval systems so that the needed information will be easily accessible. It is anticipated that this data will be incorporated into an international data base.

Archaeometry - The field of archaeometry integrates the scientific analysis of objects with their archeological, anthropological, art historical and cultural backgrounds. This provides curators, archeologists and historians with basic research data concerning materials, dates, attributions and historical technologies. Archaeometric research conducted during FY 1984 included provenance characterization of material through neutron activation analysis of trace elements in archeological specimens and lead isotope analysis of ancient bronzes and glasses. Other projects involved technological and analytical studies using scanning electron microscopy, thermoluminescent dating, and neutron induced autoradiography of paintings.

During FY 1985, work will continue on ceramic, compositional and structural investigations to determine manufacturing technology and provenance from samples obtained from archeological activity in Spain, the Middle East, Meso and Central America, and the southwest United States. Other work planned includes analysis of European Iron Age glass from the Mecklenberg Collection at Harvard University and Middle Eastern Chlorite artifacts. The work of CAL's archaeometry staff is complemented by post-doctoral scientists and research associates. The scientists also use special equipment in other laboratories such as the National Bureau of Standards (NBS) and the United States Geological Survey.

The establishment of the Smithsonian Archaeometry Research Collections and Records (SARCAR) in FY 1984 was a significant initiative. SARCAR consists of collections of data and the samples from which the data were derived; and constitutes a major step forward in insuring that high quality archaeometric data and corresponding samples are available for study by all interested parties. The initial collections will be from Smithsonian projects and from projects conducted by the Brookhaven National Laboratory over the past 20 years, several of which have been done in cooperation with CAL. These collections can be used in delineating production and distribution patterns of objects and help establish the place of manufacture of unprovenanced material. The Smithsonian will continue to cooperate with other institutions as collections are added. Because of the broad range of materials, the variety of sources represented, and the large number of institutions involved, the Advisory Board for SARCAR includes members from other institutions as well as members from the Smithsonian.

Research using the neutron induced autoradiography of paintings is expanding. This technique provides otherwise inaccessible information about the distribution of pigments in the invisible paint layers below the surface of a painting. By cooperative agreement with NBS, CAL staff uses the NBS reactor as a neutron source. Work of art historical importance has already been carried out on paintings by Thomas W. Dewing from the National Museum of American Art and from other collections. Work which continues earlier studies conducted by the Brookhaven National Laboratory and the Metropolitan Museum of Art (MMA) on Rembrandt's painting technique is in process, with active cooperation between CAL and MMA.

Prospection involves the identification of the features of an archeological site by physical methods. CAL has developed techniques for analysis of electromagnetically induced conductivity measurements that has made it possible to locate and assess the condition of tomb sites in Saudi Arabia and Bahrain with great accuracy. In Bahrain, unsilted tombs were located and their contents rescued for study just ahead of bulldozers and new construction. This research, and many of the other archaeometric projects, is carried out in cooperation with the Department of Anthropology of the National Museum of Natural History/Museum of Man.

CAL's involvement in archaeometry has resulted in participation in major national and international meetings. The 24th International Archaeometric Symposium, held at the Smithsonian May 14-18, 1984, was organized by two CAL staff members. This five-day symposium was attended by almost 300 participants from around the world and included sessions on prospection, provenance, ancient technologies, and dating of organic and inorganic materials. CAL also cosponsors a regular series of seminars in cooperation with NBS.

Conservation Training - Training in conservation has become one of CAL's primary objectives. Senior conservation staff increasingly have become involved in teaching interns and technicians working in the Smithsonian museums. CAL also sponsors a series of videotape lectures on conservation for concerned Smithsonian staff. CAL staff frequently serve as faculty for workshops presented by the Office of Museum Programs for museum professionals.

During FY 1984, CAL sponsored a course on traditional Japanese paper mounting techniques, which was taught by a renowned Japanese conservator. This valuable course has been previously presented at the International Center for Conservation in Rome and thus has been available to only a very few United States conservators.

The Smithsonian is developing a graduate training program for conservators that will give instruction for scientific and art historical principles of conservation and will give individual students the opportunity to undertake actual conservation work as part of their education. The director of CAL has responsibility for this program, which will utilize the staff and resources of CAL and other Smithsonian bureaus. The curriculum offered by the training program will be conducted in association with area universities. It is anticipated that training activities will commence in September 1985.

MSC Facilities - In October 1983, the Conservation Analytical Laboratory moved into its new facility in the Museum Support Center. The move to the Center provided needed laboratory and studio space for the conservation of historic and ethnographic objects, works on paper, textiles, paintings and furniture, and for the installation of a wide range of scientific equipment needed for conservation research and analysis projects. MSC also houses CAL's facilities for student laboratories, seminar rooms, study space, and the MSC branch of the Smithsonian Institution Libraries.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 3 workyears and \$130,000 is sought to enhance CAL's research capability in conservation science and archaeometry. CAL's research in conservation science and archaeometry requires assembly of a team of scientists possessing highly specialized knowledge and skills in very technical fields. The gradual growth of this team, projected and described over the last several years in conjunction with planning for the Museum Support Center and expanded conservation and conservation science programs, has proceeded systematically. The proposed team, however, is not complete yet. Currently, CAL includes 16 conservation scientists and archaeometrists, and projects an optimum level of 21 such staff by FY 1987. To continue the planned development of its research staff, CAL requests funding in FY 1986 for a conservation scientist (1 workyear and \$40,000) and a petrographer/mineralogist (1 workyear and \$37,000) to provide critically needed knowledge and skills for its work in archaeometric research and conservation programs.

The conservation scientist, specializing in the physical sciences, will conduct research involving isotopic analyses for carbon-14 and isotopes of other elements. This research is of importance in the dating of objects and the determination of important anthropological information such as the probable food sources of ancient cultures. This scientist would work closely with the National Bureau of Standards and the Brookhaven National Laboratory as well as with research centers which use tandem accelerator and mass spectrometers for carbon-14 dating using extremely small samples. This aspect of CAL's research activities will require a further sum of \$10,000 for costs associated with the use of equipment of collaborating institutions.

CAL's research on ceramic artifacts from sources in different parts of the world requires the unique knowledge of a petrographer/mineralogist to identify more precisely the mineral components present particularly in low-fire ceramic objects; this information is necessary for the establishment of geographic sources of material. Where this information can be combined with object provenance data, important conclusions regarding historical trade patterns in objects and materials become feasible.

In keeping with its planned staff development for FY 1986, CAL also requests funding to hire a conservation information specialist (1 workyear and \$32,000) to provide information research and reference services. CAL performs a very important and highly visible function as a clearing-house of research, technological and conservation information. The workload associated with this function is heavy already and will grow in FY 1986

because of literature research needed for conservators and scientists, as well as for teachers and students in the training program. This position, which requires an individual who has been trained in both the conservation and information fields, will enable CAL to respond to the demands for this vital information.

Finally, a sum of \$11,000 is requested in FY 1986 to provide necessary other objects support for these three positions.

SMITHSONIAN INSTITUTION LIBRARIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose					
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	93	3,692	9	327	--	3	--	51	--	--
FY 1985 Estimate	97	4,406	9	304	--	--	--	6	--	--
FY 1986 Estimate	101	5,076	10	319	--	--	--	6	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Libraries (SIL) is a research library, providing information services to support the scholarly, exhibition, public service and education programs of the Institution, as well as the work of scholars outside the Smithsonian. In addition, SIL provides services to the public through exhibitions, publications, internship and seminar programs. For FY 1986, an increase of 2 workyears and \$640,000 is sought for projects that will foster a more accessible book collection for research purposes. These projects are: a retrospective conversion of manual records to machine readable data (1 workyear and \$200,000); a detailed descriptive inventory of items in many historically valuable collections (1 workyear and \$240,000); and microfilming and deacidification in order to preserve the portion of the collection that is most in need of conservation attention (\$200,000). Also requested for FY 1986 are 2 workyears and \$30,000 for Quadrangle-related support.

PROGRAM - The Smithsonian Institution Libraries serves the Institution's museums and other activities and the public through support of Smithsonian research, curatorial, publication, and administrative activities; direct participation in the creation of the national bibliographic data base; and SIL programs of publication, exhibition, loan and information services. Its collections of approximately 927,000 volumes, including over 20,000 serial subscriptions, are available to Smithsonian and other scholars through a system of 36 library locations in the Washington metropolitan area, at the Smithsonian Astrophysical Observatory (Massachusetts and Arizona), the Cooper-Hewitt Museum (New York City), and the Smithsonian Tropical Research Institute (Panama). Besides usual library-type information services, SIL also is the designated purchasing agent for all books, journals, and related materials needed in the Smithsonian and coordinates all requests for automated information data base sources; these services help to avoid duplicative expense within the Institution.

Sophisticated electronic technologies continue to be fundamental to SIL planning for growth in the area of information transfer and resource sharing. SIL contributes its inventory records to a national data base shared by some 6,000 libraries. Following several years of intensive planning, SIL began in FY 1984 to implement a sophisticated, automated system that will accommodate all library services, including acquisition, inventory, information retrieval, transmission of library data between branch libraries, and other information management services.

SIL is comprised of three operational divisions: Collections Management, responsible for the selection, preservation, and housing of library collections essential to

Smithsonian research work; Bibliographic Systems, responsible for acquisition, indexing and automated inventory control of SIL collections; and Research Services, charged with direct, individual assistance to and interpretation for the scholarly clientele of the Libraries. Through centralization of certain operations, including an interdisciplinary reference/information center, an acquisition and inventory division, a consolidated administrative staff, and a conservation laboratory, SIL has achieved systems and cost efficiency. Branch libraries housed within the museums of the Institution provide direct services to researchers and other scholars through pertinent books collections and specialized reference services.

Collections Management - This function includes selection, deacquisition, conservation, space planning, and determination of collections management policies for SIL. A collection development policy committee reviews current practices in book and journal selection. SIL's preservation program, implemented in part by a Book Conservation Laboratory, is charged with remedying the deterioration of the most valuable SIL materials. For the past eight years, SIL has microfilmed books too brittle to be of further use. SIL continues to seek inexpensive methods to preserve the 60 percent of its holdings in danger of deterioration; these methods include planning for mass deacidification and microfilming the more fragile materials.

Bibliographic Systems - The Smithsonian Institution Bibliographic Information System (SIBIS), developed and funded through SIL from FY 1979 through FY 1983 and transferred to the Institution's Office of Information Resource Management in FY 1984, became operational in 1984. SIBIS will control all processing in SIL. Other Smithsonian units and individuals will be using portions of the system for other bibliographic, archival and related purposes.

The SIBIS system allows the Libraries to replace multiple keyboarding processes with a central data base, thereby saving staff time. Furthermore, the central data base will replace nearly all card catalogues, microfiche catalogues, circulation files, and other paper files, which will result in a further saving in SIL staff time, as well as a saving in the time of Smithsonian researchers.

Important advantages for research at the Smithsonian will result from the July 1984 introduction of the SIL on-line catalogue; besides having access from all SIL Branch Libraries within the United States, researchers in the field also will be able to dial into the catalogue directly. Researchers needing specific items can request them on-line for delivery to their offices or elsewhere. Powerful search capacities of the system will permit new intellectual access to the SIL collections.

Since 1974, SIL has used a national bibliographic data base, the Online Computer Library Center, Inc. (OCLC), as a major data source for creation of SIL bibliographic records. SIL has in turn contributed its own local inventory records to this data base, thus cooperating with other libraries and sharing its bibliographic records with some 6,000 other libraries in North America and Europe.

Research Services - The Research Services Division of SIL provides a full range of reference support for scholarly research in all fields of interest to the Institution's scholars, curators and administrators. Its staff extends not only over various fields of intellectual inquiry, but also over a very broad geographic area; it is organized into 36 official locations from The Mall to Cambridge, Massachusetts, New York City, and Panama.

In order to locate appropriate sources and provide the information needed by Smithsonian researchers, SIL staff make use of both manual reference tools and on-line bibliographic data bases. To serve research needs which cannot be met from its own holdings, SIL borrowed 23,608 volumes in FY 1983. SIL in turn loaned 5,191 items from

its collections to users in other institutions; 32,127 SIL items were loaned within the Institution. In addition, the 50 SIL branch library staff members answered 112,340 reference questions or 843 every working day. Staff also photocopied 15,340 journal articles for scholars within or outside the Smithsonian. Through all these mechanisms, the SIL Research Services staff continued to provide the most complete documentation available in the shortest period of time in order to enable researchers to find easily and quickly the information they required for hundreds of different projects.

A major accomplishment in FY 1984 was the opening at Silver Hill, Maryland, of the Museum Support Center (MSC) Branch Library (a merger of the Conservation Analytical Laboratory Branch Library and the Oceanographic Sorting Branch Library), serving the Conservation Analytical Laboratory, the National Museum of Natural History/Museum of Man, and the National Museum of American History. The Conservation Analytical Laboratory has become an important center for museum conservation, research and information, and SIL must support this growing function. This branch is one of five conservation libraries in the world and the only one in this country which performs a conservation reference service. The increase in service to persons and organizations outside the Smithsonian has developed over the past several years. In an average month, 24 advanced reference inquiries, some of which require an entire day's research, are conducted for outside users. Between 20 to 40 requests for interlibrary loans are received monthly. The MSC Branch Library also will provide bibliographic support to the conservation students who will be studying in the Conservation Training Program.

Outreach - SIL continues to concentrate on its commitment to national and international responsibilities in the areas of exhibitions, seminars, and lectures, publications, and translations. For example, The Translation-and-Publications Program administered by SIL with Foreign Currency Program funds makes available a great number of scholarly articles and monographs. SIL has other publication activities which serve the Smithsonian staff, members of the scholarly community, and the general public. Recently issued are brochures describing each of the branch libraries, The Aerospace Periodical Index (G. K. Hall), and Information Sources and Services in Astronomy, Astrophysics, and Related Space Sciences. In the early part of FY 1985, The Dibner Manuscripts Catalogue will be completed; this illustrated publication describes 1,605 manuscripts important to the history of science, dating back to the 12th century. Also, in FY 1984 and FY 1985, SIL presented lectures and seminars on the subjects of bibliography, library technology and publishing.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 2 workyears and \$640,000 is sought for projects that will foster a more accessible book collection for research purposes. These projects are: a retrospective conversion of manual records to machine readable data (1 workyear and \$200,000); a detailed descriptive inventory of items in many historically valuable collections (1 workyear and \$240,000); and micro-filming and deacidification in order to preserve the portion of the collection that is most in need of conservation (\$200,000). To accomplish these purposes, it is anticipated that the funds being sought will be required for several years.

SIL will insure that researchers have full access to all collections by converting the manual records created from the founding of the Institution through 1966 into machine readable data. Through grants, SIL has in the past three years converted records from 1966 to 1974 into machine readable data. Since 1974, all cataloguing at SIL has been done using the OCLC computer system in accordance with national standards. These resulting 250,000 electronic records form the SIBIS data base, the core of SIL's automated library system. In FY 1986, SIL will begin to convert its older and often more historically valuable records, enter them into the SIBIS system, and report them to libraries nationwide. For this purpose, the addition of 1 workyear and \$200,000 is requested.

Additionally, in FY 1986, SIL will begin to inventory almost 400,000 titles by providing physical descriptions of items in many historically valuable collections. Included in this number are 225,000 pieces of trade literature, a major source on American business history. SIL has been able to catalogue its yearly acquisitions on time, but there remain large gift collections stored at 1111 North Capitol Street and in Special Collections rooms. Recently, an important collection of Southeast Asian material required for work in the International Center and two collections to support the Office of Horticulture's research were added to SIL and became part of its backlog. To initiate inventory work on these collections, an additional workyear and \$240,000 is sought.

Many of the books and journals in these historic collections will not be accessible for research due to their fragility, the result of rapidly deteriorating paper. A recent study of these collections suggests that nearly 90 percent of SIL's holdings needs some preservation attention. One-fourth of the collection has deteriorated beyond restoration and must be preserved in some other format. SIL proposes to begin microfilming and deacidification in FY 1986 on a contractual basis as part of its preservation of scholarship for the future. This work is being coordinated with other research libraries to minimize duplication of effort. The sum of \$200,000 is requested for this purpose.

Quadrangle-related Support (2 workyears and \$30,000) - The National Museum of African Art branch library has begun the necessary development to build the expanded research collection that the Center for African, Near Eastern, and Asian Cultures will require. As a relatively new library, however, the present African Art branch lacks most of the basic primary and secondary research sources that are necessary to support advanced scholarship. A three-year program to purchase and catalogue approximately 9,000 volumes to upgrade the collection is anticipated to begin in FY 1985 with requested funding of \$247,000. This acquisitions program will more than double the size of the existing collection. For FY 1986, an increase of 2 workyears and \$30,000 is requested to hire two library technicians to assist with the receipt and preparation of these volumes for processing.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by allotments and are used primarily to support nine full-time positions and related support costs including supplies, book binding and training (estimated expenditures of \$277,000 in FY 1985 and \$317,000 in FY 1986) and to purchase special collections items as they become available (estimated expenditures of \$25,000 in FY 1985). In FY 1984, an allotment was used to purchase the Echols Collection of books on Southeast Asia (expenditures of \$45,000 in FY 1984).

Restricted Funds - These are provided through gifts and grants from individuals, foundations, endowments, organizations or corporations for specific purposes. For example, gifts from the Dibner family are being used to establish stipends for research on the Dibner Collection.

OFFICE OF EXHIBITS CENTRAL

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
			Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	42	1,467	--	--	--	-4	--	--	--	--
FY 1985 Estimate	42	1,521	--	--	--	18	--	--	--	--
FY 1986 Estimate	43	1,605	--	--	--	2	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Exhibits Central (OEC) provides Institution-wide support for a wide variety of exhibitions and exhibit-related programs in Smithsonian museums, bureaus, and offices that have limited or no internal exhibit production capabilities, and offers specialized exhibit services to supplement the exhibit capabilities of all bureaus. For FY 1986, an increase of 1 workyear and \$84,000 is requested to support the increased workload in exhibit production work that will result from the exhibition programs developed for the Quadrangle.

PROGRAM - The Office of Exhibits Central provides professional services to design, edit, fabricate, produce, install, and maintain museum exhibitions and related projects, in order to expand the resources of Smithsonian units that do not have full-time exhibits staff, and to supplement the capabilities of the exhibit departments at all Smithsonian museums. Services provided by OEC vary depending on the specific need of the requesting unit, from the silk-screening of a single label to the complete design and production of an entire exhibit.

OEC completes approximately 250 separate projects each year. Major complex projects may require up to two years to finish. For instance, a life-sized model of a pterodactyl type flying animal with a 44-foot wing span required two years of research and production of a series of scale models to insure scientific accuracy; full scale fabrication of the final model for exhibition required an additional six months of effort by five staff model makers. A model of "Tatlin's Tower" for the Hirshhorn Museum and Sculpture Garden required three months of research and five months for the construction of the final exhibition piece by four model makers. A substantial period of design and testing was required to incorporate spacecraft models, intended to be touched by the visually-impaired, into a traveling exhibition; final production took an additional four months.

OEC designs and produces approximately 20-25 traveling exhibitions each year for the Smithsonian Institution Traveling Exhibition Service (SITES). During FY 1983 and FY 1984, major new exhibitions prepared for SITES included "Building Brooklyn Bridge," "Ban Chiang: Discovery of a Lost Bronze Age," "Black Wings," "The Art of Cameroon," "The Precious Legacy: Judaic Treasures from the Czechoslovak State Collections," and "Yesterday's Tomorrows: Past Visions of the American Future."

Special exhibitions produced by the Office of Exhibits Central for installation in the Smithsonian Institution Building during FY 1983 and FY 1984 included: "Painting as a

Pastime: The Paintings of Winston S. Churchill," "300 Years of German Immigration," and "Traditional Architecture of Saudi Arabia." OEC also provides editorial and graphic support for the Festival of American Folklife and the National Associate's Regional Activities Program.

OEC staff members serve as faculty in all Office of Museum Programs workshops on exhibitions and exhibit-related specialities. In addition, qualified interns sponsored by universities and museums in the United States and abroad receive individual training in exhibition preparation. OEC also has provided professional advice on exhibition and exhibit-related matters to Federal agencies and cultural institutions, including the White House, the Office of the Architect of the Capitol, the Supreme Court, the Federal Bureau of Investigation, the United States Information Agency, and the National Capital Children's Museum.

OEC facilities, located at 1111 North Capitol Street, include design and editorial offices, a cabinet shop, spray paint shop, sheet plastic shop, graphic production shop, a highly sophisticated model shop, and a freeze-dry lab. During FY 1983, a high-security storage facility was established, providing a staging area where museum objects can be held in a humidity and temperature controlled vault during the production phases of the exhibition in which they will be exhibited.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Support (1 workyear and \$84,000) - Base Federal funding for the Office of Exhibits Central (OEC) provides resources to maintain its Institution-wide support for exhibit-related services. Although funding for OEC has remained constant, over the past five years there has been an increasing number of requests for its services and the projects undertaken have grown in complexity. As a result, there has been a reduction in the scope and size of many of the requested projects, some delays in meeting scheduled completion dates have been experienced, and some requests have been referred to other design and production sources. In FY 1986 and following years, the demand for OEC services will increase further as a result of the exhibit-related programs developed by the International Center and the other program elements of the new Center for African, Near Eastern and Asian Cultures.

It is anticipated that OEC support for the Quadrangle in FY 1986 will include several different aspects of the design, preparation, and installation work necessary to complete the exhibition areas of the Center for African, Near Eastern, and Asian Cultures before the public opening: building cases, mounting artifacts, developing and editing descriptive labels, and silk-screening. In addition, OEC will offer specialized exhibition services to supplement the exhibit capabilities of the National Museum of African Art and the Sackler Gallery as they develop the initial installation of permanent exhibitions. The requested increase would reinforce OEC's ability to support this increased workload by hiring an additional exhibits specialist to work on the fabrication of Quadrangle-related exhibits (1 workyear and \$24,000); purchasing basic supplies and materials to support this position (\$20,000); and providing additional funding for contractual services for exhibition production (\$40,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by tuition fees received from local universities; proceeds from the sale of motion picture film prints sold at cost to museums, libraries and related educational organizations; sales of the OEC book A Freeze-Dry Manual through the Smithsonian Institution Press; and reimbursements from internal Smithsonian units. These funds are used to purchase supplies, materials and services in support of OEC activities, to defray costs associated with special events and, as needed, to supplement a portion of travel expenses associated with consultation with other museum professionals (estimated expenditures of \$18,000 in FY 1985 and \$2,000 in FY 1986).

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
FY 1984 Estimate	7	295	25	2,097	--	5	3	1,967	--	44
FY 1985 Estimate	10	355	23	1,445	--	--	2	833	--	--
FY 1986 Estimate	17	550	25	1,650	--	--	--	655	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Traveling Exhibition Service (SITES) provides an important national service by offering carefully-selected, well-designed and widely-circulated traveling exhibitions covering a broad range of subject matter in the fields of art, design, technology, history, science, anthropology, education, and the environment. These include exhibitions from the Smithsonian's collections as well as those organized and loaned by other museums in the United States and abroad, foreign governments, private individuals, and organizations throughout the world. During FY 1986, facilities for SITES will be relocated from the Arts and Industries Building to space in the Quadrangle. For FY 1986, an increase of 7 workyears and \$195,000 is requested: to provide the initial staffing and necessary support for Quadrangle-related programs (5 workyears and \$110,000); and to provide program support for the development of "low-cost" exhibitions and non-reimbursable shipping costs (2 workyears and \$85,000).

PROGRAM - The Smithsonian Institution Traveling Exhibition Service is the primary Smithsonian organization which originates, organizes and circulates traveling exhibitions. Since its inception in 1952, SITES exhibitions have reached an audience of approximately 100 million people in 15,000 communities. SITES also provides professional assistance to the museum field on a variety of topics including shipping and insurance, contract matters, installation techniques, upgrading of space for exhibitions, and security.

SITES, the largest service of its kind in the United States, provides a broad selection of exhibits encompassing the diverse disciplines and subject matter represented in the collections of the Smithsonian, including art, natural history, design, archeology, anthropology, science and technology, crafts, decorative arts, and popular culture. SITES traveling exhibitions are complete programs accompanied by curatorial and registrarial information, handling instructions, technical information, publicity materials, suggested educational activities, and in most instances, catalogues. News of these shows reached over 7,000 institutions on SITES' mailing list through the annual catalogue (UPDATE), the quarterly newsletter (SITE LINE) and special mailings prepared by SITES.

Traveling Exhibitions - SITES' wide-ranging program, including 110 exhibitions in continuous circulation, represents a major outreach and service program of the Institution. SITES shows are seen by millions of people each year through local museums, galleries, and educational and cultural institutions in the United States and abroad.

Major traveling exhibitions produced during FY 1984 included: "The Precious Legacy: Judaic Treasures from the Czechoslovak State Collections"; "The Art of Cameroon"; "Native Harvests: Plants in American Indian Life"; and "Yesterday's Tomorrows: Past Visions of the American Future." SITES also coordinated the development of the exhibition "Treasures from the Smithsonian Institution," presented in conjunction with the annual Edinburgh International Festival in Scotland during August 1984.

SITES plans to circulate 23 new exhibitions during FY 1985 including: "New Vistas: American Art Pottery from the Cooper-Hewitt"; "Athletes and Heroes: Portraits from the TIME Collection at the National Portrait Gallery"; and "Five Centuries of Italian Textiles." In addition, SITES already has initiated development of 11 of the upcoming exhibitions scheduled to tour in FY 1986 and following years. SITES exhibitions, which require at least one year to 18 months to develop and produce, usually average two years on tour.

SITES Exhibitions Beginning Tours, FY 1984 - FY 1985

Based on Smithsonian Sources

FY 1984: "The Artist and the Space Shuttle"; "Building The Brooklyn Bridge: The Design and Construction, 1867-1883"; "Family Folklore"; "Matchsafes: Striking Designs"; "Southeastern Potteries"; "In Touch: Printing and Writing for the Blind in the 19th Century"; "The Shopping Bag: Portable Graphic Art" (2 new versions); "Treasures from the Smithsonian Institution"; "Yesterday's Tomorrows: Past Visions of the American Future"; "Twenty-five Years of Manned Space Exploration"; "Perfect in Her Place" (2 copies); and "Jupiter and Its Moons."

FY 1985: "New Vistas: American Art Pottery from the Cooper-Hewitt"; "Sharing Traditions: Five Black Artists in 19th Century America from the National Museum of American Art"; "Mathew Brady: Photographs from the National Portrait Gallery's Meserve Collection"; "Portraits in Black: Outstanding Americans of Negro Origin from the Harman Collection of the National Portrait Gallery"; "Exploring Microspace"; "Genre Scenes: Works on Paper from the Hirshhorn Museum and Sculpture Garden"; "Athletes and Heroes: Portraits from the TIME Collection at the National Portrait Gallery"; "Black Wings" (Copy 3); "Sculpture: Exploring Three Dimensions"; "Artists and Models: Portraits from the Hirshhorn Museum and Sculpture Garden"; and "Roger Tory Peterson at the Smithsonian."

Based on Other Sources

FY 1984: "America's City Halls"; "The Biblical Paintings of J. James Tissot"; "Flowering of Science: Plants from Captain Cook's Voyage, 1768-1771"; "Jacquard Textile Designs"; "Master Drawings from the National Gallery of Ireland"; "Native Harvests: Plants in American Indian Life"; "The Precious Legacy: Judaic Treasures from the Czechoslovak State Collections"; "South of Winter: Scenes from the Aransas Wildlife Refuge"; "The Art of Cameroon"; "Beaumont Newhall: A Retrospective"; "The Long Road Up the Hill: Blacks in the U. S. Congress"; "Marconi"; "World Print IV"; "An Age of Gold: Three Centuries of Painting from Old Ecuador"; "Arte/Objeto: Sculpture from the Tane Silversmiths Collection"; "People of the Forest: Photographs of the Mayaby Gertrude Blom"; "Unfamiliar Fauna of the Open Sea"; "Early Flight"; "Edgar Chahine"; and "Radiance and Virtue: The R. Norris Shreve Collection of Chinese Jade and Other Oriental Works of Art."

FY 1985: "Eva Zeisel: Designer for Industry"; "The Dog Observed: 1844-1983"; "Music and Dance in Highland New Guinea"; "Ten Years of European Illustration"; "From Ebla to Damascus"; "Five Centuries of Italian Textiles"; "Gold from the Islands: Jewelry from Indonesia, Malaysia and the Phillipines"; "Homage to Amanda"; "Material Evidence: The New Technique in Handmade Furniture"; "Mouton Rothschild: Paintings for the Labels,

1945-1981"; "Newcomb Pottery: An Enterprise for Southern Women, 1895-1940"; and "Goulandris Peony Exhibition."

SITES' traveling exhibitions provide the opportunity for people in other countries to learn about American history and culture. During FY 1984, "Threads: Seven American Artists and Their Miniature Pictures" traveled in North Africa and the Middle East; "American Porcelain" in Asia; and "Good as Gold: Alternative Materials in American Jewelry" in Latin America.

During FY 1984, the following bookings for SITES shows were scheduled by state:

Alabama	14	Mississippi	5
Alaska	2	Missouri	12
Arizona	2	Montana	2
Arkansas	3	Nebraska	2
California	25	Nevada	2
Colorado	6	New Jersey	2
Connecticut	7	New Mexico	5
Delaware	3	New York	15
District of Columbia	7	North Carolina	10
Florida	28	North Dakota	1
Georgia	11	Ohio	30
Hawaii	1	Oklahoma	4
Idaho	3	Oregon	5
Illinois	17	Pennsylvania	13
Indiana	6	South Carolina	3
Iowa	8	South Dakota	2
Kansas	13	Tennessee	16
Kentucky	5	Texas	31
Louisiana	14	Utah	3
Maine	3	Virginia	4
Maryland	9	Vermont	1
Massachusetts	15	Washington (State)	7
Michigan	11	Wisconsin	14
Minnesota	8	West Virginia	9

A total of 244 cities in 47 states and the District of Columbia were served for a total of 419 showings.

A total of 28 exhibition bookings also were scheduled in nine other countries in FY 1984.

Canada	18	Japan	1
Egypt	1	Malaysia	1
France	1	Morocco	1
Haiti	3	Philippines	1
Hong Kong	1		

SITES exhibitions represent an essential element in the program and resource planning of thousands of exhibition-sponsoring organizations. These organizations benefit directly from the traveling exhibitions by being able to present an exhibit for a fraction of the cost required to develop and produce the exhibition for themselves. The Federal support received by SITES allows exhibitions to be developed, toured and provided to these organizations at an affordable participation fee. Federal funding constitutes only 13 percent of SITES total operating budget; the remainder is provided through exhibition fees, non-appropriated Trust fund support from the Institution, and outside grants

and contracts. This Federal assistance, however, is essential to insure that fees paid for exhibitions remain within the budgetary reach of participating museums and galleries across the United States.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 7 workyears and \$195,000 is requested to provide the initial staffing and necessary support for Quadrangle-related programs (5 workyears and \$110,000); and to provide program support for the development of "low-cost" exhibitions and nonreimbursable shipping costs (2 workyears and \$85,000).

Quadrangle-related Programs (5 workyears and \$110,000) - Exhibitions and workshops produced by SITES will be important components of the programming for the Quadrangle. To reinforce SITES' role in bringing different cultures closer together through traveling exhibitions and to provide much-needed expansion space for its programs, SITES is scheduled to move into new facilities in the Quadrangle in FY 1986. These facilities will include an introductory gallery, an educational workshop, a reference library, a vault for temporary storage of exhibition objects and materials, and meeting rooms.

With its move to the Quadrangle, SITES will undertake additional program responsibilities and expanded operations. A traveling exhibition workshop program is planned to test and evaluate educational materials, exhibition design and content, and audience development and publicity for SITES' shows. Educational activities for schools, multimedia workshops and seminars will be held on topics such as silk-screen methods, labeling standards, printing and other exhibit techniques. A sum of \$10,000 is requested to design and print brochures and other material to inform exhibitors and other institutions about these program activities.

An introductory gallery will provide current information on SITES programs and traveling exhibitions to potential lenders and traveling exhibition borrowers. Samples of educational materials, photographs demonstrating suggested installation designs, public service announcements, and other introductory material will demonstrate the broad range of services available from SITES. A sum of \$10,000 is requested to develop a panel exhibit to present information about SITES activities in a graphic design that can be easily updated with minimal added cost.

Staffing required for SITES programs in the Quadrangle in FY 1986 include an assistant registrar, research assistant, audio-visual specialist, receptionist, and secretary (5 workyears and \$74,000). The assistant registrar will be responsible for the temporary storage of objects and valuable material in the vault. The research assistant will develop SITES' collections of slides and educational material into a reference library and be responsible for the cataloguing, storage, and circulation of this material. The audio-visual specialist will maintain SITES' audio-visual equipment and provide program support for the use of this equipment in the educational workshop and meeting facilities. The secretary and receptionist will provide needed clerical support for these new programs, including providing public assistance in the introductory gallery. A sum of \$16,000 also is requested to annualize the personnel costs of the three positions requested in FY 1985.

Support for Traveling Exhibitions (2 workyears and \$85,000) - Federal support for these traveling exhibitions allows the development and distribution of high-quality, low-cost exhibitions to insure that the exhibition fees paid by the users of SITES exhibits remain affordable to small museums and other institutions across the United States. Approximately one-third of the traveling exhibitions currently offered (39 of a total of 108) can be borrowed for \$1,000 or less. In order to develop eight more of these "low-cost" exhibitions each year (with rental fees from \$500 to \$1,000 each) tailored to the needs of those institutions that cannot afford the fees charged for the higher-cost exhibitions, two additional exhibition coordinators are requested (2 workyears and

\$50,000). It is anticipated that these new exhibitions would include shows in the fields of anthropology, history, and the sciences, on such topics as dinosaurs and American cultural history.

SITES is responsible for the nonreimbursable costs of shipping a traveling exhibition to its first tour location, and for any costs incurred in shipping the material that is loaned for an exhibit to and from the lender. Each exhibitor pays for the shipping of an exhibition to the next stop on its schedule. However, the nonreimbursable shipping, one of the most unpredictable variables in SITES' operating budget, has continued to increase in the past few years and is projected to reach an estimated \$82,000 in FY 1986. In FY 1984 and FY 1985, SITES base funding for this shipping is only \$47,000. The sum of \$35,000 is requested to correct this base shortage and thereby hold down overall participation fees for borrowing exhibitions.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from participation fees collected from museums, universities, historical societies and other users of the traveling exhibitions. These funds, supplemented by an allotment, support 23 positions and virtually all exhibit development costs including publications, materials, outside specialists and contractual services (estimated expenditures of \$1,445,000 in FY 1985 and \$1,650,000 in FY 1986).

Restricted Funds - Funds are provided in the form of gifts and foundation grants from individuals, organizations or corporations for specific purposes. During FY 1984, several grants were received: from Champion International Corporation for the "Yesterday's Tomorrows: Past Visions of the American Future" exhibit; from Time, Inc. for the exhibit, "Hollywood: Legend and Reality"; from Aramco, Shell Companies Foundation, Mobil Oil Corporation, and an anonymous sponsor, for "From Ebla to Damascus"; from Mouton Rothschild for the show "Mouton Rothschild: Paintings for the Labels"; and from CBS, Inc. to develop ideas and concepts for educational software.

Major funding is expected to continue during FY 1985 for the development of important exhibitions: "The Paris Style: Samuel Bing"; "Vallotton"; "Lost Cities, Forbidden Kings"; and "Utopia." SITES is seeking funds from corporations through the Institution's Office of Membership and Development to produce the following exhibits: "Renaissance Bronzes from Austria" and "Baseball."

SMITHSONIAN ARCHIVES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
			Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	15	501	5	129	--	--	--	--	--	--
FY 1985 Estimate	15	523	5	144	--	--	--	--	--	--
FY 1986 Estimate	15	523	5	129	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Archives is the official repository for papers of historic value about the Smithsonian and the fields of science, art, history and the humanities. Its holdings, forming a valuable resource for scholars working on the history of science and other areas of traditional Smithsonian interest, are available to all qualified researchers. Moreover, the Archives provides archival and records management services to support the research, collections management, educational and administrative functions of the Institution. No program increase is requested for FY 1986.

PROGRAM - The Smithsonian Archives serves as the official Institutional repository for official records, specimen-related records and the papers of distinguished research staff. It is responsible for a central research facility, an off-Mall records storage center at 1111 North Capitol Street, and centralized information systems for archival collections dispersed throughout the Institution. The Archives protects the integrity of vital records of the Institution; preserves significant historical documentary and other material that is subject to decay or damage; provides access to these research collections for scholars and the general public; and supplements vital records of the Institution by acquiring relevant personal papers and oral history interviews. The collections maintained by the Archives contain records in all media: paper, sound, film, artwork, occasional artifacts, and machine-readable records associated with or derived from the official work and program activities of the Institution.

Research - In FY 1983, the Archives responded to 1,126 reference inquiries: 595 from within the Institution and 531 from outside scholars and the general public. Inquiries have risen by over 25 percent in FY 1984. Research by outside scholars produced 22 publications in FY 1983, mostly on the history of American science in the 19th century. Recent publications based in part on work done in the Archives have included: "The Telegraph and the Structure of Markets in the United States, 1845-1890" in Research in Economic History; "The Smithsonian's Alaska Connection: 19th-Century Explorers and Anthropologists" in The Alaska Journal: a 1981 Collection; "The Antiquity of Man and the Development of American Archeology" in Advances in Archaeological Method and Theory; and Women Scientists in America: Struggles and Strategies to 1940. Other scholarly work in progress includes a study of the Society of Systematic Zoology, a history of the establishment of the United States Forest Service, and continuing research on the history of world's fairs.

In FY 1984, a new manual on museum archives was published and distributed by the Society of American Archivists, and staff members have published several articles in professional journals on subjects related to museum archives.

During FY 1983 and FY 1984, the Archives participated in the development of applications of the Smithsonian Institution Bibliographic Information System (SIBIS) to the Archives' holdings. Scheduled for full operation in FY 1985, SIBIS will make the Archives' information available to all Institutional users and to researchers in other parts of the country through interlibrary networks.

In response to a long-perceived need, the Archives began the comprehensive survey of photographic collections in the Institution. Information on the location, volume, condition, and other characteristics of photographic collections in more than 200 offices of the Institution will be entered into the SIBIS data base, and a printed Finder's Guide to Photographic Collections in the Smithsonian Institution will be published. The Archives also is investigating the potential of using the SIBIS formats to obtain item-level control over individual photographic images of these collections in the future, through the combination of computer applications and the developing video disc technologies.

Using the same techniques developed for the photographic survey project, the Archives has initiated a survey to locate and describe collections of scientific drawings and illustrations in the National Museum of Natural History. The survey work will include the preparation of a guide to these collections; the preservation of those with scientific, artistic, or historical value; the development of management and appraisal guidelines for their retention and disposition; and the identification of items for microform copying.

An oral history program has been developed by the Archives to supplement existing archival documentation. Beginning in 1974, taped interviews with key administrative and scholarly staff have been conducted, including interviews with late Secretaries Charles G. Abbot and Alexander Wetmore. These interviews have provided an invaluable added dimension to the historical study of the Smithsonian in the 20th century.

Conservation of Archival Collections - During the next five years, the Archives plans to establish a conservation program which will include deacidification and encapsulation processes and will upgrade its microform copying capability to compensate for records deterioration. A survey of material in the Archives conducted in FY 1984 revealed that over one million pages of 19th- and 20th-century Secretarial records are on unstable paper that is decaying. Among those records are 19th-century letterpress books that are beginning to crumble to the touch, and must be microfilmed. In addition, approximately 175,000 pages of specimen catalogues of the U.S. National Museum and another 175,000 pages of drawings and manuscripts, including papers of John James Audubon and other prominent 19th-century naturalists and scientists, require microfilming as well. A two-year project to convert the Archives' 17,000 nitrate negative images to a more stable film base is anticipated to be completed by the end of FY 1985. The Archives also coordinates and manages the cold storage of approximately 28,000 still nitrate images and 12 reels of motion picture film belonging to other Smithsonian bureaus. In FY 1984, material microfilmed included approximately 4,000 pages of Cooper-Hewitt Museum accession records filmed as security copies. Other necessary conservation projects identified by the survey include audio recordings, microfilm, and other motion picture film and still photographs requiring care and copying to preserve their images and information content.

Records Management - The Archives' five-year plan to establish records management and archival programs in administrative and program offices, begun in FY 1981, is anticipated to be completed in FY 1986. Although concern for vital records is found in the

correspondence of 19th-century Secretaries of the Institution, this five-year plan has been the first systematic attempt to extend comprehensive, standardized records management and archival concepts and practices throughout the Institution. A handbook to provide guidance for records disposition throughout the Institution is in draft form and being readied for distribution. Records surveys and specific disposition schedules already have been established in about one-third of the approximately 600 offices identified as potential records-producing entities. Routine and systematic records retention and disposal processes for the entire Institution are anticipated to be in effect by the start of FY 1987.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by allotments and are used to cover salaries of an archivist and an archives technician, and various support and publishing costs. Funds also are provided for three positions and publication costs of the Finder's Guide to Photographic Collections in the Smithsonian Institution (estimated expenditures of \$84,000 in FY 1985 and \$64,000 in FY 1986).

NATIONAL MUSEUM ACT

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose					
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	3	787	--	--	--	--	--	--	--	--
FY 1985 Estimate	3	789	--	--	--	--	--	--	--	--
FY 1986 Estimate	3	789	--	--	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum Act of 1966 (20 U.S.C. 65a), as amended, established a technical assistance program, administered by the Smithsonian, to make grants for projects that will enhance the quality of museum operations nationally. Through National Museum Act (NMA) grants, the Smithsonian supports professional training in all types of museum activities--including collections management, research and exhibitions, education, public relations, and conservation--and special studies and scientific research on important museum-related problems. Historically the grant program has attempted to foster high standards of professionalism in the museum community and increase awareness of the critical importance of conservation issues that affect the care and preservation of our cultural and natural heritage. No program increase is requested for FY 1986.

PROGRAM - National Museum Act grants provide training opportunities for museum professionals; support research that advances knowledge about critical museum-related problems; and encourage activities that make technical information available to the field. Grants are made to museums, professional museum organizations and associations, and academic institutions with museum-related programs throughout the United States. The National Museum Act Advisory Council assists in identifying priorities and evaluating projects for which support is requested.

The Advisory Council, appointed by the Secretary, consists of museum and conservation professionals in the principal museum disciplines of art, science, and history, from large and small institutions throughout the United States. In evaluating the applications for assistance from NMA, the Advisory Council's recommendations are based on the potential benefit of the project to the museum field, the quality of the proposal, and the qualifications of the individuals involved.

From 1972 to 1984, the National Museum Act processed 2,160 applications for grants and made 730 awards, totaling \$9.4 million, of which 356 awards (49 percent) involve conservation training and research. In FY 1984, 228 proposals requesting \$4.5 million were submitted -- the largest number of applications and the largest dollar request received by the NMA program in any one year. Sixty-four grants were made, totaling \$686,000; 46 of these grants (72 percent) related to conservation.

Professional Training - Recognizing the critical need for trained conservators in the United States, the National Museum Act established a program in FY 1976 to assist individuals preparing themselves for a professional career in conservation. In FY 1983

and FY 1984, 44 awards were made to institutions sponsoring individuals studying various areas of conservation, including textiles, archival materials, ethnographic and archeological objects, paintings and paper. Training programs have included graduate level studies in conservation, internships and apprenticeships, and mid-career refresher courses. The great majority of trainees are now practicing conservation, including architectural conservation, with many employed by major museums or regional conservation centers. Internship grants have provided important museum training opportunities for individuals from minority backgrounds including a Hispanic student at the Denver Art Museum and two black students at the Afro-American Historical and Cultural Museum in Philadelphia in FY 1983.

Seminars and workshops provide up-to-date technical information to professionals who are currently in the museum field. During FY 1983 and FY 1984, NMA awarded 18 grants for seminars on conservation, museum administration, and museum education, including two projects in FY 1984 to increase the professional skills of minorities working with special collections. A series of regional workshops on museum management were held for staff members of institutions that collect and exhibit African-American cultural materials. Another workshop was given on the use of oral history and photographic collections for American Indian museums and cultural centers.

Research - The National Museum Act consistently has sponsored research projects to increase knowledge about museum-related problems. For example, in FY 1983 and FY 1984, a project at the Metropolitan Museum of Art in New York City examined the underdrawings of old panel paintings from the Netherlands with infrared reflectography in order to reveal information about authentication and artists' techniques. This visual data will be refined and enhanced by computer analysis. The results of this project will be the subject of a symposium on the use of infrared reflectography in art history.

In FY 1983 and FY 1984, 13 grants were made for scientific research on conservation problems. These research projects included such topics as pest control in museums, corrosion problems that affect silver objects in decorative arts collections, and proper enclosures for 19th-century photographic prints. One project has resulted in the application of a medical technique for identification of protein material to conservation research. It will help conservators identify and ultimately treat damage to objects done by various fungi.

Services to the Field - Grants in this category have included support to national and regional professional associations to provide services to their member museums (especially smaller museums) at the local and regional levels through such activities as informational journals, workshops, and consultancies. A grant made in 1984 will enable the Center for Occupational Hazards to prepare carefully researched data sheets on health hazards in museum conservation, an area of increasing concern to conservators.

In order to coordinate efforts to meet the increasingly complex needs of museums, the staffs of the National Museum Act and the Office of the Assistant Secretary for Museum Programs work closely with individuals, museums, educational institutions, and professional organizations involved in museum training and research activities. The Smithsonian also consults regularly with administrators of Federal museum programs and participates in the Museum Working Group of the Interagency Committee of the Arts and Humanities, to avoid unnecessary overlap between different programs. In particular, the Smithsonian maintains a close working relationship with the National Endowment for the Arts, National Endowment for the Humanities, the Institute of Museum Services, and the National Science Foundation to insure the effective and efficient utilization of the Federal resources available to the museum field.

Status of Authorization - Legislation to reauthorize the National Museum Act is pending in Congress. On May 25, 1983, the Senate approved a bill (S. 840) authorizing

annual appropriations of \$1 million for the National Museum Act in FY 1985 through FY 1988. A similar bill (H.R. 2117) had been referred to the House Committee on House Administration, but has not yet been reported out of committee. Although previously available authority expired September 30, 1982, funding for the National Museum Act activities has been provided in the language of the Interior and Related Agencies appropriation bills for FY 1983 and FY 1984.

AMERICAN STUDIES AND FOLKLIFE PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	8	656	11	500	--	36	--	54	--	394
FY 1985 Estimate	8	689	13	563	--	37	--	208	--	403
FY 1986 Estimate	9	799	13	605	--	27	--	208	--	257

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Offices of American Studies and Folklife Programs conduct research on the material aspects of American civilization and on the traditional folk cultures of the United States. The Office of Folklife Programs also undertakes studies of foreign folklife traditions as well. Among its activities, the Folklife Program produces the Festival of American Folklife, which is the largest annual cultural event in the Nation's Capital. For FY 1986, an increase of 1 workyear and \$110,000 is requested to support a Native American program at the annual Festival of American Folklife.

PROGRAM - I. The Office of American Studies: With base resources of 2 workyears and \$98,000, the Office of American Studies sponsors a graduate program in American material culture in cooperation with various universities in and out of the Washington metropolitan area. This graduate program 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 Institution.

Four or five seminars a year are offered for academic credit and are taught by the director of the program and by cooperating scholars. In addition to the regular American Studies courses offered to graduates, a number of folklife courses have been added to the offerings in the past several years.

II. The Office of Folklife Programs: With base resources of 6 workyears and \$591,000, the Office of Folklife Programs identifies and studies the rich variety of folk traditions which are an important part of American culture. The Office develops methods for presenting these traditions to general and academic audiences to foster awareness and understanding of the importance of folk culture; advocates the long-term commitment to the preservation and revitalization of cultures whose existence is endangered by the encroachment of the institutions of modern technological society; produces the annual Festival of American Folklife and develops scholarly documentation of the papers, films, tapes, and other materials amassed during the Festivals; collaborates with other Smithsonian bureaus on producing folklife exhibitions; and works closely with other government agencies interested in traditional culture on the development of programs for the advancement of the Nation's interests in folklife.

Exhibitions - In cooperation with the Smithsonian Institution Traveling Exhibition Service (SITES), the Office of Folklife Programs developed a traveling exhibition on the surviving traditional potteries in the southeastern United States entitled "Southeastern Potteries." The exhibit will be shown at about 15 locations throughout the country. It also appeared at the National Museum of American History for eight weeks in the summer of 1984 as part of the Festival of American Folklife. The exhibition was accompanied by the publication of a book, Raised in Clay: The Southeastern Pottery Tradition.

The annual Festival of American Folklife has become the largest annual cultural event in the Nation's Capital. The Office of Folklife Programs is responsible for fund-raising and research activities, and for planning, producing and presenting the Festival. This event has developed a large and loyal constituency throughout the Nation and also has stimulated local interest in the traditional arts of the regions from which folk artists have been brought to the Festival. Such interest has fostered research projects, local mini-festivals modeled after the Smithsonian's Festival, and regional opportunities for traditional craftworkers and performing artists. A major program of the FY 1984 Festival featured Alaska in celebration of the State's 25th anniversary of statehood and included a Native Alaskan component, an occupational component, and music, dance and crafts drawn from the State's diverse traditional cultures. A program on "Black Urban Expressive Culture from Philadelphia" presented urban traditions in music, dance, and verbal artistry. The forms ranged from blues to gospel, tap dancing to street drills, and traditional humor to "rapping." Another program, "The Grand Generation: Folklore and Aging," celebrated the vital role that older generations play in the preservation and perpetuation of America's cultural heritage and identity.

Planning is under way for the 19th Festival which will feature a program on India, conceived to complement the nationwide Festival of India; a featured state program; and a program on black expressive culture.

Publications - The staff of the Office of Folklife Programs is involved in a broad range of publication projects that analyze and document folklife traditions. In 1978, the Smithsonian Folklife Studies Series was established to document folkways still practiced or still within living memory in a variety of traditional cultures. This innovative series couples book-length monographs with accompanying films to document and analyze particular traditions more fully than would be possible with either medium used alone. This hybrid format has proved a useful and important tool for the study of cultural processes. Recent projects in the Series include: "Jugtown: Pottery Tradition in Change," a documentary film of a North Carolina pottery; The Ojibwa Dance Drum: Its History and Construction, a monograph written to accompany the film "The Drummaker"; and "At Laskiainen, In Palo Everyone is a Finn," a film documenting a Finnish-American mid-winter festival. The recent addition of an outside evaluations board for the Smithsonian Folklife Studies Series is adding to its scholarly development.

Archives and Education - The archives of the Office of Folklife Programs is a repository for folkloristic materials generated by Office activities. These materials include recordings of Festival performances and of the fieldwork interviews from the research that supports the Festival project and documentation of other Office-sponsored publications and events such as the film-monograph series projects and the Franklin Delano Roosevelt Centennial concert. The archives includes: 8,000 reels of audio tape; 2,500 audiocassettes; 4,700 rolls of black and white film; 20,000 color slides; 500,000 feet of motion picture film; 850 video tape recordings; and 220 cubic feet of files.

Inquiries are addressed regularly to archives staff by scholars and others with research interests in traditional culture. The archives is also a resource for visiting fellows who have conducted year-long research projects in the archives since 1976. Topics have included: Coal Miners and the Coal Industry, 1930-1960; Institutional Intervention in Traditional Liturgical Music; Occupational Folklife of Firefighting;

Pre-Bluegrass Banjo-picking Styles; and The Use of Harmonica in American Traditional Music.

EXPLANATION OF PROGRAM INCREASE:

Native American Program (1 workyear and \$110,000) - For FY 1986, an increase of 1 workyear and \$110,000 is requested to support a Native American program at the annual Festival of American Folklife. This program would focus on American Indian cultural traditions and their creative adaptations to the changing historical conditions. A typical Festival presentation would include performance and crafts components, organized by genre (beadwork, boat-building, singing, dance, etc.). This comparative structure would highlight the richness and variety of Native American expressive culture and would complement the Institution's collection of American Indian artifacts and documentation of Indian cultures and languages. In addition, the presentation would include a "learning center," designed to address contemporary cultural issues of Native Americans through exhibits, discussions by panelists, and videotape or slide showings. This requested increase would provide for temporary staff (1 workyear and \$18,000), travel and transportation of persons (\$10,000) and contractual services for program research and production of the Native American program (\$82,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds: I. Office of American Studies: Tuition reimbursement is received from the cooperating universities, principally the George Washington University and the University of Maryland, whose graduate students avail themselves of the courses offered by the Office of American Studies. The tuition reimbursement program is designed to reimburse the Institution for the use of its facilities by the students participating in Smithsonian classes and, in addition, to provide honoraria and reimbursement for the services of outside experts participating in the program (estimated expenditures of \$14,000 in FY 1985 and \$15,000 in FY 1986).

II. Office of Folklife Programs: Funds are provided by allotments and from concessions sales relating to the Festival of American Folklife (sales are normally \$25,000 to \$35,000). They support the salaries of 13 full-time employees as well as related support costs (estimated expenditures of \$563,000 in FY 1985 and \$605,000 in FY 1986).

Restricted Funds - Funds are provided in the form of individual gifts and grants from private foundations or corporations and are used to fund specific programs. Funds are anticipated from several sources to cover the costs of programs at the Festival of American Folklife (estimated expenditures of \$207,000 in FY 1985 and in FY 1986).

Federal Grants and Contracts - These are provided by various state and local governments for support of performances and programs at the annual Festival of American Folklife. In FY 1984, funds were received to support the costs of highlighting the folklife traditions of Alaska. Additional grant support is anticipated in future years for the Festival (estimated expenditures of \$403,000 in FY 1985 and \$257,000 in FY 1986).

INTERNATIONAL ENVIRONMENTAL SCIENCE PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**		Amount	
			FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	13	681	--	--	--	--	--	--	--	--
FY 1985 Estimate	13	712	--	--	--	--	--	--	--	--
FY 1986 Estimate	13	712	--	--	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The International Environmental Science Program (IESP) coordinates the Institution's long-term monitoring and study of unique and significant ecosystems. Its goal is to evaluate biological diversity in order to understand and eventually predict the consequences of natural change and human activities. The Program is a multibureau, interdisciplinary effort, where research takes place at two permanent Smithsonian sites--the Tropical Research Institute in Panama and the Environmental Research Center in Maryland--as well as at several temporary sites throughout the world. No program increase is requested for FY 1986.

PROGRAM - The Smithsonian's long tradition in international research and its unparalleled collections of natural history objects make it well qualified to sustain scientific activities abroad. The IESP provides support costs for teams of scientists to monitor natural variations in specific environments that are still unstressed by humans. A 1984 report from the Office of Technology Assessment entitled, "Technologies to Sustain Tropical Forest Resources," reemphasizes the need for continuing and expanding existing long-term monitoring programs, as a means to maintaining ecosystems, and developing applied technologies to ensure the continued existence of rapidly diminishing tropical forests. A United States interagency committee chaired by the Agency for International Development (AID) to examine genetic diversity also has underscored the need for such monitoring activities as a critical strategic concern of the United States.

The Rhode River Estuary at Edgewater, Maryland, the tropical lowland forest of Barro Colorado Island, Panama and the Galeta Reef on the Atlantic side of the Panama Canal have served as the Program's permanent research sites. Over the past ten years, scientists have been able to develop a long-term descriptive data base on the biological, physical and chemical components of these ecosystems. Analyses of data collected at these sites, have produced concepts and verifiable hypotheses on the long-term patterns in climate, and the stresses and disturbances resulting from human activity. Mathematical models are being developed from the data to predict the effects of land uses and variation in climate upon nutrient discharge.

With support from foreign governments, environmental conditions at the Program's temporary sites are being monitored in Brazil, Venezuela, Nepal, Peru and on Aldabra atoll in the Indian Ocean. Emphasis is on identifying and monitoring characteristics which affect genetic diversity. Such knowledge is crucial in managing the biota of these key sites.

Recent accomplishments at permanent sites for FY 1984 include:

A long-term study of rainfall and stream water on the Muddy Creek watershed of the Rhode River was published in 1984. The study shows that the acidity of bulk precipitation in the spring season increased steadily between 1974 and 1981. The acidity of freshwater streams draining the watershed also increased. However, between 1982 and 1983, the acidity decreased slightly. This study is of importance because fish and amphibians spawn in the winter and spring, and a slight increase in acidity can be fatal to the eggs and larvae of many aquatic animals.

The cause (or causes) of acid rain is still being debated. However, its effect is being measured in a variety of ecosystems by environmental scientists. A separate comprehensive study on the Rhode River watershed has been published which concludes that the chemical reaction caused by the acidity is displacing essential plant nutrients such as magnesium, calcium, and potassium. Measurements of soil nutrient reserves indicated that these losses could be ecologically significant to forest plants within a few decades.

A comprehensive inventory of the invertebrate population which occupies the Galeta Reef has been published, capping several years of research.

At IESP's nonpermanent sites in Brazil, Venezuela, Nepal, Peru, and Aldabra, scientists are continuing their efforts to gather descriptive data that will allow for the development of verifiable hypotheses concerning genetic diversity, animal management, and natural area management. Recent accomplishments at nonpermanent sites for FY 1984 include:

Aldabra - The first visit to the atoll by scientists from the National Museum of Natural History has shown that present views on the biogeography of the Indian Ocean are largely based on undocumented information. Collections from the intertidal region of the atoll yielded a variety of new species heretofore unknown to science. Information gleaned from the collections confirms the fragility of the atoll's shallow habitats. This knowledge, while scientifically important in itself, is critical to government authorities in developing tourism levels so as not to exceed the tolerance of the ecosystem.

Nepal - The final research project under the auspices of the Nepal Tiger Ecology Project was completed in December 1983. One researcher completed investigations on the ecology of the endangered hog deer, Axis porcinus, a major prey of the tiger. In early 1984, the Nepalese Government and the Smithsonian signed an agreement for continued collaborative investigations on the ecology of the Nepalese terai (a lowland, grassy plain). This expanded program varies from previous work in that it will explore the ecosystem at a macrolevel by concentrating on the relationships between climate, habitat, wildlife and the human population which depends upon and interacts so vitally with the ecosystem of the terai. Scientists from the Smithsonian Tropical Research Institute, National Zoological Park, and the National Museum of Natural History, with Nepalese counterparts, will conduct these studies.

Venezuela - Efforts are continuing to understand the llanos ecosystem of Venezuela. In FY 1983 and FY 1984, Smithsonian scientists and their colleagues studied red howler monkeys, iguanas, white-tailed deer, small mammals, and aquatic beetles. Significant

progress was made in developing an adequate data base essential for understanding the genetic structure and dynamics of the local population of howler monkeys. These data are essential for testing sociobiological hypotheses for primates, as well as developing strategies for primate conservation. A recent dam project near the study area is being monitored for its potential effects on wildlife. An intensive two-year investigation of iguanas was completed and will be used as part of a larger effort to document iguana populations in the tropics. Research on the behavior and breeding cycles of iguanas is significant since they are an important food source for humans in the tropics.

Brazil/Peru - Amazonia - Fieldwork and publication of research results continue at sites in the Amazon region where scientists are studying the systematics and ecology of plant and animal groups important in monitoring the rapid change in the region. Fieldwork continues in botany, entomology, herpetology, and ichthyology. Significant recent accomplishments include the discovery of a new genus of bamboo in the Organ Mountains in the State of Rio de Janeiro, and collection of seeds of a rare local bamboo in Bahia state. New archeological discoveries in the State of Rondonia spurred the state officials to build a new museum to exhibit and study the artifacts found.

Brazil (Golden Lion Tamarin Project) - During FY 1984, significant progress was made in efforts to repatriate the highly endangered primate, the golden lion tamarin, to its native habitat in Brazil. Efforts began to observe, capture, and track via radiotelemetry wild groups of tamarins in the Poco d'Anta Reserve to better understand their habits in the wild. Threatened fauna from outside the Reserve were successfully translocated to within the Reserve. Successful translocation is an important factor because future conservation of these animals will involve moving family groups from forest areas slated for destruction into forests which will be preserved. In November 1983, 15 golden lion tamarins bred in United States zoos were brought to Brazil for acclimatization and then released in their native habitat in April-May 1984. In addition to these efforts, an active program of reforestation and habitat rehabilitation is taking place in the Reserve to make the repatriation more successful. This project is being coordinated with Brazilian conservation and research organizations, as well as with the local people surrounding the Reserve.

The IESP programs are regularly subject to a variety of peer reviews to ensure the quality of the research. In June 1984, there were site visits to Panama and Edgewater by a panel of outside scientists to review and evaluate current programs and progress. These visits resulted in recommendations for future directions of research at both sites.

Over the next five years, it is anticipated that work will continue at all program sites. In Panama, in particular, IESP scientists propose to enlarge the scope of the research program to include the Montane Tropical Rain Forest in Chiriqui. The main objective would be to compare a low altitude tropical forest at approximately sea level to this high altitude (6000-7000 ft.) tropical forest by recording plant and animal species, monitoring physical factors and measuring net productivity. It is known that the soils in the high altitude forest are generally superior to lowland ones, which results in greater pressure to convert them to agriculture, reducing further the number of tropical forests. Researchers also planned to continue and expand long-term studies of the effect of natural climate variability on a selected population of organisms.

At the nonpermanent sites, efforts will continue to monitor the ecosystems under study in order to understand the complexities of tropical and subtropical ecosystems. In Brazil, efforts are expanding to offshore areas to comprehend better the interaction of aquatic plants with marine life. Monitoring of released golden lion tamarins will continue in order to assess the viability of species reintroduction programs. In Nepal, extensive studies will be undertaken on the interaction of seasonal fire, large herbivores and woodland habitats. These efforts are supplemented by AID sponsored studies

on fire ecology in grasslands and the ecology of human populations surrounding the Chitwan National Park. This research represents the only ecosystem study of this magnitude conducted in the ecologically imperiled South Asian subcontinent. On Aldabra, specialists in invertebrate and vertebrate studies will continue to assess the conditions of this unstressed atoll.

ACADEMIC AND EDUCATIONAL PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
			FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	21	713	3	263	--	1,215	--	229	--	--
FY 1985 Estimate	21	745	7	354	--	1,585	--	342	--	--
FY 1986 Estimate	21	745	7	368	--	1,856	--	425	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Research and education are among the principal objectives and responsibilities of the Smithsonian. In order to foster and stimulate the pursuit and dissemination of knowledge, the Institution has promoted scholarly and academic ties with other learned institutions since its establishment and has offered its resources for learning--its collections, professional staff, libraries, laboratories and field sites--to the general public and to the academic community. These ties are developed and maintained through competitive awards for research projects, programs in higher education, symposia and seminars, and learning opportunities at the elementary and secondary levels provided by the Office of Fellowships and Grants (OFG), the Office of Smithsonian Symposia and Seminars (OSSS), and the Office of Elementary and Secondary Education (OESE). No program increase for these Offices is requested in FY 1986.

PROGRAM - I. The Office of Fellowships and Grants: With base funding of 11 workyears and \$328,000, the Office of Fellowships and Grants manages Smithsonian fellowships and related academic appointments and administers the Special Foreign Currency Program which provides grants to American institutions, including the Smithsonian itself, for research in "excess" foreign currency countries. Resources for administration of these programs are included here, as are costs of Institutional fellowships. The Special Foreign Currency Program is described in the separate section of this budget request for that appropriation.

Academic appointments and Smithsonian Foreign Currency Program grants are intended to enhance Smithsonian research and foster broad relationships between the Institution and universities, museums, and research centers throughout the United States and the world. Fellowships and internships enable the Smithsonian to encourage the work of new and established scholars, to profit from intellectual interchange with them, and to make available its research resources.

The National Collections in the Smithsonian's care, as well as the curators and scholars who study them, offer unparalleled resources for specialized study in many disciplines--resources that are not available at any university, but are essential for research efforts in many fields. University education is based in part on the study of manuscripts or printed material and reproductions of artifacts. At the Smithsonian, historical and anthropological objects, original works of art, natural history specimens, living animals and plants, and ecological systems are available directly for study. Thus, the Smithsonian provides a valuable complement to university education.

The Institution makes available its resources to students and scholars throughout the United States and abroad. Residential fellowships provide access to the full range of Smithsonian resources. Stipends are awarded throughout the Institution with nonappropriated Trust funds, enabling fellows to work in all research areas of the Institution and pursue interdisciplinary projects drawing upon the resources of several bureaus. In FY 1984, pre- and post-doctoral fellowship awards were made to 85 fellows from 52 colleges and universities bringing the total since 1965 to 1,205 fellows from 228 colleges and universities. Additional fellowships are offered through nonappropriated Trust funds or appropriated funds designated for the bureaus, providing research opportunities more closely tied to current bureau programs and interests.

In addition to fellowships for students and younger scholars, a few awards are offered at the senior level to scholars and scientists of distinction, breadth of intellect, and proven accomplishments. Now in its fifth year, the Regents Fellowship Program, supported by nonappropriated Trust funds, continues to bring distinguished visiting scholars to the Institution. To promote excellence in the management of cultural and scientific organizations, the Smithsonian established, in FY 1983, the James E. Webb Fellowships, named in honor of the distinguished former Administrator of the National Aeronautics and Space Administration and Regent Emeritus of the Smithsonian Institution. Awards are for persons from within and outside the Institution to pursue individual interests in formal academic and work situations.

The Office of Fellowships and Grants also coordinates Smithsonian academic internships by publicizing opportunities to students and organizations, distributing applications, administering internship stipends, and along with other Smithsonian offices and bureaus, assisting in the activities of the Smithsonian's internship council. In FY 1983, 65 students were awarded internship stipends. Of these, 23 minority students were supported with nonappropriated Trust funds as part of the Institution's efforts to increase minority participation in its academic and educational programs. In addition, three fellowships were awarded to minority faculty members. In January 1983, the Office also assumed responsibility for the Cooperative Education Program, which placed 13 students in positions throughout the Institution in FY 1983. This year 12 students began appointments. It is hoped that some permanent employment opportunities may develop through these efforts. The Institution will continue these special efforts through internships, faculty fellowships and cooperative education appointments.

II. Office of Smithsonian Symposia and Seminars - With base funding of 3 workyears and \$98,000, the Office of Smithsonian Symposia and Seminars designs programs linking the humanities and sciences, with special emphasis on new knowledge and its implications.

As an interdisciplinary center for bringing together the diverse academic worlds representing contemporary scholarship, the Office organizes projects serving advanced scholars, intermediate students, concerned professionals, and the serious lay public. Its programs combine the increase of knowledge with the diffusion of knowledge, through a broad variety of intellectual specialities, and help to link researcher, teacher, citizen, and youth preparing to assume the duties of citizenship. Organizing and administering the Smithsonian's international symposia series, continuing seminar series, individual working seminars, and special orientation activities, the Office's work focuses on themes of current significance attracting interdisciplinary attention.

*OPB File
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SMITHSONIAN INSTITUTION

Budget Justifications for Fiscal Year 1986



Submitted to the Committees on Appropriations
Congress of the United States

January 1985

REDIRECTION OF FY 1987 BASE FUNDING

<u>Source</u> <u>FY 1987 Base</u>	<u>\$000s</u>	<u>FY 1988 Redirected Use</u>	<u>\$000s</u>
Directorate of International Activities - Columbus Quincentenary Program Funds	200	To offset FY 1988 Quincentenary programs. <ul style="list-style-type: none"> °National Museum of American History °National Museum of Natural History °National Air & Space Museum °National Portrait Gallery °Hirshhorn Museum & Sculpture Garden °Smithsonian Institution Traveling Exhibition Service °Directorate of International Activities °Office of Folklife Programs 	200
Smithsonian Institution Libraries - Retrospective Conversion	200	Smithsonian Institution Libraries Collection Inventory of uncatalogued materials.	200
Anacostia Neighborhood Museum - Termination of Carver Theater Lease	35	Enhance Anacostia's research and exhibition capabilities.	35
Quadrangle:			
Sackler Gallery - One-time Inaugural Exhibition Costs	310	Annualization cost of FY 1987 Quadrangle-related positions.	371
Public Affairs - One-time Publicity Campaign Costs	31	°National Museum of African Art °Smithsonian Institution Traveling Exhibition Service	
Directorate of International Activities - One-time Computer Equipment Purchase	30	°Office of Protection Services °Office of Plant Services °Quadrangle Building Management	
TOTAL	4,526	TOTAL	4,526

2954

FY 1988 SALARIES AND EXPENSES

	<u>Workyears</u>	<u>Amount (\$000s)</u>
FY 1987 Base (Pending before Congress) /1	3,975	190,061 /1
Annualization of FY 1987 Quadrangle personnel	22	
Uncontrollables:		
-- Necessary Pay		2,627
-- Rent		118
-- Inflation		1,300
<u>In Priority Order:</u>		
-- STRI To maintain, administer, and support the research personnel of the Tupper Lab and Conference Center	8	107
-- NZP To hire animal keepers and support personnel, and fund the maintenance of the Zoo facilities	9	382
-- NMNH To conduct research on the anthropology, archeology and biology of the Arctic (Balance requested over target)	4	300
-- SAO Submillimeter astronomy (Balance requested over target)	2	296
-- NPG To hire an art conservator	1	25
-- CM/I NMNH - To increase maintenance support, and to refine the inventory of the collections	5	100
-- CM/I NMAH - To proceed with inventory refinement and to cover computer costs	5	93
-- NASM To hire a data base manager and buy computer equipment to further inventory reconciliation	1	40
-- NMNH To fund the Inventory program's computer usage and a position to monitor the inventorying	1	60
-- FGA Collections storage equipment and furnishings	0	100
-- NMAA To conduct fieldwork for the Inventory of American Sculpture (Balance requested over target)	0	100

/1 Appendix A details redirection of base resources.



	<u>Workyears</u>	<u>Amount (\$000s)</u>
-- OSP To hire an administrative officer	1	37
-- OSP To improve the Smithsonian's disposal of hazardous waste	1	112
-- OSP To provide industrial hygiene support for the asbestos abatement program	2	132
-- OSP To hire a fire protection engineer	1	42
-- OSP To establish a hazard communication program, as mandated by law	1	60
-- NSRC To provide program support	1	150
-- ODC To purchase computer equip. to improve project mgmt.	0	75
-- OSP To purchase computer equipment	0	71
-- Facilities Services - To develop and implement automated programs for the Office of the Director of Facilities Services and the Facilities Services organizations	0	15
-- NMNH To establish a program to maintain and upgrade NMNH's computer equipment	1	100
-- Accounting - For computer costs	0	150
-- Dir. Fac. Services - To improve facilities planning for the Institution	2	116
-- OPlantS - To eliminate the Office's base deficiency in salaries and benefits	0	540 <u>/1</u>
-- OPersA - To hire additional staff	2	56
-- OSS To hire additional staff and to cover support costs	2	159
-- Sackler - To staff the Museum's exhibition program	4	98
-- NMAfA - To preserve the Elisofon photographic collection	0	45
-- Sackler - To enhance and expand the exhibition program	0	150
-- DIA To support symposia, lectures, film programs, and related programs to complement the exhibition, "Tropical Forests: A Disappearing Treasure"	0	56

/1 This amount represents funds requested in addition to the proposed redirection of base resources detailed in Appendix A.



	<u>Workyears</u>	<u>Amount</u> <u>(\$000s)</u>
-- Constitution Bicentennial:	2	9 <u>/1</u>
NPG - To prepare exhibitions to commemorate the Bicentennial of the Constitution		
-- Columbus Quincentenary:	2.5	259 <u>/1</u>
NASM - To produce a world atlas composed of satellite images to commemorate the Columbus Quincentenary (1 workyear and \$36,000)		
NMAH - To plan an exhibition in commemoration of the Columbus Quincentenary (1 workyear and \$111,000)		
NMNH - To prepare variety of commemorative events for Columbus Quincentenary (1 workyear and \$90,000)		
NPG - To plan an exhibition for Columbus Quincentenary (\$20,000)		
HMSG - To plan and execute an exhibition to commemorate the Columbus Quincentenary (.5 workyear and \$27,000)		
SITES- To conduct research for an exhibition to commemorate the Columbus Quincentenary (\$90,000)		
DIA - To develop and publish educational packets on the Columbus Quincentenary (\$35,000)		
Folklife- To conduct research for a festival commemorating the Columbus Quincentenary (\$50,000)		
-- NMAA To conduct fieldwork for the Inventory of American Sculpture (Amount of \$100 requested within target)	0	75
-- CAL To conduct research in archeometry	1	70
-- NMNH To hire a Native American curator for the Dept. of Anthropology and to support the NMNH-NMAH Native American Coordinating Committee	1	43
-- NMAH Native American Program	1	37
-- SAO Submillimeter astronomy (Amount of \$296 requested within target)	0	219
-- FGA To enhance the Freer's exhibition program	0	101
-- NMNH To improve the condition of the permanent exhibition halls	9	285
-- ODC To improve facilities planning	2	68
-- Facilities Services - Automation costs	1	60

/1 This amount represents funds requested in addition to the proposed redirection of base resources detailed in Appendix A.

	<u>Workyears</u>	<u>Amount (\$000s)</u>
-- STRI - To furnish BCI & Naos	6	183
-- OPlantS - Automation	1	125
-- NASM To continue the space astronomy oral history project and the space telescope history project	1	33
-- NASM To accelerate the video disc production project	2	50
-- AAA To hire a research cataloguer and archival registrar	2	75
-- NZP To upgrade and replace equipment	0	100
-- NMNH For research on Arctic archeology (Amount of \$300 requested within target)	2	100
-- OPlantS - To improve the facility monitoring and energy management of the Office	0	200
-- OPlantS - To improve the building inspection program	1	150
-- NASM To fund the university program project	1	48
-- C-H To address the Museum's base deficiency	0	100
-- SIA To acquire storage rental space and shelving	0	64
-- SIL To provide on-line document delivery service	0	100
-- OSP Support costs	0	15
-- NMNH For the Science Outreach Program	4	125
-- NASM To upgrade the Museum's computer equipment	0	60
-- NMAH For computer costs	0	80
-- South Group To hire custodial workers, and to purchase cleaning equipment and supplies	3	50
-- NASM For carpet replacement	0	40
-- Hort. For tree replacement, to hire 3 gardeners, and to lease land	3	175
TOTAL, Salaries and Expenses	<u>4,098.5</u> ^{/1}	<u>200,972</u>

/1 An additional 8 workyears are requested with funds to be redirected within the Institution's base funding.



FY 1988 INSTRUMENTATION, FACILITIES PLANNING,
RENOVATION, RESTORATION and CONSTRUCTION
 (Not in Priority Order)


	<u>Amount</u> <u>(\$000s)</u>
<u>FY 1988 Instrumentation</u>	
-- MMT Conversion	525
 <u>FY 1988 Restoration and Renovation of Buildings</u>	
-- General repairs and improvements	605
-- Facade, roof, and terrace repairs	2,785
-- Fire detection and suppression systems	2,485
-- Access for the disabled, safety and security, and correction of hazardous conditions	1,885
-- Utility systems repairs and improvements	8,590
-- Other projects	<u>2,764</u>
TOTAL, Restoration and Renovation	19,114
 <u>FY 1988 Construction</u>	
-- F.L. Whipple Observatory Base Camp	4,500
-- STRI BCI lab and research facilities	2,800
-- Construction planning - Future year projects	<u>1,350</u>
TOTAL, Construction	8,650
 <u>FY 1988 Construction and Improvements, National Zoological Park</u>	
-- Old Hospital and research facility	3,000
-- R & R, Rock Creek Park	1,800
-- R & R, Front Royal	750
-- Entranceway and Olmsted Walk III	2,601
-- Olmsted Walk Landscape Plan	<u>670</u>
TOTAL, NZP Construction	8,821

REDIRECTION OF FY 1987 BASE FUNDING

<u>Source</u> <u>FY 1987 Base</u>	<u>\$000s</u>	<u>FY 1988 Redirected Use</u>	<u>\$000s</u>
Smithsonian Environmental Research Center Elimination of Rockville Facility	2,493	Research programs in National Museum of Natural History, Smithsonian Tropical Research Institute and the National Zoological Park and the Smithsonian Environmental Research Center, Edgewater.	2,493
National Museum of American History - Constitution Bicentennial Exhibition Funding	450	National Museum of American History exhibit reinstallation program.	227
		National Museum of American History Center for the Study of American History.	76
		National Museum of American History Master Plan and relocation of collections.	147
Office of Symposia and Seminars - Constitution Bicentennial Symposium Funding	100	National Portrait Gallery Constitution Bicentennial Program.	100
Office of Elementary and Secondary Education - Constitution Bicentennial Educational Program Funding	11	National Portrait Gallery Constitution Bicentennial Program.	11
Office of Protection Services - Elimination of Summer Hours	310	Office of Protection Services base shortage.	310
Office of Protection Services - Completion of SI Proprietary Alarm System	356	Office of Protection Services base shortage.	282
		Office of Plant Services base shortage.	74

MEMORANDUM

September 12, 1984

TO: Heads of Bureaus and Offices
FROM: Jon Yellin 
SUBJECT: FY 1986 OMB Budget Submission

Attached is your copy of the Institution's FY 1986 Budget which was submitted to the Office of Management and Budget on August 31st. We appreciate your cooperation and assistance in meeting our deadlines.

In following its long-established policy for publishing educational materials based on its symposia and other programs, OSSS works toward extending the audience and life of its themes in diversified diffusion of knowledge. The Smithsonian's eighth international symposium, "High Technology and Human Freedom," will be available in print in two books (one published by the Smithsonian Institution Press and one by a commercial trade house), in various reprints, in a specially edited academic guide for use in liberal arts curricula, and in a videocassette drawing on the seventh symposium, "How Humans Adapt: A Biocultural Odyssey." The Office also makes available to schools and libraries souvenir programs from earlier events and a specially packaged "Kin and Communities" cassette kit.

In 1984, the Office's attention was directed toward preliminary planning for the observance of the Bicentennial of the Constitution in 1987. Special attention will be placed on the Bill of Rights and the Federalist Papers and their roles in the rise of modern self-governing societies.

III. Office of Elementary and Secondary Education - With base funding of 7 workyears and \$319,000, the primary function of the Office of Elementary and Secondary Education is to make Smithsonian resources for learning and teaching available to local and national school communities and other specialized audiences. By working with other Smithsonian education offices, OESE is the one Smithsonian bureau in a position to provide pan-Institutional programming for elementary and secondary schools. Activities include workshops and seminars for teachers, publications and audio-visual materials for teachers and students; a summer intern program for high school students; and a Career Awareness Program for minority young people from the District of Columbia Public Schools. The Office also coordinates a wide range of services for disabled visitors to the Smithsonian.

OESE offers a number of programs to encourage cooperation and exchange of information between the Smithsonian and schools in the Washington, D.C. area. Two publications--"Let's Go" (a monthly newsletter) and "Through Looking to Learning: The Museum Adventure" (an annual booklet)--inform teachers about the variety of educational opportunities available at the Smithsonian to teachers and students at all grade levels. These are sent to approximately 11,000 teachers in the Washington, D.C. area. During FY 1983, a workshop and seminar program for teachers attracted more than 900 participants to 38 programs, including six summer courses enabling the development of curriculum units based on the Smithsonian's collections. Summer programs for teachers include an orientation series introducing participants to a variety of Smithsonian resources, as well as a series of in-depth, one-week seminars on such topics as teaching life sciences through direct observation, museums and language development, and teaching American cultural history through art.

In addition, a Career Awareness Program (CAP) for the District of Columbia Public Schools introduces minority young people to career opportunities at the Smithsonian as part of the Institution's affirmative action effort. A total of 120 students from three District of Columbia high schools participated in the CAP during the 1983/84 school year. Another OESE program for D.C. Public School students is "Exploring the Smithsonian," which served more than 4,000 young people in FY 1984.

To share these same teaching concepts with a national audience, the Office distributes ART TO ZOO, a classroom newspaper, to more than 50,000 teachers and museum education departments throughout the United States; and circulates free of charge a slide loan package entitled "The Museum Idea," which reached an estimated 1,500 students during the school year, 1983-84. During the summer of 1983, OESE sponsored, in cooperation with the University of Virginia, a graduate level course on "Using Museums to Teach Writing" for a national audience of school librarians, teachers, and curriculum specialists. The effectiveness and popularity of these national outreach programs are demonstrated by both

formal evaluations and the continued demand for these services by teachers throughout the United States.

In FY 1984 and FY 1985, a series of OESE-sponsored "Regional Workshops" is being given in communities across the United States for the purpose of promoting the use of museums as educational resources. Among the regions taking part are Tidewater, Virginia; Gulf Coast Mississippi; Charleston, South Carolina; and Oakland, California. Approximately 2,000 teachers will be reached by this program in the course of an 18-month period. A Summer Intern Program, now in its tenth year, gives 30 graduating high school students an opportunity to participate in a learning service program at the Smithsonian, working behind the scenes with curators and other museum professionals. High school students from all 50 states and the District of Columbia are eligible to apply for admittance to either of two five-week sessions. In addition, a new publishing project--to produce a periodical designed to share information about the Smithsonian's research and collections with students in schools across the Nation--is being undertaken by OESE and the Office of Public Affairs.

The Office continues its work to make Smithsonian programs accessible to disabled visitors by providing interpreters at special events, lectures, and tours, as well as by providing guidance to the various Smithsonian museums who were seeking ways to provide more effective programming for retarded, hearing and sight impaired visitors. In addition, sign language classes are given to teach Smithsonian educators, guards and other employees how to communicate with hearing impaired visitors; a simplified guidebook to the Smithsonian was produced for retarded and hearing impaired persons; and an "outreach kit" was developed to encourage reading and writing among language-delayed students. OESE will maintain these specialized services to ensure better access to Smithsonian resources for disabled visitors.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. Office of Fellowships and Grants: These are provided from allotments which are designated primarily for the Institution's fellowship program. In FY 1984, 85 awards have been made to fellows from 52 colleges and universities. Since 1965, 1,205 awards have been made to fellows from 228 schools (estimated expenditures of \$1,175,000 in FY 1985 and \$1,410,000 in FY 1986).

In addition to fellowships for students and younger scholars, a few awards are offered annually at the senior level to scholars and scientists. Now in its fifth year, the Regents Fellowship Program continues to bring distinguished visiting scholars to the Institution (estimated expenditures of \$130,000 in FY 1985 and \$140,000 in FY 1986). To promote excellence in the management of cultural and scientific organizations, the Smithsonian established the James E. Webb Fellowships (estimated expenditures of \$25,000 in FY 1985 and in FY 1986). Funding is provided to cover the stipends for minority internships and faculty fellowships (estimated expenditures of \$80,000 in FY 1985 and \$85,000 in FY 1986). Starting in FY 1985, funding will be provided for three new fellowship programs: (1) an integrated program aimed at Native American studies and people (estimated expenditures of \$50,000 in FY 1985 and in FY 1986); (2) a three-year Masters program for students with postgraduate course work and intern experience in conservation laboratories (estimated expenditures of \$90,000 in FY 1985 and in FY 1986); and (3) a two-year pilot program to support a cooperative effort with Howard University (estimated expenditures of \$25,000 in FY 1985 and in FY 1986).

An allotment supports a small portion of the administration of the Office of Fellowships and Grants academic programs and administrative costs for the Council of American Overseas Research Centers (estimated expenditures of \$88,000 in FY 1985 and \$87,000 in FY 1986). Funds also are used to support the Cooperative Education Program

for graduate and undergraduate students on study-related work appointments (estimated expenditures of \$33,000 in FY 1985 and \$35,000 in FY 1986).

II. Office of Smithsonian Symposia and Seminars: An allotment is provided for salary and support costs for two staff members (estimated expenditures of \$119,000 in FY 1985 and \$122,000 in FY 1986).

III. Office of Elementary and Secondary Education: OESE's summer intern program gives 30 graduating high school students an opportunity to participate in learning-service programs in the Smithsonian museums. In addition, the Career Awareness Program for the District of Columbia Public Schools introduces minority young people to career opportunities at the Smithsonian (estimated expenditures of both programs are \$112,000 in FY 1985 and \$122,000 in FY 1986).

Restricted Funds - I. Office of Fellowships and Grants: These consist of restricted endowments, gifts and grants from individuals, foundations, organizations or corporations which specify their use for a particular project. For example, an endowment from the Walter Rathbone Bacon Scholarship supports awards and research on fauna from outside the United States (estimated expenditures of \$15,000 in FY 1985 and in FY 1986). A Rockefeller Foundation grant will support fellowships for the National Museum of African Art and the Sackler Gallery (estimated expenditures of \$50,000 in FY 1985 and in FY 1986).

II. Office of Smithsonian Symposia and Seminars: Funds are being sought to support this Office's participation in the Festival of India in June 1985 (estimated expenditures of \$41,000 in FY 1985); and for the planning of a seminar for the observance of the Bicentennial of the Constitution (estimated expenditures of \$47,000 in FY 1986).

III. Office of Elementary and Secondary Education: Since 1979, the program, "Exploring the Smithsonian" has been coordinated by OESE for the District of Columbia Public Schools. The program is partially supported by a grant from the Gwendolyn Cafritz Foundation and provides bus transportation to bring junior high school students to Smithsonian museums to take part in a selection of interdisciplinary lessons on curriculum-related subjects in art, history and science. OESE works with the various Smithsonian education offices to plan and maintain the program activities. In FY 1984, more than 4,000 students participated in "Exploring the Smithsonian" during the 1983/84 school year (estimated expenditures of \$23,000 in FY 1985 and \$24,000 in FY 1986). A cooperative effort between OESE and the Children's Hospital National Medical Center, begun in FY 1980 with support from the Smithsonian's Educational Outreach fund, is currently developing activity packets, based on the Smithsonian collections, for distribution to hospitalized children between the ages of five and eighteen throughout the United States. Corporate funding is now being sought to enable completion of this project in FY 1985 (estimated expenditures of \$24,000 in FY 1985).

An anthropology curriculum kit, supported by a variety of unrestricted funds, was developed by OESE in cooperation with the National Museum of Natural History's Department of Anthropology and the Smithsonian Institution Press. During the 1983/84 school year, it was tested in 800 classrooms in Alaska and other parts of the United States, and at the same time OESE is seeking corporate funding to support the production of an entire series of such curriculum packets for secondary schools (estimated expenditures of \$69,000 in FY 1985 and \$133,000 in FY 1986). In addition, a new publishing project--to produce a periodical designed to share information about the Smithsonian's research and collections with young adolescents in schools across the nation--is being undertaken by OESE and the Office of Public Affairs (estimated expenditures of \$115,000 in FY 1985 and \$155,000 in FY 1986).

COLLECTIONS MANAGEMENT/INVENTORY PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**		Amount	
			FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1984 Estimate	38	834	--	--	--	--	--	--	--	--
FY 1985 Estimate	38	857	--	--	--	--	--	--	--	--
FY 1986 Estimate	38	1,157	--	--	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - In June 1983, the Institution completed the first inventory of its collections. The inventory was conducted under a policy established by the Smithsonian in 1978 as part of a collections management program designed to ascertain the full extent of the Institution's holdings and to ensure continuing accountability by the maintenance of comprehensive records of those holdings. For FY 1986, a program increase of \$300,000 is requested to resolve problems and meet opportunities that have arisen during the course of the Collections Management/Inventory Program.

PROGRAM - For the initial inventory, each museum established schedules, procedures and information requirements appropriate to the size and nature of its collections. Because of the comparatively smaller numbers of objects and specimens held, most of the museums (National Museum of African Art, Freer Gallery of Art, Hirshhorn Museum and Sculpture Garden, National Portrait Gallery, National Museum of American Art, National Air and Space Museum and the National Zoological Park) were able to complete their inventories within the five-year period using only their base resources. Additional funding, made available through appropriations beginning in FY 1979, was used each year to supplement base resources of the National Museum of Natural History/Museum of Man, the National Museum of American History and the Cooper-Hewitt Museum to assist those museums in addressing special inventory problems. The National Museum of Natural History/Museum of Man, with approximately 84 million specimens, and the National Museum of American History, with approximately 16 million objects, required additional resources to manage the enormously large volumes of materials to be inventoried. The Cooper-Hewitt Museum, whose collections had not been inventoried prior to their transfer to the Institution, required extra assistance to create an accurate and comprehensive current record of its collections. Effective utilization of the inventory record requires that these three museums continue: to refine the vast amount of data accumulated during the inventory process; to maintain the record on a current basis; and for particularly important collections, to reconcile the new record with the older catalogue information.

The full benefit of the inventory data can be realized only after it has been used to correct and improve earlier data accumulated as the collections were acquired. During the course of the inventory, those museums having smaller collections (from about 3,000 to 30,000 items) were able to conduct a "reconciliation" process, which involved matching inventory records with pre-existing records, identifying discrepancies between the two sets of documents. Efforts then were initiated to search out objects or records that appeared to be missing or misplaced. As discrepancies are resolved, inventory and catalogue records are adjusted and brought into agreement.

The existing base of \$857,000 will be used in FY 1986 to enable selected museums to continue the process of reconciliation, refinement and maintenance of inventory data. Each of these museums has devised and is pursuing specific plans for these processes. Reallocation of Collections Management/Inventory funds (to be incorporated into the base resources of the museums with the largest and most complex collections) has been deferred pending the ongoing refinement process. The chart below indicates base resources of the National Museum of Natural History/Museum of Man, National Museum of American History, and the Cooper-Hewitt Museum, that are applied to collections management efforts. Also included in the chart are those portions of the FY 1985 request to Congress and the FY 1986 estimate that will be allocated to these selected museums, the Office of Information Resource Management and the Office of the Registrar.

COLLECTIONS MANAGEMENT/INVENTORY PROGRAM

(Dollars in Thousands)

	<u>Natural History</u>	<u>American History</u>	<u>Cooper- Hewitt</u>	<u>Other</u>	<u>Total</u>
FY 1985 Base Resources	\$559	\$ 800 ^{/1}	\$ 50	\$ -	\$1,409
FY 1985 Estimated Portion of \$857,000 ^{/2}	<u>404</u>	<u>317</u>	<u>76</u>	<u>60</u> ^{/3}	<u>857</u>
TOTAL FY 1985	<u>\$963</u> =====	<u>\$1,117</u> =====	<u>\$126</u> =====	<u>\$ 60</u> =====	<u>\$2,266</u> =====
FY 1986 Base Resources	\$559	\$ 741	\$ 50	\$ -	\$1,350
FY 1986 Estimated Portion of \$1,157,000 ^{/4}	<u>415</u>	<u>541</u>	<u>76</u>	<u>125</u> ^{/5}	<u>1,157</u>
TOTAL FY 1986	<u>\$974</u> =====	<u>\$1,282</u> =====	<u>\$126</u> =====	<u>\$125</u> =====	<u>\$2,507</u> =====

^{/1} Includes registration functions.

^{/2} FY 1985 Congressional Request.

^{/3} In FY 1985, this amount is planned to be allocated as follows: Office of Information Resource Management, \$55,000; and Office of the Registrar, \$5,000.

^{/4} Does not include necessary pay or inflation.

^{/5} For FY 1986, this amount is planned to be allocated as follows: Office of Information Resource Management, \$50,000; Office of the Registrar, \$5,000; and Archives of American Art, \$65,000.

The National Museum of Natural History/Museum of Man conducted its initial baseline inventory at three levels: specimen level, covering individual specimens of outstanding scientific merit and/or high intrinsic value; the batch level, covering medium-sized groups of related specimens; and the collection level, consisting of large assemblages of related materials. In the last two instances, the number of specimens covered by each inventory record was estimated following careful sampling of each group of materials.

The National Museum of Natural History made a good deal of progress in its collection inventories during FY 1984. Much effort was put into consolidating the inventory gains made during the previous five years while preparing for the future moves of many

inventoried collections to the Museum Support Center. Substantial progress was made on development of an automated registration system which will be implemented early in FY 1985, and the Museum contributed many hours to committees and studies aimed at the future development of the Smithsonian's new Institution-wide Collection Information System.

High priority was given in the Department of Anthropology in FY 1984 to resolving discrepancies identified in previous inventory years when the catalogue was matched with the shelf inventory. It is expected that by FY 1985 discrepancies will be reduced to one or two percent of the total collection. The exact count of remaining discrepancies won't be known until late in 1984, when the shelf inventory file and the file of catalogue data are combined into a single file. The inventory of type specimens in the Department of Botany is in a maintenance phase, but new specimens continue to be added--1,583 to date in FY 1984. Considerable progress also was made in FY 1984 on the inventory of 56,000 specimens in the Francis Drouet Collection of blue-green algae, which is the most important collection of such specimens in the world. In the Department of Entomology, a shelf inventory of over 80,000 tick specimens was completed and will soon be appended to the catalogue data which was computerized in the mid-1970s. Reconciliation of the collections of gems and minerals in the Department of Mineral Sciences received heavy support and is nearly completed. The concentrated reconciliation process will be completed in FY 1984.

The Museum also has made considerable progress in automating its registration system, which is important to inventory control. A prototype system was developed in the middle of the year, and a full production system is being programmed to run on a mini-computer. The system allows authorized curators and technicians to interactively enter and update registration transactions (loans, accessions, etc.) on terminals in their units and print shipping invoices, letters and other documents immediately. The Registrar's Office can access the same data for review purposes, to add additional data and to print various registrarial documents. The shipping office can also access the data to add shipping numbers and to find out where packages are waiting to be picked up in the departments. Museum-wide statistical summaries for management purposes can be printed from the file as well as data of use in preparing Smithsonian Year, the Institution's annual report. The inventories of gems and minerals will interact with the file, ensuring that inventory records are updated immediately when specimens are loaned or exchanged. This system will be functional by December 1984, and will be used until the Institution's Collection Information System is ready.

In FY 1986 and beyond, the National Museum of Natural History/Museum of Man will give priority to maintaining the inventory as the collections change. Some of this maintenance effort is associated with the move of specimens to the Museum Support Center which requires changes in specimen location data and certain other inventory data. Other maintenance work will be done when the computer files are moved from the current system onto the new Collection Information System. Some of the requested resources also will be devoted to enhancement of the inventory data for collections management and scholarly purposes by making data more precise and improving its value for information retrieval purposes. The Museum also will undertake specimen-level inventories of collections inventoried previously at the batch or collection level, with priorities being given to collections going to the Museum Support Center and collections that are highly active or of high interest to scholars. Examples of such collections are the Maryland collection of fossil plants, plants from the Washington metropolitan area, the orchid collection, selected fossil mammals and certain fossils to be moved to the Museum Support Center.

In FY 1984, all collecting units in the National Museum of American History received printouts with which they were able to verify inventory data collected during the five-year inventory. In FY 1985, the Museum will begin its refinement effort which will identify where group records should be broken down into individual records and where

improperly recorded data or insufficient information must be corrected. Under the refinement process, the National Numismatic Collection and the National Philatelic Collection will receive the greatest amount of attention due to the vast numbers of items in these collections. The Museum anticipates spending four years to refine specific records of the National Numismatic Collection and assign museum numbers while they continue to deal with a backlog of items which are to be entered into the computerized inventory file; photography of selected objects for improved security will be completed. The Museum, as part of its five-year plan will continue to reorganize the holdings of the National Philatelic Collection, establish a master collection, and reacquisition and recatalogue for documented registration. Also in FY 1985, the National Museum of American History will begin a five-year effort to clean asbestos dust from close to one million museum objects while simultaneously refining inventory data for some of those objects. About ten percent of the objects at the Suitland facility have less than satisfactory accompanying descriptions, largely because of the asbestos health hazard present in those buildings when the inventory was conducted. In FY 1985, the Museum will begin to recover, sort and refile pre-1958 accession records currently held by the Smithsonian Archives; and to assemble, consolidate and review other accession records and catalogue books. This reconciliation effort, along with refinement of inventory data, will continue into FY 1986, which would include completion of the assembly, consolidation and review of the Office of the Registrar records and refinement of inventory records for objects being cleaned at Suitland.

At the Cooper-Hewitt Museum, there are three main collections management/inventory projects scheduled for FY 1985 and FY 1986: (1) cyclical physical inventories; (2) reconciliation of discrepancies revealed by matching FY 1978 - FY 1983 physical inventory records to accession records; and (3) refinement of data in records for each object.

Each department will spend one day per week with the assistance of the registration technician to take a physical inventory of their collections. It is estimated that this will result in six- to seven-year cyclical inventories. The resolution of problems revealed by the records matching process is an ongoing part of the inventory and general collections management. Since the bulk of the collections came from the Cooper Union Museum unexamined, particular attention will be paid to reconciliation for the next seven years as cyclical inventories take place. As problems are solved by the curatorial departments, records will be amended.

The Wallcoverings Department records will be brought on-line by the end of August 1984, and data will be refined and object locations added to the system during FY 1985. Similar work for the Decorative Arts Department (consisting of 26,000 objects) will be started during FY 1985. Due to the amount of data to be collected and entered, the size of the collection compared to staff, and lack of terminals at Cooper-Hewitt, it is likely that this project will be completed after FY 1986. (For example, creation of a location index will partly be done as cyclical inventory takes place.) The Drawings and Prints Department data, which already includes locations, will be updated. Recent acquisitions data will be updated in a common format as necessary.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, the Institution requests an increase of \$300,000 for the Collections Management/Inventory Program to resolve complex inventory problems associated with particularly valuable and large collections; to complete basic inventory work previously deferred because of identified unhealthful working conditions; to accelerate the process of refining collections-related records by use of automated data processing techniques; and to conduct inventory work in nonmuseum units holding valuable archival type materials.

For inventory and collections management purposes, certain classes of collections, such as philately and numismatics, present difficult problems. These collections are exceedingly valuable and enormously large, but data concerning the individual items must

be captured at a level that permits clear identification of every item. A variety of techniques, including creation of photographic records, are available to accomplish this work. Unless additional resources are applied to this effort, it will not be possible to gain management control of these collections within a reasonable time frame.

A further inventory problem, the resolution of which will require additional resources, concerns the fact that certain collection storage areas have been contaminated with asbestos. Special equipment and testing procedures are necessary to permit staff access to these areas. The inventory records will not be complete until the objects in contaminated storage are recorded and accounted for in detail and the resulting information reconciled with existing catalogue data.

With more than 100 million objects throughout the Institution, cross referencing of inventory data with earlier records has proved to be an enormous task requiring extensive use of staff and data processing resources. A portion of the additional requested funds will be applied to the refinement of all collection record files and the establishment of a comprehensive collections management and records keeping process that will permit all future collections transactions to be administered on a current basis.

Finally, there is a critical need to establish collections inventory procedures for the growing collections in several nonmuseum units of the Institution, particularly its archival repositories which hold irreplaceable documents and, at times, artifacts related to the history of American art and artists, Native Americans, and the Smithsonian itself. These inventory procedures are essential for the recording of the contents of all collections in greater detail and for determining the condition of the collections so that appropriate conservation and preservation measures can be planned for their protection.

MUSEUM SUPPORT CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTP**	Amount	FTP**	Amount
			FTP**	Amount	FTP**	Amount				
FY 1984 Estimate	34	5,251	--	--	--	355	--	--	--	--
FY 1985 Estimate	38	9,180	--	--	--	315	--	--	--	--
FY 1986 Estimate	78	5,880	--	--	--	--	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - This line item of the budget request for FY 1986 consists of the administrative and building management functions of the Museum Support Center, the activities associated with preparing collections for the move and their transport, and the equipment for the laboratory and storage areas of the Center. Funding for Smithsonian units which will operate in the Museum Support Center or provide support services for the Center is contained in the appropriate sections of this budget document. These units are the Conservation Analytical Laboratory, the Museum of American History, the Smithsonian Institution Libraries, the Office of Protection Services, the Office of Plant Services, the Office of Printing and Photographic Services and the Office of Horticulture.

For FY 1986, an amount of \$4.2 million is requested to make possible acquisition of the final segment of individual storage units needed to complete the planned storage system (\$3.1 million) and carry out the planning and design of the equipment that will occupy the remaining 39 percent of the available storage space and initiate the next phase of equipment purchase (\$1.1 million). This equipment, to be added over the next few years, will accommodate the growth of collections of the National Museum of Natural History/Museum of Man and other Smithsonian museums. The requested level of funding represents a decrease of \$3.3 million from the anticipated FY 1985 appropriation. For FY 1986, the Institution also will require 40 workyears for temporary employees to perform tasks associated with the move of the collections.

PROGRAM - The Museum Support Center (MSC) provides a total of 251,000 net assignable square feet of which 146,000 are for storage of museum collections and 105,000 for laboratory, work area, conservation training, and building maintenance and protection services. Several individual bureaus and units of the Institution will make use of the Center. The National Museum of Natural History/Museum of Man (NMNH/MOM) will utilize the largest amount of both laboratory and storage space in the Center. Space also has been assigned to the National Museum of American History (NMAH), and the Conservation Analytical Laboratory (CAL) occupies a substantial share of the laboratory wing for its conservation treatment, scientific analysis and training functions.

Building construction at MSC has been completed with the exception of a few minor items on which work is continuing. Work has begun to prepare and pack the collections scheduled to be relocated from the Mall. At the Center, these "initial move" collections will be placed in storage equipment, of which portions are now being acquired and

installed, and which will occupy 61 percent of available storage space at MSC. The storage equipment and the problems associated with its cost are discussed more fully below. The remaining 39 percent of MSC storage space will be used to meet future collections growth of the NMNH/MOM and critical storage needs of other Smithsonian museums.

MSC Administration and Facilities Management

With base resources of 6 workyears and \$305,000, the Office of the Director of MSC is responsible for administrative oversight and building management functions at the Center and for coordination of the activities of user and support units. This Office administers the automated data processing center used for registrarial and collections management activities and for research and informational purposes required by the occupants. The Office also enforces the procedures established to control and account for the flow of collections into and out of the Center and to ensure the safety of the collections against pest infestations and other hazards.

Base resources of 32 workyears and \$625,000 support the building management functions of MSC. Under the general supervision of the Office of MSC's Director, the Office of the Facilities Manager is responsible for providing shipping and receiving services, for moving equipment and objects, and for cleaning and maintaining the laboratory, collections processing and storage areas of the Center. Cleanliness of the facility at all times is a basic requirement of its successful operation.

Laboratory and Operational Equipment

With funds of \$4.5 million appropriated in FY 1981 through FY 1984, (supplemented by \$750,000 of the Institution's Trust funds), the Institution has made one-time purchases necessary to equip MSC laboratories and work areas. As of mid-1984, many of these laboratories were in operation. These include the scientific analysis laboratories of CAL as well as its specialized paper, paintings, objects and furniture conservation laboratories; the plant mounting unit of the Department of Botany, the tick laboratory of the Department of Entomology, the histology laboratory of the Department of Vertebrate Zoology, the Paleobiology laboratory, the Anthropology processing and conservation laboratories, all of NMNH/MOM; and the conservation laboratory of NMAH. The MSC branch library of the Smithsonian Institution Libraries, which will serve all occupants, is also in operation. Other laboratories are nearing completion and are planned to be operational early in FY 1985. Full utilization of several of these facilities will not occur, however, until collections have been moved to the Center.

Move of the Collections to the Museum Support Center

The move of collections from the National Museum of Natural History/Museum of Man and the National Museum of American History to the Museum Support Center is unprecedented in the museum community in terms of volume, the characteristics of the collections, their variety and the distance of the move. NMNH/MOM alone will send millions of objects and specimens to the Center. Actual transfer of the collections will occur over a period of several years and will begin as soon as storage equipment, portions of which are now under contract, has been installed in the four storage pods.

In preparing for this enormous task, the Institution solicited advice from moving specialists and from museological sources to establish the most effective and safest methods for transporting the collections. Using the information obtained, a variety of specific techniques keyed to the characteristics of the collections were selected for such critical activities as packaging, palletizing and transporting. A major step in the preparatory work for the move was the completion in January 1983 of a detailed schedule for each phase of the operation. This schedule was developed by using the

principles and techniques of the "Critical Path Method" (CPM) for project planning. All relevant data for this complex schedule has been automated so that it can be updated readily as move-related tasks are addressed by the many museum departments and divisions involved and as MSC becomes ready to receive the collections.

Funds in the amount of \$1.85 million were appropriated in FY 1983 and FY 1984 to enable the Institution to ready the collections for relocation and to perform other essential work prior to the move. Starting in FY 1983, temporary personnel were employed to clean and stabilize objects and specimens, pack them, and move them within the museums to staging areas. Some objects also require conservation treatment before they can be relocated. All items are handled with great care and under constant supervision. Additionally, supplies of packing materials and moving equipment, including three motor vans, were acquired. The vans, which have air-ride suspensions and environmental systems as safeguards, will give the Institution control of the collections while they are in transit.

Because of their size and complexity, the collections of the Department of Anthropology of NMNH/MOM have been dealt with first. One of the exhibit halls in the Museum has been closed to the public and converted into a staging area for the anthropology collections. More than 9,000 southwestern Native American pottery items have been removed from the attic of the Museum and are being processed for the move in this hall. In other areas of the Museum, approximately 800 ethnological objects, including 300 over-sized items, have been readied for transport. Large numbers of archeological objects from northeastern North America already have been moved to the Anthropology Processing Laboratory at MSC where they will be held temporarily until the three-tiered storage equipment is installed in Pod 1. Work on the rest of the anthropology collections will proceed according to the CPM schedule and relocation can begin as soon as the necessary storage equipment is available. It is expected that the transfer of these collections to MSC will require a period of at least three years.

In the summer of 1983, work began at several locations to prepare "wet" collections (those stored in alcohol) for relocation to Pod 3 which was specially designed for such collections. This work included relabeling certain lots of specimens, cleaning the specimen jars, and procurement of appropriate packing supplies. The storage system for Pod 3 now is scheduled for completion late in 1984, about one full year later than originally planned. This delay was occasioned by problems of coordinating the installation and testing of the many individual components required for the three-tiered storage structure. The move of "wet" collections will begin as soon as this installation is approved.

The move of all other collections to be relocated is programmed to begin late in calendar year 1985 when the necessary collections storage equipment is scheduled to be available. Most of these moves are projected to be completed in calendar years 1986 and 1987. The present schedule for the relocation of the collections of NMAH indicates a completion date in calendar year 1988. At the present time, additional planning and specific preparation for all these moves is under way in each of the responsible units, in keeping with the CPM schedule.

Museum Support Center Storage Equipment

Space for storage of museum collections at the Museum Support Center is provided in four discrete sections or pods of the building, each containing approximately 36,500 square feet of floor area and having a ceiling height of 26 feet. Ultimately, over seven-eighths of the storage area will be occupied by a storage equipment system that has been designed to permit efficient, high density storage of the collections on three eight-foot high storage levels, similar to multistorage library stacks. The system uses fixed self-supporting metal racks to hold a variety of shelves, drawers and enclo-

tures as needed to meet the specific requirements of each of the collections; the system represents a unique application of industrial storage technology to museum purposes. The Institution has worked in close conjunction with the General Services Administration (GSA) and an architectural/engineering team in the planning and contracting activities required for the acquisition and installation of the system.

Approximately one-eighth of the available storage area (one-half of one pod) will be occupied by a somewhat different storage system designed to receive unusually large items (whale skulls, carriages, etc.). This "high-bay" storage equipment is similar to that used by the Institution in other storage locations.

Cost projections for the amount of high-density storage equipment needed for the initial move were based on data provided by consultant engineers retained by GSA and totaled \$11.6 million to be funded in increments over a period of five years from FY 1981 through FY 1985. The Smithsonian initially established an estimate of \$425,000 for the high-bay storage equipment with the data provided by consultant engineers and its own prior experience with similar equipment. Events have proven that in both instances costs for the storage system were grossly underestimated.

The revised cost of the high-density system for the initial move is \$20.8 million. This price is based on low bids received following solicitation procedures conducted by GSA, adjusted costs for architectural/engineering fees, project management costs, contingencies and escalation factors for unit price items (shelves, drawers and enclosures) required to complete the system. Although the design of the storage equipment for "wet" collections in Pod 3 could be expedited because of its uniform shelving plan, design of the rest of the three-tiered system for the "dry" collections in Pods 1, 2 and 4 proved to be far more complex than originally foreseen. This part of the system required planning for systematic placement of some 85,000 individual storage units of varying sizes and capacities to meet the needs of specific collections.

The revised estimate for the high-bay storage equipment has risen to \$1.5 million. This revision resulted from a need to incorporate unanticipated additions such as expanded air distribution systems, sprinkler and other protective systems and special high-lift equipment for the high-bay storage system.

From FY 1981 through FY 1985, the Institution is expecting to receive a total of \$18.0 million of appropriated funds (\$17.5 million for the high-density system and \$.5 million for the high-bay system) for the storage equipment required for the MSC initial move. The Institution also has reprogrammed \$1.2 million from other appropriated funds, producing a total of \$19.2 million available against a projected total cost of \$22.3 million.

With available funds appropriated through FY 1984, contracts have been awarded by GSA to install the initial move equipment (structural framework and shelves) for the "wet" collections in Pod 3, and for the structural framework only of the storage system for the "dry" collections in Pods 1, 2 and 4. Work planned to be completed in FY 1985 includes procurement of a portion of the required unit price items for Pods 1, 2 and 4 and installation of the high-bay system. These operations are essential if schedules developed for the relocation of collections to the Center are to be met.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, the Institution is requesting an amount of \$4.2 million (a decrease of \$3.3 million from the anticipated FY 1985 appropriation) for storage equipment purposes at the Museum Support Center. Of this amount, \$3.1 million is required to complete the system for the initial move through acquisition of the requisite number of individual storage units to hold the collections to be moved to MSC. Without these units, the necessary storage capacity in the system will not be achieved. Deferred acquisition of these units will result in increased

costs due to escalation factors included in the bid document. The balance, \$1.1 million, is requested to enable the Institution to proceed with detailed planning for the utilization of the remaining storage space at MSC and initiate the next phase of equipment purchase. This equipment will be used to accommodate collections growth of NMNH/MOM and to meet the increasingly critical storage needs currently felt by other Smithsonian bureaus. Planning for the use of this space should begin as soon as possible.

For FY 1986, the Institution also will require 40 workyears for temporary employees to perform tasks associated with the move of the collections. Base funding of \$750,000 available for the move will accommodate these workyears. Major portions of the storage system are expected to be available during this fiscal year and relocation activities will be fully under way. All move related work will be performed in accordance with Critical Path Methods schedules that have been established for the relocation process.

NONAPPROPRIATED SOURCES OF FUNDING

Unrestricted General and Special Purpose Funds - An allotment of \$750,000 was provided to purchase special laboratory equipment for the Conservation Analytical Laboratory. Approximately \$435,000 will be spent through FY 1984 with the balance of \$315,000 to be spent in FY 1985.

ADMINISTRATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount					
FY 1984 Estimate	254	11,779	170	7,913	--	122	--	138	--	--
FY 1985 Estimate	256	12,121	173	8,031	--	543	1	511	--	--
FY 1986 Estimate	267	12,123	175	8,309	--	541	1	612	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Administration activity grouping includes central management oversight and services 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 which serve the Institution. Included among these are Accounting and Financial Services, Audits, Business Management, Congressional Liaison, Contracts, Equal Opportunity, Facilities Services (responsible for Design and Construction, Plant Services, and Protection Services, all separately justified) and Grants and Risk Management. Other offices comprising this grouping include Information Resource Management, Management Analysis, Personnel Administration, Printing and Photographic Services, Programming and Budget, Public Affairs, Special Events, Supply Services and Travel Services. The funding for the International Exchange Service and the Workers' Compensation account is included here. As a grouping, 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. Some offices, however, such as Business Management, Contracts and Grants and Risk Management are funded entirely with Trust funds reflecting the nature of their work.

For FY 1986, an increase of 11 workyears and \$375,000 is requested of which 3 workyears and \$54,000 are related to support for programs and activities in the Quadrangle. The balance of 8 workyears and \$321,000 is for support of financial, personnel, information and supply management functions. A reduction of \$373,000 is included in this line item resulting from anticipated savings in reducing staffing in grades 11 through 15. This reduction is described in the uncontrollable section of this budget.

PROGRAM - Within this activity grouping, the Office of the Secretary with the assistance of the Office of the Under Secretary is responsible for management and administration, including policy determination, program planning, legislation, financial management and the direction and review of performance of activities. The Office of the Assistant Secretary for Administration, including the Director of Facilities Services, is responsible for administrative and technical services and for design, construction, building operation and maintenance, and protection services. The Office of Audits, which reports to the Under Secretary and to the Audit and Review Committee of the Board of Regents, is responsible for performing all internal auditing and the external audit program of the Smithsonian. The internal audit function includes auditing Federal programs as well as Trust-funded activities on a recurring basis. The external audit function involves the audit of documentation in support of claims, cost proposals and cost and pricing data arising from contracts, grants and other financial agreements.

As the legal arm of the Institution, the Office of the General Counsel has the responsibility of ensuring the legal soundness of Smithsonian operations. The unique trust origin of the Smithsonian and the diverse programs by which that trust is being fulfilled present a wide range of legal matters for consideration and resolution in the day-to-day administration of the Institution. Such matters include: the fiduciary obligations and responsibilities of the United States in accepting the Smithsonian trust and the powers granted the Institution by its enabling charter; the trustee duty and relationship inherent in the administration of Smithsonian programs; fiscal policies and procedures required for federally appropriated funds, as well as trust principles applicable to the Institution's endowment funds; employment policies and procedures, involving the civil service laws, the civil rights laws and labor laws; the conformance to Smithsonian standards of conduct by its employees; national and international legal requirements, procedures, and ramifications pertinent to scientific field studies and research, and to the importation and exportation of exhibitions, art works and cultural property; the impact on Smithsonian activities of environmental and endangered species laws; contract awards and agreements and claims and disputes arising therefrom; collections acquisitions management regarding purchases, gifts, loans and bequests; Federal and State taxes; intellectual property rights arising out of publishing, performing arts and collection acquisition activities; and real and personal property transactions. These matters require the full spectrum of legal activities, from drafting a routine legal document to negotiating contracts, agreements, or settlements involving large sums, performing extensive legal research for the preparation of legal memoranda, formulating Institution-wide legal procedures, and conducting pre-trial investigative and discovery proceedings for pending litigation.

The Office of the Treasurer has responsibility for financial management. This includes the direction of financial planning, accounting, payroll, financial reporting, administration of grants and insurance, handling of bank relations, oversight of investments and management of certain auxiliary activities. Components of the Office of the Treasurer include: Accounting and Financial Services, Grants and Risk Management and various Business Management Offices, including Museum Shops, Mail Order, Product Licensing, Concessions and Parking operations.

The Offices of Congressional Liaison, Public Affairs and Special Events are responsible for providing information about the Smithsonian and its programs to the general public and the Congress, for developing and overseeing legislation pertaining to the Institution, and for coordinating special events associated with exhibit openings, lectures and other presentations. The Office of Public Affairs uses news releases, the Smithsonian News Service, other feature articles, calendars of events, radio-TV public service announcements, guides, visitor brochures and other publications, and contacts with individual journalists and news conferences to inform the public. The Office also produces a monthly staff newspaper.

The Contracts Office assists in obtaining Federal grants and contracts for special programs and projects, negotiates certain specialized contracts and manages components of the Trust personnel benefits program.

The Office of Equal Opportunity plans, coordinates and monitors a positive action program to provide equality in employment practices and program activities. Major efforts include the setting of goals and monitoring action to correct under representation in employment of minorities, women, and the disabled; assessing program and facility access for disabled persons; providing employee counseling and complaints resolution; developing and overseeing Upward Mobility, Hispanic and women's programs; and meeting community and national outreach responsibilities through exhibits and other information on the Institution.

The Office of Information Resource Management (OIRM), encompasses a number of planning, management and automation functions. OIRM planning is directed toward enhancement of the information resources of the Institution--its cultural objects, scientific specimens, books and manuscripts, and its administrative information concerning people, funds and the like. Planning is based on program needs of bureaus and offices defined by those organizations under the technical leadership of OIRM staff. OIRM management focuses on the cost effective use of technology to support defined program needs and on the emerging area of data administration. OIRM's automation functions involve technology assessment to ensure that the Smithsonian uses the most appropriate technology from the market place; and the systems analysis, computer programming and computer operations involved in the development and use of computer systems.

The Management Analysis Office provides a wide range of staff assistance and advisory services in support of Smithsonian administrative operations. The Office performs studies of organization, systems and procedures; prepares and distributes management issuances containing policy and instructions governing operations; and conducts 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 relevant controlling agencies and within the policies of the Institution, the Office has functional responsibility for recruitment, staffing, position classification and wage administration, performance appraisal, merit pay and employee relations. It also provides for union-management relations, employee training and career development, employee assistance, retirement counseling, employee benefits processing, workers' compensation, unemployment insurance processing, records and data maintenance and processing, personnel policy development and personnel program evaluation.

The Office of Printing and Photographic Services is the central office for technical advice, guidance and production on photography and duplicating services to curatorial, scientific, technical and administrative staff. Photographic services include studio and on-site photography, photography of related field work, photographic copy restoration, printing, preservation of originals under archival conditions, the development and maintenance of an automated catalogue of photographs and sales of materials to the public.

The Office of Programming and Budget formulates the consolidated Federal and nonappropriated Trust fund budgets for review and approval by the Secretary and the Board of Regents. Approved budgets are developed for submission to the Office of Management and Budget (OMB) and to the Congress, and the Office serves as liaison with both the OMB and the Congress on budgetary matters. Appropriated and nonappropriated Trust fund budgets are administered and monitored to help assure that program needs are met, budgetary goals are achieved and that accountability is maintained. The Office participates in the development of the Five-Year Prospectus and advises management on matters pertaining to program planning and development.

The Office of Supply Services is responsible for the policy, planning and coordination of the procurement, contracting, property management and supply program. The Office procures supplies, materials, contractual services including construction, and equipment for research, curatorial, conservation, exhibit preparation, administrative and other Smithsonian activities. Programs for business with small, minority and women-owned firms are set and monitored. The Office also maintains all property records and performs and oversees the regular equipment inventories and boards of surveys to ensure proper accountability, utilization and security.

The Travel Services Office plans itineraries and makes arrangements for travel to be accomplished efficiently and economically with particular attention to saving funds

by the use of contract and discount fares. Information is gathered and made available to staff on accommodations, car rentals and other services. In coordination with the accounting and management analysis offices, policy and procedural materials on travel are prepared for staff use.

The International Exchange Service receives and forwards shipments of scientific and cultural materials between educational organizations in this country and abroad.

Progress in Administrative Support - Major emphasis over the past year and continuing for the current and future budget years includes the development of the Quadrangle project, the supervision of the administrative and support activities to assure their responsiveness to needs, and strengthening of the Institution's equal opportunity and affirmative action programs. Continued attention is being given to legal oversight of and counseling on the Smithsonian's programs and improvement of financial management, accounting, monitoring, reporting and auditing systems to assure control and accountability as a public responsibility. A number of specific developments merit reporting in the areas of personnel, financial, and procurement management; equal opportunity; management information systems; public information; and photographic services.

Personnel management efforts have emphasized strengthening of the performance appraisal and merit pay systems, control of the unemployment compensation program to reduce costs, systematization of procedures and records, employee training and the development of policy and procedural materials to assist Smithsonian bureaus and offices in good personnel practices. New recruitment pamphlets and fact sheets are being developed to assist applicants. With regard to financial management, the number of Accounting Service Units has been increased. Located in various Smithsonian facilities and linked by computer terminal to the central Accounting Office, these units expedite processing of accounting documents, thereby enabling more timely payments to vendors and better cash management. Computer techniques have been extended to the management of the current funds investments and a new query system has become operational to give up-to-date information on the status of financial accounts. Completion of the implementation of the new Federal Acquisition Regulations was an important accomplishment of the Office of Supply Services.

In the area of budget formulation, the Office of Programming and Budget has worked to implement two changes geared to providing more efficient and accurate transmission of budget data: (1) the Office is participating in a project sponsored by the Office of Management and Budget (OMB) to enter the Institution's Federal budget schedules directly into OMB's computer data base system; and (2) the Office revised the format of the OMB budget justification in order to relate the OMB document more easily to the Congressional budget justification. In addition, the Office continued its efforts to improve the understanding of the Federal and Trust budget policies and procedures within the Institution through the presentation of seminars and the development of a Smithsonian budget procedures handbook.

Equal opportunity efforts are having some success with improvements in representation of minority persons and women in professional jobs and in the upper grades. There has been steady improvement in program and facility accessibility for disabled persons. Greatly expanded opportunities for training and career development are available for minority students and scholars. The Smithsonian has developed working relationships with Washington, D.C. universities and with the historically black colleges and universities. Under the auspices of the Office of Fellowships and Grants, many internship appointments and faculty fellowships are being made primarily from these schools. The Office of Elementary and Secondary Education's new Career Awareness Program for high school students has been met with great enthusiasm by the District of Columbia Public Schools. In addition, there have been special actions to provide information, assistance and exhibits to minority and women's groups and organizations. Goals for procurement from small and minority businesses were exceeded.

Progress has been made in many areas of information resource management. The Bibliographic Information System (libraries, archives, and visual resource material) has been installed and will be fully operational in early 1985. Good responses have been received from the industry and are being reviewed on the design and acquisition of a new Collections Information System covering museum objects and specimens. Office automation policies and procedures have been announced and several systems are being installed or expanded. Reevaluation of requirements for the personnel/payroll system is under way combined with preparation of requirements analysis in related areas of financial management. In-depth analysis requirements for automated support of financial management will occur in FY 1985 under the joint efforts of the information management and accounting offices. A new mainframe computer has been acquired to broaden the availability to Smithsonian users of commercial software systems for data base management, information retrieval, decision support and micros to mainframe links. A conversion study of current programs and files is under way. Local area networks are being expanded with some 125 connections in operation by the end of 1984 and with the development of additional connections for the bibliographic system. An Information Resource Center has been established to provide for end user training and hands-on access to various micro-processor configurations.

Among public information services, the Smithsonian News Service provides the daily and weekly press with a regular package of four articles on art, history and science subjects. Over 1,500 newspapers, with a total combined readership of 40 million persons, are using News Service articles. Readership of the monthly Calendar of Events is close to two million persons in the Washington metropolitan area. Radio and television public service announcements are helpful to prospective visitors. More than one million copies of English and foreign language information brochures are used by visitors annually. A special guide for disabled persons has been revised to include improvements in accessibility of facilities.

In the Office of Printing and Photographic Services, the important effort to convert hazardous nitrate negatives to safety film continues with completion anticipated by the end of 1985. Major emphasis was placed on managing the inventory photography projects for the National Museum of American History. A video disc project was completed during FY 1984 and improvements to the cold storage room were made which will further ensure the preservation of the photographic collection.

EXPLANATION OF PROGRAM INCREASE - For FY 1986, an increase of 11 workyears and \$375,000 is requested of which 3 workyears and \$54,000 are related to Quadrangle support and the balance of 8 workyears and \$321,000 to financial, personnel, information and supply management functions.

Financial and Personnel Management (7 workyears and \$164,000) - Responsibilities of the Office of Audits include the audit of documentation in support of claims, cost proposals and cost and pricing data arising from contracts, grants and other financial agreements. The increased size of the Restoration and Renovation of Buildings Program coupled with authority granted to the Institution in its appropriation act to renegotiate certain types of restoration and renovation contracts will increase substantially the audit workload. Negotiated contracts require under the Federal Procurement Regulations an extensive audit effort not required in advertised procurements. The present staff cannot undertake this requirement without reducing its present level of internal control activity. Funding of \$54,000 and 2 workyears for two additional auditors with equipment support is requested.

For the Office of Programming and Budget (OPB), an increase of 2 workyears and \$56,000 is sought. In addition to carrying out its regular formulation and execution responsibilities, the Office has been moving ahead with the development of automated systems. With the growing size and increasing complexity of Smithsonian programs during

the past several years have come greater requirements for the accumulation and presentation of resource data. Of the proposed new resources, one workyear and \$30,000 is needed primarily to design automated programs that will facilitate budgetary analysis and enable OPB to furnish the Institution's management timely studies of resource utilization. A further amount of \$16,000 and 1 workyear is requested for a clerk-typist/data entry technician to support increased output for written and computer-generated management information, and a sum of \$10,000 is sought for purchase of computer software and peripheral equipment that will enable the Office to keep pace with the developing technology.

The Office of Accounting and Financial Services requires 1 workyear and \$14,000 to extend its network of accounting service units into the Quadrangle for support of the large number of programs and activities in that building. The accounting service units, now located in all major buildings, have proven to be invaluable to fast service, prompt information on the status of accounts, and improved internal controls. These units provide travel advances and process vouchers, process small purchase and petty cash documents, prepare schedules of payment, and perform other accounting-related functions. They have enhanced the Office of Accounting and Financial Services' ability to collect, authenticate, classify and report financial transactions, and to analyze, interpret and report financial information so that managers can effectively and economically manage their operations and resources.

The staffing and opening of the Quadrangle will add substantially to the workload of the Office of Personnel Administration. This new museum and public education center will require about 260 new employees including professional staff as well as maintenance, custodial, and protection personnel, areas of traditionally higher turnover. Two workyears for personnel assistants and \$40,000 are required to augment the present staff to assist with the full range of recruitment, placement, training, documentation and counseling functions and to avoid a deterioration of support for the bureaus and offices now being served. The present ratio of personnel staff to the total employment of the Institution is one to 94, well under an acceptable ratio given the variety of the Smithsonian's occupations.

Information and Supply Management (4 workyears and \$211,000) - For the Office of Information Resource Management (OIRM), an amount of 3 workyears and \$107,000 is requested for data security and systems software staff. The Smithsonian is modernizing its computer systems. Modernization using current technology implies greater availability of information to many staff and other users of the Institution's information resources, and an increasingly distributed system of data storage and data processing. The purpose of this request is to provide data security for personnel, accounting and other users of management information systems; and for users of the specimen collections related systems. Wider availability of information increases the opportunity for unauthorized access to information. In order to reap the benefits of the new technologies, the Institution must devote careful attention to the security provisions of its systems. A staff person is required for that purpose, combining technical knowledge of software with an ability to identify the requirements for data security. This function is not available within present OIRM base resources. An amount of 1 workyear and \$40,000 is sought to meet this need.

The systems software specialists, because of the nature of the work, are the most highly qualified staff in OIRM. These staff provide the software which is the foundation upon which the end users and applications programming staff of OIRM build and use applications systems. Systems software specialists operate systems that allocate resources and manage the overall functioning of the computer and network hardware, and they provide support for the major software packages such as data base management systems. Since the Smithsonian is modernizing its EDP systems, provision of systems software experts is critical to success. The Institution is in a deficit position, since the older computer

systems did not require a high level of staff support for systems software. Although OIRM presently has two system software positions, at least two additional positions are required at a cost of \$67,000 to meet the needs of more modern computer systems.

An amount of \$29,000 is requested to allow the Office of Public Affairs (OPA) to purchase equipment necessary for an automated information system to include three operator's terminals, software and printer. Automation permits a more effective system of sending news releases, drafts for OPA publications, and other information from public affairs specialists in the individual museums and the Zoo to the Office of Public Affairs. Currently, most news releases are typed in the originating office, hand carried to OPA, edited, retyped, duplicated and distributed. It will be more cost effective, efficient and accurate to use a communications system to relay such material to OPA from the museums and again transmit the material (after it is in final form) to the news media. This equipment will allow the Institution to serve its national and international audience more effectively and efficiently.

The Office of Supply Services (OSS) requires 1 workyear and \$75,000 to fund one additional procurement specialist and to help meet requirements for paper, equipment and machine repairs. This office has had no increase in staff for ten years--a period when the Smithsonian's operating and construction budgets have grown substantially. The application of word processing and other automation efficiencies have enabled OSS to meet an increased procurement and contracting workload. Further increases to workload, more difficult and technical procurements and contracts and the requirements posed by the Federal Acquisitions Regulations and the Small Business Administration now require that an additional procurement specialist be added to the staff at a cost of \$30,000. The balance of the requested increase (\$45,000) will be used to purchase copy paper used throughout the Institution, to maintain and expand the computer/word processing equipment and software capacity of the Office, to acquire warehouse equipment, to acquire forms required by the new procurement regulations and to fund office machine repairs in the bureaus and offices.

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 represents administrative expenditures for those units that are organizationally under Administration. Certain other units, receiving administrative allotments, are reflected in the appropriate section of the budget request. For example, administrative costs for the Smithsonian Astrophysical Observatory are reflected within its nonappropriated Trust funds section. Also included are 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. A program allotment is made to the Office of Equal Opportunity to support community outreach through exhibits and publications, specifically aimed at women and minorities. Funds also are provided for the costs of the development and implementation of the personnel/payroll system which is designed to provide a consolidated information base for a wide variety of personnel, budgetary and other financial data. Special Purpose funds included gifts received through unrestricted bequests which in accordance with the Bylaws of the Board of Regents are subsequently transferred to endowment. Anticipated expenditures in the Special Purpose category include support of studies in ornithology, computer conversion costs and small amounts used for legal seminars, research, annuity payments for a former Under Secretary and property taxes.

Restricted Funds - Included in this category are endowment bequests and foundation grants for scientific research publications, Quadrangle Film Project and the Renwick Exhibition.

OFFICE OF DESIGN AND CONSTRUCTION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
		FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	
FY 1984 Estimate	35	1,819	7	287	-	-	-	-	-	-
FY 1985 Estimate	37	2,036	9	354	-	-	-	-	-	-
FY 1986 Estimate	48	2,474	10	420	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Design and Construction (ODC) provides professional architectural and engineering services to the Institution in support of the development, operation, maintenance, repair and improvement of the physical plant. Services include short- and long-range planning and feasibility analyses, design and engineering analyses, project management and development of cost and budgetary estimates. Other services provided by ODC include contract negotiation and supervision, general construction administration and management, interior design, space utilization planning and technical consulting support. For FY 1986, 11 additional workyears and \$438,000 are requested to strengthen ODC's design, planning and construction management capabilities.

PROGRAM - The primary functions of the Office of Design and Construction are to provide planning, engineering, architectural and related administrative services for all construction, renovation and repair projects for the Institution's facilities located in the Washington metropolitan area, as well as the Smithsonian Environmental Research Center in Maryland, the Whipple Observatory in Arizona, the Cooper-Hewitt Museum in New York and the Tropical Research Institute in Panama. ODC's staff includes electrical, mechanical and structural engineers, architects and construction managers, as well as architectural and engineering draftsmen, specification writers, and administrative support personnel. ODC staff services include the development of facilities' master plans, detailed project designs and specifications, future year physical plant projects and budget estimating. The Office also conducts architectural and engineering studies of buildings' operating systems, and recommends and oversees efforts to solve functional deficiencies. The Office reviews designs prepared by the museums' exhibit staffs to ensure compliance with safety, health, accessibility and other technical standards; negotiates, reviews and supervises architectural and engineering design contracts and construction contracts; performs architectural and engineering feasibility studies and analyses; and maintains a central library for cataloguing, filing and identifying all plans, drawings and specifications related to Smithsonian buildings and properties. Expertise also is provided Smithsonian executive staff on matters relating to planned construction and facility development or utilization.

Science Facilities Development - In FY 1984, the Smithsonian Board of Regents approved the introduction of legislation for planning and construction authorization for science facilities development. Research objectives now include a coordinated effort to improve science facilities commensurate with the Institution's long range scientific program objectives. The role of ODC is critical in this effort. During FY 1984, work began to develop a master plan for the National Air and Space Museum's facility at Dulles

International Airport - a facility that will provide additional storage and exhibition space for significant aircraft. Funds for a capability study, site selection and master planning for the Dulles facility are included in the Institution's FY 1985 and FY 1986 budget requests in the Restoration and Renovation of Buildings appropriation accounts. Also in FY 1984, ODC contracted with an architect-engineering firm for the preparation of a master plan for the Smithsonian Tropical Research Institute in Panama. Facilities surveys were conducted and the results of the surveys will be used to guide the development and utilization of STRI facilities to meet the short- and long-term goals of the scientific community at various locations in Panama. Further, ODC began working with an architect-engineer to develop a master plan for the Smithsonian Environmental Research Center facility located near Edgewater, Maryland, and began work on the development of a master plan for the a Smithsonian Astrophysical Observatory base camp and visitors center in Arizona to determine suitability of land use and proposed building locations to meet its research goals. Funding for these construction projects is included in the Institution's FY 1986 request in the major Construction appropriation account.

Construction Contract Supervision - In FY 1984, the Office of Design and Construction supervised 116 construction contracts. Among the most notable of these were: ongoing exterior renovations and repairs to the Arts and Industries Building including roof replacement, cleaning and pointing of the brick, refinishing of stone sills and installation of new energy efficient windows; and continued renovation of the facade at the Renwick Gallery - a project which includes replacing all existing sandstone elements that have deteriorated from weathering and age with architectural precast stone replicas. In FY 1986, efforts to supervise an increasing number of construction contracts consistent with the proposed expansion of the Restoration and Renovation of Buildings program will continue.

ODC also is involved with design of projects which relate to health and safety. For example, implementation of an Institution-wide plan to eliminate asbestos from several facilities is being coordinated by the Office of Design and Construction. In FY 1984, the fire protection master plans implementation continued for the American History and Natural History Buildings. In addition, in FY 1984, ODC reviewed 200 exhibit designs provided by museums' exhibits staff to ensure compliance with all appropriate safety and design regulations.

EXPLANATION OF PROGRAM INCREASE:

Facilities Program Support - (11 workyears and \$438,000) - In FY 1986, an increase of 11 workyears and \$438,000 is sought to provide architectural, engineering and other services required for facilities improvement programs funded under the Restoration and Renovation of Buildings (R&R) and Construction appropriations accounts.

The major objective of the Office of Design and Construction is to provide efficient and capable support to address the facilities needs of the Institution in a cost effective manner. During the past several years, appropriations for facilities programs have significantly escalated, while support resources necessary to implement the programs have not increased at a commensurate rate. For example, appropriations in the Restoration and Renovation of Buildings account have been increased 25 percent to 40 percent annually for three years, while base ODC resources reflect increases ranging between 4 percent to 7 percent, mainly to cover inflationary cost increases. Coupled with this situation has been the Institution's increased emphasis placed on facilities programs to assure that proper environmental conditions and space be provided to the millions of visitors, collections, researchers, and staff, while protecting the many historical and valuable properties from deterioration, fire, decay and malfunctions. Additional resources are required to support the current and future facilities programs. Of the total amount of \$438,000 requested, \$263,000 is to fund 11 workyears to improve implementation of funded programs and facilitate enunciation of future year requirements. These positions in the

three major functions of planning, design and construction management, consist of two electrical engineers, two facilities planners, three construction engineers, one mechanical engineer, one planning estimator, one engineering draftsman and one clerk typist. A further \$8,000 is requested to cover the cost of additional travel required to plan and manage various projects outside the Washington metropolitan area and \$10,000 is requested to cover the costs of reproducing increasing numbers of master plans, facility programs, contract plans and specifications provided by vendors.

To supplement the expanded planning activities and for the preparation of plans and specifications in the design function, a sum of \$90,000 is requested for professional architectural and engineering services contracts. A further amount of \$12,000 will be utilized for training of staff in specialized tasks such as asbestos removal and containment, energy conservation and environmental considerations. Finally, an increase of \$35,000 is requested to purchase equipment for new staff, such as space efficient modular units and an amount of \$20,000 is sought for automated equipment and supplies and materials to support drafting and design functions.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by an allotment used primarily to cover salaries and some support costs (estimated expenditures of \$354,000 in FY 1985 and \$420,000 in FY 1986) reflecting the fact that ODC provides services for Trust funded as well as federally funded projects.

OFFICE OF PROTECTION SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
FY 1984 Estimate	662	16,057	--	7	--	25	--	--	--	--
FY 1985 Estimate	671	17,266	--	7	--	24	--	--	--	--
FY 1986 Estimate	727	18,831	--	7	--	25	--	--	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Protection Services (OPS) is responsible for the security, fire protection, safety, and health programs of the Smithsonian. For FY 1986, an increase of 56 workyears and \$1,565,000 is requested to provide security for the new Quadrangle building and grounds (33 workyears and \$470,000); improve Institutional fire protection, industrial hygiene, and occupational health services programs (6 workyears and \$340,000); continue to alleviate the critical guard shortage (17 workyears and \$271,000); provide for essential security systems maintenance (\$248,000); continue upgrading of security systems (\$180,000) by increasing the existing base to \$860,000 in addition to retaining FY 1985 resources of \$700,000 appropriated to accelerate the installation of the proprietary security system; and to purchase investigative and other necessary security equipment (\$56,000).

PROGRAM - The Office of Protection Services provides security, fire protection, safety and health services for visitors and staff of the Smithsonian Institution. The authority of OPS to administer these programs derives from Public Law 82-206 and Public Law 88-391, which relate to the policing of Smithsonian buildings and grounds, and from Public Law 91-596 and Executive Order 12196, which relate to occupational safety and health.

The Office of Protection Services provides a full range of protective services through the efforts of a large security force and a professional and administrative staff that includes training specialists, safety specialists, industrial hygienists, fire protection engineers, alarm system specialists, investigators, and museum security specialists. The security force provides physical security 24 hours a day, every day of the year, at the Cooper-Hewitt Museum in New York City, and at 11 major museums and art galleries and at other major work, research and storage facilities in the Washington metropolitan area. The professional staff conducts in-depth studies of protection needs, escorts valuable shipments, formulates long-range plans for improved security and safety, operates a personnel security program, and installs and maintains alarms, including equipment for the new proprietary security system. The Office provides technical assistance and advisory services and administers occupational safety and health programs for the National Zoological Park, the Smithsonian Tropical Research Institute, the Smithsonian Environmental Research Center, and the Smithsonian Astrophysical Observatory. In all, the Office is responsible for the protection of more than 5,000 Smithsonian employees, millions of visitors each year, the many facilities of the Institution, and the millions of invaluable objects.

The security force operates 24 hours a day, seven days a week, to monitor conditions and activities in and around the buildings they protect, to enforce museum regulations, and to intervene in cases of crime, accident, or other emergency. Uniformed guards, plainclothesmen and K-9 officers are assigned in the galleries, around the grounds, and at entrances during the day and night. Coordinating their activities through the use of a radio network, security officers respond to alarm signals, conduct security and fire patrols after the museum buildings are closed to the public, investigate accidents, report fire and safety hazards and malfunctions of mechanical and electrical equipment, and provide information to museum visitors. Security coverage is based on the concept of posts--the areas for which security officers are responsible. A post may be one point (for example, a museum entrance) or an area whose boundaries are determined by such factors as its use; crowd conditions; the value of objects on display; the vulnerability of those objects to accidental damage, vandalism, or theft; the effective field of vision of the assigned protection personnel; and ability to use electronic devices. The number of guards required to staff one post may vary from one (for a post staffed eight hours a day, five days a week) to five (for a post staffed 24 hours a day, seven days a week).

In order to provide adequate security coverage within current staffing limitations, OPS continues to provide certain services through the use of contracts. For example, the contract undertaken in FY 1981 for operation of checkrooms in Mall museums and elevators that once were staffed by guards has been continued, as well as the contract for guard services at the Cooper-Hewitt Museum.

A key part of the Institution's protection program involves the conversion to an electronic security and fire alarm system that is completely owned and operated by the Smithsonian. Plans call for conversion to be completed in FY 1987. The purposes of converting to a proprietary security system are to gain faster response time to security and fire protection alarms; to improve the quality of and to control information transmitted from the security devices and fire sensors to the building security offices and the central control room; to manage and control systems maintenance; and to eliminate reliance on leased equipment, outside sources of power and related contractual services. The fire detection and security sensors that are elements of this system will be linked to eight local control rooms and to a central room that monitors all alarm activity and provides emergency back-up control. Closed-circuit television controlled by the computer will allow the control room operator to quickly assess a problem. Patrolling guards would be dispatched to the area of the activated sensor for appropriate action.

Fire and safety programs include training in preventive techniques; reviews of construction, renovation, and exhibit installation drawings; regular fire inspections of facilities; and annual safety and industrial hygiene inspections. These measures have resulted in long-range plans for installation of new and upgraded fire detection and suppression systems and for compliance with safety regulations. Fire safety presentations are made to approximately 80 percent of the Smithsonian staff each year. A safety staff works to eliminate hazards and accidents and occupational illnesses. Locations in which asbestos has been discovered are monitored carefully by industrial hygienists, and projects to remove or contain asbestos and to clean areas and objects found to be contaminated are proceeding on schedule. The effort to eliminate the dangers of cellulose nitrate film in the Institution's collections also is well under way. Employees are provided safety shoes, safety glasses and other equipment as necessary. The safety staff continues to promote safety awareness among employees by coordinating the work of safety committees in every facility, by offering several training programs, and by publishing a safety newsletter for all employees.

Medical services for employees exposed to health hazards on the job or experiencing other job-related health problems are under the direction of a staff medical officer. The health services staff, in addition to providing first aid for on-the-job injuries to

employees, continues to develop and implement effective monitoring programs for employees exposed to hazardous conditions, write medical standards for employees appointed to certain positions, and develop a program of pre-employment physicals. Programs to counsel employees troubled by alcoholism, drug problems, or emotional problems are continuing as are programs to provide immunizations for employees traveling on official business, diagnostic tests for chronic illnesses, and certain treatments ordered by employees' private physicians. Health units are staffed so that qualified medical personnel are available to administer first aid whenever the museums are open to the public.

EXPLANATION OF PROGRAM INCREASE:

For FY 1986, an increase of 56 workyears and \$1,565,000 is requested. The Institution is seeking an increase of \$180,000 over the FY 1985 base amount available for the comprehensive program of upgrading security systems (\$680,000) and proposes to reapply funds appropriated in FY 1984 to accelerate installation of the proprietary security system (\$700,000). Since FY 1983, a total of \$2,182,000 has been appropriated for security equipment upgrading. The FY 1986 request will provide \$1,560,000 for this program. It is anticipated that this program will be completed in FY 1987 at a total cost of \$5,222,000. Also sought in FY 1986 are 33 workyears and \$470,000 to provide security for the Quadrangle building; 6 workyears and \$340,000 for Health and Safety Programs; 17 workyears and \$271,000 to hire additional security guards; \$248,000 for maintenance of installed security systems; and \$56,000 to purchase investigative and other equipment items.

Security Equipment Upgrading (\$1,560,000) - Much of the security equipment in operation at the Smithsonian has been acquired over a long period of time to correct specific problems or to meet needs as they arise. As a result, the security of the National Collections is in some instances inadequate. Several museums have systems which are obsolete or only function intermittently with frequent repairs required. Others have large areas of nonpublic space which are not monitored and where access is not controlled. Based upon comprehensive studies of security conditions at all museums and facilities of the Institution, the Office of Protection Services has identified numerous areas where security systems are not adequate and opportunity exists for theft, break-in, or vandalism. While devices alone cannot provide complete security, they can increase the effectiveness of available security staff. OPS is seeking funds for security devices and equipment in order to continue the program of systems upgrading. The following details the equipment requested for FY 1986:

1. Closed-circuit Television (CCTV) Surveillance (\$467,000) - CCTVs are used in conjunction with electronic motion-detection equipment to indicate the presence of individuals in exhibits, laboratories, offices and corridors. The movement of personnel into areas under surveillance triggers alarm devices that draw monitoring guards' attention instantly to a TV monitor of the area. Guards in a central location can monitor activity in many areas simultaneously without the need to patrol these areas as frequently. The installation of this equipment will provide increased surveillance in exhibit and other areas after hours. The proposed \$467,000 will be used for the purchase of 107 CCTVs and the associated motion-detection equipment for six facilities.
2. Storage Security (\$583,000) - With nearly 90 percent of the Smithsonian's collections occupying more than one million square feet of storage space, the need to control access in and out of these areas is an important responsibility. The proposed increase will be used to purchase electronic card readers to control access to 115 storage areas in four facilities. Additionally, motion-detection equipment to detect unauthorized access in a rare book room also will be installed.

3. General Internal Security (\$175,000) - There is a need to restrict the movement of visitors and construction and trade personnel into nonpublic employee and work areas where collections are stored. The installation of an electronic card reader that restricts access to only those employees using a properly encoded card will provide improved control over access to nonpublic areas. The proposed amount of \$175,000 will be used to purchase devices for 34 locations in four facilities.
4. Perimeter Security (\$191,000) - Although many facilities are protected now with security sensors on windows and doors, several still lack protection in certain areas and remain vulnerable. Security sensors on several facilities are out-moded now and could be breached to obtain undetected entry into the buildings. The proposed increase will allow the alarming of doors at the Freer Gallery of Art and fifth-floor windows at the American History Building as well as installation of electric locks at the Smithsonian Institution Building. Additional buildings at the National Zoological Park will have alarms installed and door switches will be upgraded at the American History and Hirshhorn Buildings.
5. Exhibits Security (\$90,000) - This proposed increase will permit installation of security alarms on a number of exhibit cases containing sensitive and high-value objects in the Medical Sciences Hall and Ceramics, and Glass Hall at the Museum of American History. Also, permanent security wiring, devices and CCTV will be installed in the Museum of Natural History's Evans Gallery, an area in which exhibitions of valuable objects are displayed frequently.
6. Other Equipment (\$54,000) - This increase will permit the installation of a fire alerting system at the Smithsonian Astrophysical Observatory and provide funds to cover the annual costs of maintaining security systems installed.

Quadrangle Security (33 workyears and \$470,000) - An increase of 33 workyears and \$470,000 is sought to establish a security unit for the new Quadrangle building and grounds through funding of the part-year costs of 33 security guards including supervisory personnel. The Quadrangle is scheduled for beneficial occupancy in the spring of 1986 by which time the guard staff must be on board and fully trained. The initial complement of security personnel are required to staff entrances, control access to sensitive areas, and patrol the surrounding grounds.

Health and Safety (6 workyears and \$340,000) - An increase of 6 workyears and \$340,000 is sought to improve current Health and Safety Programs. Of this amount, 2 workyears and \$100,000 are required to hire two fire protection engineers to perform engineering reviews of proposed construction or renovation work; to inspect existing fire detection and suppression systems and those to be installed in Smithsonian facilities; and to develop fire protection master plans funded under the Restoration and Renovation of Buildings appropriation.

An additional workyear and \$125,000 are required to hire a technician and purchase supplies and equipment necessary to analyze and monitor asbestos and other hazardous exposures and meet testing requirements of the Occupational Safety and Health Administration.

An increase of 3 workyears and \$115,000 is sought to hire an emergency medical technician to provide first aid and other medical services for staff and visitors at the Freer Gallery of Art, Smithsonian Institution and Arts and Industries Buildings; to hire two employee assistance counselors to assist employees with alcohol, drug or emotional problems; and to purchase medical and other supplies and equipment to support these important activities.

Guard Shortage (17 workyears and \$271,000) - The ability of the Office of Protection Services to protect Smithsonian collections, property, staff and visitors depends on its capability to post security officers effectively in buildings and on grounds. Guards must be available 24 hours a day to respond to the signals of security devices, to control entry into and from buildings, to monitor environmental conditions within buildings, and to respond to any emergencies that occur. OPS reviews security requirements regularly to ensure that manpower is assigned in the most effective and efficient manner possible. There is no exact science to determine the number of guards needed to provide adequate protection for a facility and its contents, but OPS carefully considers a great many factors, including level of visitation, gallery layout, how much a guard can see from a post, whether the items on display are out in the open or under glass, the level of electronic security installed, the political or emotional impact on items displayed, and the overall vulnerability of the facility and the area being evaluated. Based upon experience and standards accepted in the profession for assignment of guards, OPS classifies its staffing needs on the basis of posts that are critical, sensitive, or desirable for security coverage, with the critical posts being those most urgently needed.

In its most recent analysis, OPS estimates that there are 35 posts for which coverage is not available now. To continue improving security for the Institution, an increase of 17 workyears and \$271,000 to hire additional security officers is sought for FY 1986. It is anticipated that workyears and funds to hire additional guards to address this staffing shortage will be requested in FY 1987 and FY 1988.

Security Systems Maintenance (\$248,000) - An additional sum of \$248,000 is sought in FY 1986 to improve security systems maintenance. Improvement of this essential program is necessary to ensure that existing closed-circuit television (CCTV) access control systems, proprietary security system and alarms, and those to be installed throughout Smithsonian facilities, are properly inspected and maintained and quickly repaired in the event of malfunction. By the end of FY 1986, an estimated 1,500 electronic systems consisting of over 10,000 security devices will be installed. Of the increase sought, \$233,000 is required for two security specialists, seven alarms technicians and one clerk-typist, and \$15,000 is needed for staff training.

Security Equipment (\$56,000) - In FY 1986, additional funds are sought to purchase equipment essential to augment efforts to install complex security systems throughout Smithsonian facilities (\$38,000); and for a one-time purchase of investigative equipment (\$18,000).

Equipment needed to properly place, inspect, and maintain Smithsonian security systems include a dual trace oscilloscope to test security signals from and to electronic panels, multiplexors, and CCTV components; a CCTV lens selection system used to determine accurately the proper placement of monitoring devices; a digital voltmeter needed to test voltages in sophisticated electronic equipment; a cable fault analyzer to inspect and determine fault locations in cables; and two maintenance vans specially equipped to aid in performing inspections, maintenance and repairs to electronic security systems and devices installed at Smithsonian off-Mall facilities.

A one-time purchase of investigative equipment is needed in FY 1986 to permit Smithsonian security investigators to more accurately and efficiently gather video and photographic evidence suitable for presentation in court or hearings. This equipment, costing approximately \$18,000, includes CCTV cameras capable of functioning at low light levels and producing images of individuals, objects and materials; other CCTV support equipment such as a recorder, monitor and rapid action locator; and sequential pinhole cameras, to be used in instances where time-lapse photography is essential in collecting evidence.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by an allotment and from reimbursements for the use of guard services at special events and for lectures at Smithsonian facilities. These amounts are used to purchase supplies, materials and equipment.

OFFICE OF PLANT SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	General		Special Purpose		FTE**	Amount	FTE**	Amount
FY 1984 Estimate	415	28,444	5	897	1	35	--	17	--	--
FY 1985 Estimate	415	30,585	6	1,034	1	7	--	1	--	--
FY 1986 Estimate	469	34,193	6	1,102	1	5	--	1	--	--

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Plant Services (OPlantS) operates, maintains, and repairs 13 museums and art gallery buildings, and a number of other work and collections storage areas located in the Washington metropolitan area and in New York City. OPlantS provides utilities, transportation, mail and telephone services in support of research, exhibit, education and other public programs. In addition, technical services and assistance are provided to other Smithsonian units located outside the Washington metropolitan area including the Tropical Research Institute in Panama, the Whipple Observatory in Arizona and the Environmental Research Center in Maryland. Also included in this line item are the Office of Horticulture, South Group Buildings Management and the Quadrangle Building Management.

For FY 1986, an increase of 54 workyears and \$1,687,000 is requested. To maintain existing facilities, 13 additional workyears and \$650,000 are sought. For the Quadrangle, a total of 41 additional workyears and \$1,037,000 is sought for essential maintenance functions, consisting of: 11 workyears and \$345,000 to establish physical plant maintenance and repair capability; 2 workyears and \$40,000 to maintain the grounds and interior plantings; and 28 workyears and \$652,000 to establish cleaning, minor maintenance, labor, relamping, and craft services capabilities.

An additional amount of \$1,921,000 for utilities, postage, rent and communications is being requested in the Uncontrollable Section.

PROGRAM - I. Office of Plant Services - With base resources of 333 workyears and \$11,985,000, the Office of Plant Services operates, maintains and repairs the Smithsonian's physical plant on or near The Mall, including over 4.8 million net usable square feet in all museums and art galleries. In addition, OPlantS operates, maintains and repairs 82,000 square feet of space in the Cooper-Hewitt Museum in New York City. Services also are provided to other work and storage areas including space in leased facilities. These include maintenance of building interiors, exteriors and all mechanical and electrical equipment, such as elevators and escalators, lighting and refrigeration components, and emergency repairs to property which are accomplished by service contract. Operational responsibilities for utilities funding and management include the maintenance of large and complex air conditioning, heating and ventilating systems and electronic environmental control systems for the comfort of visitors and for the protection of buildings, specimens, objects, paintings and sculptures. Trade and craft assistance, including carpentry, painting, plumbing, plastering, sheetmetal and electrical work, is provided to further research projects, special public events, office relocations and modifications, and exhibition installations at all museums.

OPlantS also maintains a supply warehouse at the Smithsonian Institution Service Center where heavily used supplies and materials, purchased in bulk to obtain the most favorable price, are stored and distributed. Packing, crating, warehousing and moving services for museum objects and collections are performed by OPlantS. The Office of Plant Services also is responsible for communications systems including the management and funding of telephone installations and services (Federal Telecommunications Network System and local calls) and for processing of mail and payment of postage. Transportation services, repair and operation of vehicles are carried out by the Office as well.

The Computerized Preventive Maintenance System for scheduling preventive maintenance requirements continues to provide for a highly reliable and efficient physical plant operation. The preventive maintenance program schedules periodic attention for fire prevention, automatic lighting, guard stations, roofing systems and heating, ventilating and air conditioning mechanical equipment in all Washington, D.C. museums, and the Smithsonian Environmental Research Center near Edgewater, Maryland.

The Computerized Facilities Monitoring System, completed in FY 1980, continues to analyze effectively the operation of various mechanical equipment in major Smithsonian museums. The System uses sensors on over 1,893 points located on equipment and automatically alerts a central control center to equipment malfunctions. These automatic alerts have aided in avoiding costly repairs during the past several years.

II. Office of Horticulture - The Office of Horticulture applies the disciplines of horticulture as an educational, scientific, research, exhibition, and display activity for the Smithsonian Institution. The Office provides horticultural services to all museums, to include interior and exterior landscape management from design through installation in addition to maintenance; research and development of historically styled gardens for museum grounds and special exhibitions; interior plantscapes; management of grounds around museums; and operation of a large greenhouse-nursery complex. Responsibilities of the Office also include exterior buildings and grounds pest control; snow and ice removal from sidewalks, roadways, parking lots and decks in locations on and off The Mall, and trash policing of grounds and flower beds.

III. South Group Buildings Management - South Group Buildings Management is responsible for the cleaning, minor maintenance, labor services, relamping, craft services, shipping and receiving, special events preparation, contract coordination for maintenance, trash removal, pest control and renovation projects for the Arts & Industries and the Smithsonian Institution Buildings. Because of the frequent use of the two buildings for large and complex events, higher than normal levels of maintenance and cleaning must be provided. Services are provided on a seven-day-a-week basis.

EXPLANATION OF PROGRAM INCREASE: For FY 1986, a total increase of 54 workyears and \$1,687,000 is requested as follows:

Maintenance of Existing Facilities (13 workyears and \$650,000) - A total increase of 13 workyears and \$650,000 is requested to strengthen OPlantS' ability to perform preventive maintenance and repairs to Smithsonian facilities. Of the amount requested, \$350,000 will cover the cost of 15 skilled craftsmen hired in FY 1984, and \$300,000 is needed to hire 13 additional skilled craftsmen to alleviate the current outstanding backlog of essential maintenance work.

During the past eight years, OPlantS' workload has expanded with the addition of new buildings and complex new systems. Coupled with the progressive aging of a larger physical plant and the growing frequency of repairs arising in part from previously deferred preventive maintenance, there has been a decrease in OPlantS' capability to perform essential preventive maintenance tasks at Smithsonian facilities. Since 1976, two new

museums on The Mall as well as a major storage facility in Suitland, Maryland, have been constructed which increase maintenance responsibilities. Also, existing storage buildings have been converted from inaccessible storage areas to climate controlled buildings housing exhibits and staff. While additional funds to hire operating engineers have been appropriated for these new facilities, the numbers of trade and craft personnel have not been sufficient to meet program needs. Buildings, such as the Air and Space and Hirshhorn Museums, have reached an age where increased preventive maintenance is required. Projects such as painting of interior spaces and repair of the plazas must be deferred in favor of increasing the maintenance requirements of the older buildings. This has resulted in a considerable backlog of work that can not be accomplished due to insufficient staff.

Although OPlantS has taken measures to address the backlog of preventive maintenance work including redirecting manpower from other programs and combining operations and maintenance functions, the additional resources requested are essential for continued proper maintenance of building components.

Quadrangle-Related Support (41 workyears and \$1,037,000) - For the Quadrangle, a total increase of 41 workyears and \$1,037,000 is sought: to provide physical plant operation and maintenance and repair capabilities (11 workyears and \$345,000); to extend horticultural services to the Quadrangle grounds and complex (2 workyears and \$40,000); and to establish a Building Management unit that will provide a variety of services to organizations to be located in the Quadrangle (28 workyears and \$652,000).

Upon completion of the Quadrangle in early 1986, the Office of Plant Services will assume responsibility for operation and repair of the building's utilities systems and for performing other necessary building maintenance functions. Eleven maintenance mechanics and \$290,000 are required for operation and maintenance of the complicated heating, ventilating and air conditioning (HVAC) systems which will enable the maintenance of stable temperature and relative humidity conditions necessary for the preservation of the collections stored and exhibited within the Quadrangle. The systems must be monitored continuously to insure that the equipment is operating within acceptable levels of efficiency, energy consumption and safety. In addition, scheduled preventive maintenance tasks for the complex HVAC systems and fire and smoke detection systems must be performed. Preventive maintenance programs in effect for other Smithsonian buildings help to avert major damage to valuable collections that are sensitive to changes in temperature and humidity conditions. A further sum of \$55,000 is required for maintenance supplies, materials and service contracts to support this essential physical plant work.

Two additional gardeners and \$40,000 are required to assist in developing and maintaining the landscape and several distinctive gardens planned for areas bordering the Quadrangle. Victorian parterres will be used which require weekly trimming and edging, and landscaping will include conifers, rock work and water. Other tasks to be performed include maintenance of interior plants, such as flowering seasonal plants and orchids, and greenhouse activities necessary to grow the many types of plants to be displayed.

A further 28 workyears and \$652,000 is sought to establish a Building Management unit to provide a wide variety of support services to all organizations to be located in the new Quadrangle. These organizations consist of the Sackler Gallery, Museum of African Art, International Center, Smithsonian Institution Traveling Exhibition Service, and National Associate and Resident Associate Programs. Services to be provided include cleaning, minor maintenance, labor services, relamping, plumbing, electrical, shipping and receiving and contract coordination.

Of the amount requested, 28 workyears and \$563,000 are required in FY 1986 to fund the part-year salaries and benefits costs of the Building Management staff which will

consist of three organizational sections: Facilities and Administration; Facilities Maintenance; and Custodial and Labor Services. The Facilities and Administration section, which will be responsible for direction and oversight of all building management functions, includes a facilities manager, building services assistant, general maintenance foreman, supply clerk and a shipping clerk in addition to four custodial foremen, an assistant building manager, and two clerk-typists. The Facilities Maintenance section, responsible for electrical, plumbing, painting and other required maintenance services, will be staffed by six trades and craft personnel including one electrician and a helper, two maintenance mechanics, one lampist, and a painter. The Custodial and Labor section will be responsible for keeping all areas of the building clean, for performing labor tasks such as moving of heavy equipment and supplies, and unloading trucks at the loading dock. Approximately 13 custodial workers, seven laborers, one forklift operator and two coat checkers are required to perform these essential support services. An amount of \$89,000 is needed for cleaning and other supplies, safety shoes and uniforms for staff, light bulbs and contractual services including trash removal and pest control.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted General Trust funds are provided by allotments and are used primarily to cover salaries and support costs of six full-time positions (estimated expenditures of \$234,000 in FY 1985 and \$248,000 in FY 1986) and to provide for the payment of the Trust fund share (40 percent) of the Smithsonian's annual costs for the use of the Federal Telecommunications Network System and for the Trust fund share of space rental costs for administrative activities located in L'Enfant Plaza (estimated expenditures of \$793,000 in FY 1985 and \$847,000 in FY 1986). Special Purpose funds are provided primarily from user reimbursement for services rendered to Trust-funded units and are used to purchase supplies, services, equipment and landscaping materials.

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

SMITHSONIAN INSTITUTION
MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1984 Appropriation.....	\$7,040,000	} Equivalent in Excess Foreign Currencies
1985 Estimate.....	\$9,000,000	
1986 Estimate.....	\$7,750,000	

For FY 1986, the Smithsonian requests \$7,750,000 equivalent in foreign currencies which have been determined by the Treasury Department to be in excess of the normal needs of the United States. The Smithsonian Institution's 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.

This appropriation will be used:

- to continue a program of grants to United States institutions for research in those countries where excess local currencies are available (\$4,000,000);
- to bring to the desired level of \$10,000,000 equivalent in Indian rupees the forward-funded reserve in support of future programs of the American Institute of Indian Studies (\$2,750,000); and
- for the fourth and final increment of the United States contribution to the international effort to restore and preserve the ancient city of Moenjodaro in Pakistan (\$1,000,000).

PROGRAM OF GRANTS FOR RESEARCH

The Smithsonian program is a major source of excess foreign currency support for research carried out by United States institutions in the excess currency countries (currently Burma, Guinea, India and Pakistan are so designated) and is distinguished from other Special Foreign Currency Programs in that 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 and scientific relations with other nations. Also, these ties contribute to the integration of the worldwide advancement of science which serves to narrow the gap between the industrial and the developing nations.

The Importance of Research in the Natural Sciences and Cultural History

The rapid growth of world population and technological development has resulted in significant effects on the natural environment and on society. Research sponsored by the Smithsonian in the natural sciences and in cultural history is aimed in part at improving understanding of the environment, and of the management and conservation of scarce natural and cultural resources.

In FY 1984, grants supported the following projects of special interest:

The study of the great Buddhist caves at Ajanta in India has been enhanced by a complete photographic record of the remarkable 1500-year-old cave paintings.

Historians are participating in multidisciplinary studies on the depletion of tropical forests in India in an effort to provide a model for the study of long term ecological change in tropical forests and future management.

United States and Indian geologists are using recently developed fission tracking procedures on uranium bearing sandstone as an aid to the study of the history and movement of ancient ground water.

The unique reproductive biology of the mugger crocodile, currently endangered on the Indian subcontinent, is being studied to develop captive breeding and rearing programs.

Further, with emphasis on information exchange through small workshops, symposia and field conferences, the Smithsonian is encouraging international research in specialized areas. In FY 1984, for example, United States scholars received support for participation in exchanges on the subjects of arid land studies, numismatics, tiger management, Hindi studies, solar-terrestrial physics, and natural history collections.

The Importance of Multiyear Grants

Beginning in FY 1979, the Smithsonian Foreign Currency Program began a policy of multiyear funding of major programs, whenever sufficient funds were available. Such funding is important because rational planning requires the advance commitment of professors' and graduate students' time as well as facilities. Multiyear grants, with annual disbursements subject to satisfactory review of progress by the advisory councils, allow participating institutions to coordinate such projects into their long-range scholarly programs, by providing some assurance of funding for the duration of the project.

Further, the Smithsonian has been able to use multiyear grants to protect successful projects from sudden termination when excess currency accounts were exhausted abruptly. This happened in Poland and Tunisia in 1976 and in Egypt in 1981. With multiyear funding over a three-year period, ten projects in Egypt were funded to reasonable conclusions and three continuing projects gained sufficient time to seek other funding sources.

India currently is projected for removal from the excess currency list by 1987. The Smithsonian hopes to provide stabilizing funding before that time through multiyear grants and, for the American Institute of Indian Studies, a substantial forward-funded reserve.

Benefits to United States Institutions

Since the inception of the program in FY 1966, Smithsonian grants have been made to 233 United States institutions in 41 states, Puerto Rico and the District of Columbia to support more than 800 individual projects. Publications known to have resulted from program grants totaled more than 1,400 to date.

The benefits to United States institutions and host country go beyond the accumulation of data, extending to acquisition of collections of biological specimens and the archeological and ethnographic materials that are acquired in the course of field research. These remain available for further study and interpretation by other generations of scholars long after the research teams supported by the Smithsonian have dispersed and their conclusions have been published. More than 100 such research collections have been placed in United States universities and museums. A similar number of collections have been added to the research resources of the excess currency countries.

The advantages of the program have extended to a far greater number of institutions than the 233 United States institutions which have received grants directly. For example, three of the grantee institutions are consortia of United States scholarly institutions. They are the American Institute of Indian Studies (AIIS) in Chicago, Illinois, with 39 institutional members; the American Research Center in Egypt (ARCE) in New York City, with 27 institutional and approximately 600 individual members; and the American Schools of Oriental Research (ASOR) in Cambridge, Massachusetts, with 135 member institutions.

Smithsonian grants have supported the research in India of more than 550 AIIS fellows over the 17-year period from FY 1968 through FY 1984. Program grants also supported more than 80 ARCE projects over the 18-year period from FY 1966 through FY 1983, and since FY 1977, 80 ARCE fellows received Smithsonian support. Nine ASOR excavations in Israel and Tunisia provided research opportunities for more than 260 senior U.S. scholars and field training for more than 324 graduate students. The Indo-American Fellowship Program, initiated in FY 1977 under the auspices of the Indo-U.S. Subcommittee on Education and Culture, has sent more than 70 scholars from United States institutions to India.

Scientific Review Under the Smithsonian Program

The Smithsonian program considers proposals from any qualified American institution for research in fields of traditional Smithsonian competence. The program seeks the advice of experts in the specific area of sciences to be studied in reviewing the proposals and annually convenes advisory councils of senior scholars from across the Nation. Following the recommendation in the House-Senate Conference Report 95-1672 dated September 29, 1978, the National Science Foundation reviews the credentials of the members of the advisory councils and certifies their competence. The councils discuss and evaluate the proposals, taking into consideration the experts' opinions, and provide specific advice to the Smithsonian regarding the selection of proposals recommended for support and the priorities among them.

Foreign currency awards to other institutions are executed as normal Federal contracts, with the American grantee institutions providing for full fiscal accountability. The Smithsonian audits each grantee's periodic financial reports and where grantees maintain records abroad, conducts site audits to ensure that appropriate accounting procedures are followed.

An annual review of scientific progress is made by the advisory councils before another year of funding is approved. In addition, Smithsonian staff scientists and program advisory council members make onsite visits when firsthand reports are considered necessary. Smithsonian policy requires that grantees publish scientific results and that scientific collections be readily accessible to the scholarly community.

The Importance to the Smithsonian of Awards for Research

Access to funds for independent research is an essential factor in enabling the Smithsonian to attract and retain leading scholars and thereby to maintain a standard of excellence as a research institution. In this context, the Institution's initial request in FY 1966 for an appropriation of excess foreign currencies made it clear that Smithsonian scholars would compete for these funds. The appropriation justification in that year stated that the Institution would "...award and administer foreign currency grants...for maximum benefit of all participating institutions, as well as the Smithsonian." This appropriation has provided Smithsonian scholars an opportunity to pursue new and innovative research.

Under the Special Foreign Currency Program guidelines, Smithsonian proposals are reviewed by the same councils of distinguished scholars as are proposals from outside

institutions. Continuing projects also are subject to annual reviews. (These processes are described above in the section entitled "Scientific Review under the Smithsonian Program.") The Special Foreign Currency Program awards to Smithsonian employees, as to other scholars, often involve participants from other organizations and universities as collaborators. No Smithsonian employee, nor any other grantee, receives personal compensation to duplicate or supplement their salary. Program awards cover only field research costs in the excess currency country, travel to that country, and the cost of publications resulting from research conducted in "foreign currency" countries.

The awards to Smithsonian employees are executed as normal Federal allotments to the individual bureaus of the Institution for the support of approved employee research projects. Such funds are expended in accordance with Federal procurement and personnel regulations.

FORWARD-FUNDED RESERVE FOR THE AMERICAN INSTITUTE OF INDIAN STUDIES

Since 1967, the Smithsonian has provided annual funding to the American Institute of Indian Studies for fellowships, research, symposia and publications and for administrative costs. The Smithsonian has helped sustain this Institute and other American research centers abroad for more than a decade because of their significant contributions to scholarship and science without regard for national boundaries and their special service to American scholars conducting research.

Overseas research centers which depend heavily on excess currency funds for operations and programs are often threatened with closure when their major funding source is suddenly cut off, as happened in Egypt in 1981. The American Research Center in Egypt is now facing the possibility of closing its doors when its grant terminates in 1984, and many projects which would have continued for many years had to be brought to conclusion after 1981.

In FY 1980, FY 1981, and FY 1984, anticipating the future depletion of the excess Indian rupee, the Smithsonian sought and received appropriations totaling \$3,250,000 for a forward-funded reserve for continuation of the activities of the American Institute of Indian Studies after the demise of the excess currency program in that country. In addition to appropriations of \$500,000 in FY 1980, \$750,000 in FY 1981, and \$2,000,000 in FY 1984, \$4,000,000 has been requested for FY 1985. In FY 1986, a further sum of \$2,750,000 equivalent in Indian rupees is requested for addition to the forward-funded reserve. The reserve of \$10,000,000 equivalent in rupees is to be maintained intact, until such time as the depletion of the United States Indian rupee account causes its removal from the "excess" currency list. Estimates of the date have varied but a preliminary survey has been conducted and the close out date is established for the end of FY 1986.

INTERNATIONAL EFFORT TO SALVAGE MOENJODARO

In 1921, two important discoveries were made in the Indus Valley of India, now Pakistan, when archeologists discovered the remains of the cities of Harappa, near Lahore, and Moenjodaro, about 250 miles north of Karachi. These two cities apparently are the products of the Harappan civilization which flourished over 4,500 years ago, from about 3000 B.C. to 1500 B.C. Moenjodaro, a city of a square mile, is the larger and more impressive of the two sites. From the standpoint of planning, sanitation and social organization, this city anticipated developments which only blossomed several thousand years later.

The excavated ruins at Moenjodaro have been threatened since their discovery by two main causes of destruction: floods of the Indus River and highly saline ground waters have caused the serious deterioration of the excavated remains.

Since the 1960s, the Government of Pakistan has appealed to the international community for assistance in salvaging Moenjodaro by diverting the river, lowering the water table, providing remedial action to stabilize threatened buildings and preventing disintegration of those that have not been damaged seriously yet, and installing appropriate landscaping. UNESCO responded to Pakistan's appeal and, in 1974, agreed to lead an international fund raising campaign. In the interim, the Government of Pakistan, with the assistance of UNESCO, has conducted a series of technical studies relating to river control, dewatering and other methods conducive to the eventual preservation of the site.

The project, long in the planning stage, is under way, with a ground water control scheme now in place. Requisitions are being prepared for water pumps, for the consolidation and treatment of the remaining structure and for landscaping. Salt-resistant plants will be planted for erosion control and to provide suitable protection from wind-driven sands.

On October 10, 1979, an agreement between UNESCO and the Government of Pakistan for the preservation and development of the monumental site of Moenjodaro was signed. Following this, an Executive Committee of the Campaign was set up to advise the Director-General of UNESCO on all aspects of the project. The Committee has held several meetings during which various aspects of the plans were reviewed.

To date, UNESCO has raised approximately \$9,300,000, mainly from governmental contributions of member states and the Government of Pakistan has made a commitment of \$3,000,000 for the project. The funds raised thus far have been deposited in an international trust fund for Moenjodaro. Considering that the total budget for the project is now estimated at more than \$19,000,000, the Committee is seeking new or additional contributions.

In FY 1982, the Institution transferred to UNESCO the appropriation of \$960,000 equivalent in nonconvertible Pakistani currency as an initial contribution from the United States toward this important project. In FY 1984, \$1,040,000 was conveyed. An amount of \$1,000,000 is requested in the Institution's FY 1985 budget request. The Smithsonian is seeking a fourth and final increment of funds for this project in FY 1986, a sum of \$1,000,000 equivalent in Pakistani rupees, to complete the United States contribution.

FACILITIES PLANNING, RENOVATION,
RESTORATION, AND CONSTRUCTION

OVERVIEW OF SMITHSONIAN PROGRAMS FOR CONSTRUCTION, RESTORATION AND RENOVATION

The Smithsonian has a carefully planned, integrated improvements program involving restoration, renovation and repair of existing facilities and the planning, design and construction of additional facilities essential to future programmatic needs. Since each of the many projects planned requires considerable study, planning, and design before drawings and specifications can be issued for bid solicitation, it is necessary to forecast these projects several years in advance of seeking appropriations and authorizations. This process greatly assists in the orderly development of facility requirements and a well managed program for implementation of each project. The Table on page 201 outlines the Institution's five-year construction plan. Further details are provided in the Five-Year Prospectus FY 1986 - FY 1990.

Key components of the construction program for which resources are sought in the FY 1986 budget request are the completion of the building in the Quadrangle for a Center for African, Near Eastern, and Asian Cultures, and planning for the acquisition and renovation of the General Post Office Building for programs of the Museum of American Art, the National Portrait Gallery and the Archives of American Art now located in the Patent Office Building across the street. Improvements to the Smithsonian's scientific research facilities also are budgeted in order to meet current and future programmatic needs. Included in the science facility development program are construction of new and improved laboratories and support facilities for the Smithsonian Environmental Research Center near Edgewater, Maryland; planning for the acquisition and construction of a base camp for the Whipple Observatory in Arizona; and construction of improved housing and modern laboratories at various sites of the Smithsonian Tropical Research Institute in Panama.

RESTORATION AND RENOVATION OF BUILDINGS

The FY 1986 request for Restoration and Renovation of Buildings (R&R) represents the Smithsonian's continuing commitment to preserve, maintain and repair its facilities and make improvements essential to meet programmatic requirements. Funds are sought to continue comprehensive programs to: keep Smithsonian facilities, including roofs, facades and terraces, in good repair and efficient operating condition; provide for the safety and security of visitors, staff and collections through upgrading of existing and installation of new fire detection and suppression systems; remove hazardous materials such as asbestos; upgrade heating, ventilating and air conditioning systems to prevent irreparable damage to the National Collections due to inadequate environmental controls; and provide for the needs of disabled visitors and staff. The FY 1986 R&R request also provides for restoration and renovation improvements necessary to meet research, exhibition, education and conservation program objectives of Smithsonian organizations.

ZOO CONSTRUCTION

The FY 1986 request for Construction and Improvements at the National Zoological Park represents the Smithsonian's commitment to continue short- and long-range improvement efforts designed to place the Park among the world's finest zoos. Resources are included to continue major facility renovations and improvements at the Rock Creek Park location and to improve the Zoo's facilities at the Conservation and Research Center located in Front Royal, Virginia. Funds are sought also for essential programs for renovation, repair and preventive maintenance of existing facilities at both the Rock Creek and Front Royal sites.

CONSTRUCTION
QUADRANGLE

FY 1986 Estimate: \$8,000,000

Public Law 96-36, signed by the President on July 20, 1979, authorized planning for the development of the Quadrangle. In FY 1982, \$960,000 was appropriated to complete planning and design for a Center for African, Near Eastern and Asian Cultures within 4.2 acres of land bounded by the Smithsonian Building, the Arts and Industries Building, the Freer Gallery of Art, and Independence Avenue. This project, including a connecting tunnel link to the Freer Gallery, is estimated to cost \$75,000,000, and is being financed equally with appropriated and nonappropriated funding. An amount of \$36,500,000 was appropriated in FY 1983 to allow the Institution to construct a building in the Quadrangle. Because a very favorable construction contract was awarded by the General Services Administration, the Congress rescinded \$8,000,000 from the construction appropriation in FY 1984. Legislative language accompanying this reduction confirmed a continuing commitment from Congress to share equally in the funding of the project and provided for the Institution to request future amounts necessary to complete this major initiative.

The Quadrangle building will include exhibition galleries and supporting museum facilities for display of unique collections of the Museum of African Art, as well as for an expansion of collections of Near and Far Eastern art to be known as the Sackler Gallery. In addition, areas are planned for the Smithsonian Institution Traveling Exhibition Service, expanded public education facilities, and a much needed International Center for special exhibitions and symposia. The joining of these activities and programs in one area will enable the Institution to apply, in a coordinated fashion, major resources to benefit millions of visitors who travel to Washington, D. C., each year. It will provide, as well, an opportunity for foreign nations to present their most important cultural accomplishments to this same audience.

The Quadrangle site will be occupied above ground by two small entrance pavilions bordering Independence Avenue which will serve as introductory galleries and form an enclosure for an eclectic landscape particularly evocative of 19th century landscape design appropriate to the Smithsonian Institution and Arts and Industries Buildings nearby. The two pavilions will allow access to three building levels below grade providing exhibition galleries, libraries, classrooms, and space for the care and study of collections. The galleries will permit the Institution to present a variety of exhibitions drawn from the resources of its own museums, other United States collections, or those borrowed from abroad. The International Center will enable the Institution to organize and present international symposia and exhibitions that will enhance the public's ability to understand distant cultures of extraordinary richness and importance.

Completion of the Quadrangle building is expected in 1986. The Institution requests restoration of the \$8,000,000 rescinded in the FY 1984 Appropriation to provide furnishings and equipment necessary for initial occupancy and opening of the Center to the public. Fund-raising efforts for this project have been very successful, and the Institution has received cash and pledges totaling \$37,500,000 from donors toward completion of the building.

An amount of \$1,900,000 is needed in FY 1986 to purchase and install security devices for the Quadrangle. The security system will be a part of the Smithsonian Institution Proprietary Security System and will require a network of magnetic contacts, motion detectors and associated sensing and transmitting devices to provide a high level of perimeter and internal security for the entire building. Valuable objects will be

protected in exhibit or storage areas using wireless sensors which allow concealment of the devices at the location of the object without wiring through the walls. Closed circuit televisions will be used to maintain visual surveillance in strategic areas of the building where guards cannot be present continually (such as collections storage areas), and to assess activity in crowded or congested areas (such as entrances and lobbies). Access to nonpublic areas, including collection storage, will be controlled using card reader systems, which in addition to restricting access to unauthorized persons, will provide a permanent record of traffic into and out of these areas. Finally, the security systems for the Freer Gallery of Art, the Smithsonian Institution and the Arts and Industries Buildings will be connected to the Quadrangle, which will become the central control facility for the Smithsonian security system.

The Smithsonian also is requesting in FY 1986 the sum of \$6,100,000 to purchase furniture and equipment for public, administrative and shop areas, and to cover the costs of moving collections into the building. Furnishings for the public areas of the new building will include custom-made furniture to reflect the thematic representations of the museums to occupy the building, carpeting and lighting for the exhibit areas, and classroom and conference seating and equipment. Flexible storage equipment will be required to provide proper storage of the collections and library materials, and to furnish areas in which artifacts may be received and studied. In addition, furnishings will be required for administrative areas to accommodate new staff as well as expansion of existing staff from previously cramped space. Conservation, photo and exhibit production equipment will be needed for these expanded functions as well. Movement of collections into the building, particularly the valuable objects of the Museum of African Art and the Sackler Collection now stored at the Museum Support Center in Suitland, will require great care. Provision must be made for custom crating of the most fragile items, secure transportation from their present locations, as well as fumigation prior to entry into the new building.

Restoration of \$8,000,000 is vital to the effective use of the Quadrangle building, and to fulfill the Smithsonian's responsibility to provide security and care for its collections, as well as an enjoyable, educational experience for the visiting public. The Institution is requesting funding for these items under the Construction Appropriation in order to show the total costs of this building in one account.

GENERAL POST OFFICE BUILDING

FY 1986 Estimate: \$3,500,000

Since 1958, when the Institution acquired the Patent Office Building, there has been interest in obtaining the General Post Office Building, which is immediately across F Street and further bounded by 7th, 8th and E Streets in northwest Washington, D.C. Both buildings are the work of America's first native-born professional architect, Robert Mills of South Carolina, who also designed the Washington Monument and the Treasury Building. From time to time since the early 1960s, the Smithsonian has reiterated its interest in the Building to the General Services Administration (GSA).

On May 24, 1983, the Senate Committee on Environmental and Public Works, which has oversight responsibility for GSA, heard testimony from the Smithsonian and the United States International Trade Commission (principal occupant of the Building for the past 60 years) on the respective agencies' interests in the Building. It seems clear that while the Commission would like to remain in the Building because of its convenience and historical association, the Commission is very concerned that long-overdue major repairs be made, and recognizes that the Building is too small to meet all of its needs (about 15 percent of present staff is housed elsewhere). On June 23, 1983, the Committee recommended and on June 29, 1983, the Senate passed S. 1287, the FY 1984 General Services Administration authorization, which contains an amendment directing the Administrator of

GSA to transfer the Building to the Smithsonian without reimbursement, contingent on GSA securing suitable quality space for the Commission's relocation.

On September 28, 1983, H.R. 4025, which embodies the provisions approved by the Senate with respect to the General Post Office Building and authorizes appropriations for the Smithsonian to undertake its repair and renovation, was introduced by members of the House Committee on Public Works and Transportation. A hearing was held on the measure on October 5, 1983, by the Subcommittee on Public Buildings and Grounds.

At its meeting on January 23, 1984, the Board of Regents of the Smithsonian Institution approved similar language with respect to acquisition of the Building. Subsequently, it was introduced by congressional members of the Board as S. 2271 and H.R. 4715.

On March 14, 1984, the Subcommittee held another hearing on H.R. 4025. The full Committee reported the bill on May 15, 1984, with amendments to make the transfer conform to appropriate provisions of the Federal Property and Administrative Services Act of 1949 and to authorize appropriations of \$40,000,000.

The Committee on House Administration and the Senate Committee on Rules and Administration held a joint hearing on August 9, 1984, on S. 2271 and the pending House bills. Further action in both the House and the Senate is expected in the fall.

In anticipation of favorable congressional action to give the General Post Office Building to the Smithsonian, the Institution, in mid-1983, commissioned the architectural and design firm of E. Verner Johnson and Associates, Inc., to develop a preliminary space use study and conceptual facility plan for the Building. The conceptual plan, which was presented to several congressional committees and the District of Columbia Council, suggests a shared and mixed use of the General Post Office Building by the three neighboring occupants of the Patent Office Building: the National Museum of American Art, the National Portrait Gallery, and the Archives of American Art. The two buildings together would provide space for expanded public activities of the three bureaus and would alleviate the physical constraints that the Archives, in particular, is forced to accept in the Patent Office Building. The General Post Office Building offers space for a wide range of museum activities including increased exhibition space, collections study space, classes, seminars, lectures, and upwards of a 300-seat auditorium which could accommodate larger audiences for the already successful public programming produced by the National Museum of American Art and the National Portrait Gallery.

Funds of approximately \$40,000,000 will be required for architectural/engineering and construction services to renovate and repair the Building for public use. Preserving the historic nature of the Building and converting it to public purposes will require a comprehensive program that must meet the special requirements of the museums for fire protection and constant temperature and relative humidity in order to preserve the collections with which they are entrusted, while also providing for the safety and accommodation of visitors. Elements of such a program would include replacing the existing roof; razing the courtyard building and enclosing the courtyard with a glass roof; restoring all of the original interior and exterior architectural finishes; replacing the windows with double glazing; modernizing all electrical and plumbing systems; providing new insulation, a vapor barrier, and a heating and air conditioning system with industrial controls; replacing existing fluorescent lighting with fixtures reminiscent of the period in which the Building was constructed; and installing smoke detection and sprinkler systems along with other security equipment. In FY 1986, \$3,500,000 is requested for the planning and design phase, and \$36,500,000 for the Building's renovation and repair is expected to be requested in FY 1987.

SCIENCE FACILITIES DEVELOPMENT

FY 1986 Estimate: \$13,400,000

The Institution has initiated a coordinated effort to improve science facilities to meet programmatic needs. Hearings are being held before several congressional subcommittees regarding authorization for planning and construction of new and improved laboratories and support facilities for the Smithsonian Environmental Research Center near Edgewater, Maryland; acquisition and construction of a base camp for the Whipple Observatory in Arizona; improved housing and additional research facilities at various sites of the Smithsonian Tropical Research Institute in Panama; and large aircraft storage and exhibition space for the National Air and Space Museum at the Dulles Airport in Virginia. Authorization of these projects is anticipated in the spring of 1985. The components of the FY 1986 construction request for Science Facilities Development are detailed below.

Smithsonian Environmental Research Center (\$2,400,000)

The Smithsonian Environmental Research Center was formed in 1983 by the administrative and programmatic merger of the Radiation Biology Laboratory (RBL) at Rockville, and the Chesapeake Bay Center for Environmental Studies (CBCES) near Edgewater, Maryland. The merger reflects a recognition of shared program interests which would be strengthened through interaction between the two bureaus, as well as the requirement to replace inadequate leased space occupied by RBL in Rockville before the expiration of the lease in 1990. In order to provide appropriate facilities in which the new Center can continue its research programs in both a laboratory and a field situation, further development of the 2,600-acre Smithsonian property near Edgewater is essential. A construction start in late 1986 will allow timely completion and relocation of the Rockville activity prior to the expiration of the lease.

The site near Edgewater includes approximately 2,600 acres on the Rhode estuary, marshes, forest, and former agricultural areas. Present facilities include a renovated dairy barn with a new laboratory wing addition, an education and dormitory building, and miscellaneous small buildings which provide for storage and vehicle and boat maintenance, and several trailers.

Requirements for the expanded research facility include a new laboratory building of approximately 60,000 square feet and four scientifically equipped greenhouses, growth chambers, a wet laboratory and tanks for marine life, and associated administrative support to include a library, computer facility and specialized shops to fabricate and maintain equipment for research and staff offices. Utilities and roads at the site are inadequate to meet both present and newly identified needs and will require major alterations and improvements.

In the planning and design stages, special considerations will be given to minimizing the effect expansion will have on the natural environment of the site. Proper disposal of sewage and toxic chemicals is viewed as a special objective. Consideration will be given also to energy conservation in the design of the facilities. The problems currently created by dust from vehicular traffic will be addressed in improving access and the circulation of vehicles.

With Renovation and Restoration funds provided in FY 1984, a Master Plan was begun, and a site has been selected for the new central research and support facilities. The Master Plan is expected to be completed in FY 1985. An amount of \$2,400,000 is requested in FY 1986 for design and preparation of construction contract documents. Construction funds in the amount of \$24,600,000 are expected to be sought in FY 1987.

Fred Lawrence Whipple Observatory (\$4,500,000)

The Fred Lawrence Whipple Observatory, located on Mount Hopkins 38 miles south of Tucson, Arizona, is the largest field station of the Smithsonian Astrophysical Observatory. It occupies a 4,774-acre site in the Coronado National Forest under a land-use agreement with the United States Forest Service. During the last decade, the Whipple Observatory has developed from a small field station into one of the Nation's foremost astronomical research facilities, attracting thousands of visitors yearly as well as scores of professional astronomers from around the world. The Observatory currently employs 35 people, with an annual operating budget of \$1,500,000.

Historically, a base camp has been maintained 18 miles away at Amado, the closest town to the Observatory, at the point where a paved road changes to the dirt road up the mountain. What was originally no more than a motor pool staging area gradually has expanded into the administrative headquarters and visitors' center of the Observatory. For the past 13 years, the Smithsonian has leased four acres of land from the Tubac School District and private owners at this junction. On the property is a one-level adobe school house and a teacher's residence which have been converted for office use, and various motor pool, repair and storage trailers and sheds served by a gravel driveway and parking areas. However, the buildings and surrounding properties do not provide the facilities required to support the Observatory operation efficiently and safely, and local authorities have indicated that they cannot guarantee long term access to the site.

Public Law 98-73, approved August 11, 1983, authorized the Smithsonian Institution to purchase land in Santa Cruz County, Arizona, for the permanent headquarters of the Fred Lawrence Whipple Observatory. It also authorized the appropriation of \$150,000 for the purchase, and that amount has been included in the pending budget request for fiscal year 1985. The Institution currently is negotiating the purchase of an appropriate site, although it appears that the preferred sites may be priced well in excess of available authority. The architect/engineering firm which has been hired to develop a base camp master plan also has been asked to add a review of other possible sites to its scope of work. The potential exists for a land transfer from the United States Forest Service to the Smithsonian to serve as a site for this activity.

The operation of a large astronomical observatory such as Whipple requires computation and drafting facilities, public display areas, tool shops, vehicle maintenance and storage areas, space for receiving and shipping equipment and supplies, and administrative offices, all with access to major transportation routes in order to coordinate activities in several locations. The Observatory is, in effect, a small scientific mountaintop town which must be supported from the base camp. In addition, the increased public interest in astronomy nationwide, combined with interest in the unique Multiple Mirror Telescope (MMT), has created a growing demand for access to the Observatory and a resultant need for expanded facilities to serve the public. The demand for access to the mountain is anticipated to increase sharply since the MMT has been chosen as the prototype for construction of a larger new generation telescope called the "New Technology Telescope."

The proposed new base camp will consist of administrative offices, a motor pool and an exhibit facility. Administrative office space will provide for purchasing, fiscal, engineering, secretarial, and public information activities. The motor pool facility will support more than 60 vehicles, including buses and heavy machinery used for road maintenance. Enclosed motor maintenance shops are required due to extreme weather fluctuations in the desert environment, and space is needed for spare parts storage. A warehouse also is required for the secure storage of goods and equipment going to and from the Observatory. A small visitors' center will provide for displays and briefings about the activities being conducted at the Observatory as well as astrophysical research being

conducted by the Smithsonian. A full-time public affairs specialist is assigned to the Observatory, and residents of nearby communities serve as volunteer staff greeting visitors, answering telephone and mail requests for information. Appropriate paving will be required for pedestrian walkways, driveways, parking areas and motor pool areas. It is likely also that road improvements may be needed to provide paved access to the base camp from the nearest highway.

Design and construction of a support facility in this area will necessitate consideration of the impact on the surrounding desert environment to allow minimal intrusion on natural landscape, and to avoid pollution of the air and water. The remoteness of the site will be a cost factor in contractor competition. An amount of \$4,500,000 is requested in FY 1986 for the design and construction of the base camp buildings totaling 25,000 square feet along with necessary site improvements, including hardstands, walkways, landscaping, and utilities. Funds also will be used to pave the road from the nearest highway to the new base camp to provide public access.

Smithsonian Tropical Research Institute (\$6,500,000)

The Institution has identified a need to replace and improve obsolete, substandard facilities now in use at the Smithsonian Tropical Research Institute (STRI) in Panama, as well as to provide additional facilities to support the current research program. The Smithsonian plans a phased construction program, to be completed during the next five-year period, according to a Master Plan currently being developed. In FY 1986, funds are requested for the construction of two new facilities -- a terrestrial laboratory on the Tivoli site and a kitchen/dining facility with conference center on Barro Colorado Island.

For a number of years it has been recognized that the present research offices and laboratories for terrestrial scientists at STRI have been inadequate. The present structure, approximately 12,000 square feet, is located at Ancon nearly a mile from the main STRI administrative complex at Tivoli, overlooking Panama City.

The present building was transferred to STRI by the Atlantic-Pacific Inter-Oceanic Study Commission at the conclusion of its deliberations in 1970. The building dates from approximately 1919, and served as a hospital, laboratory and morgue. Despite renovations, it has inadequate wiring and plumbing and its hillside location precludes the development of sufficient outdoor cages or parking to satisfy current scientific requirements. In addition, a severe asbestos problem and the presence of arsenic in the basement pose potential health risks.

The construction of a new terrestrial laboratory facility at the central administrative site will allow for more efficient space utilization in support of scientific programs. The research staff would have improved access to administrative support functions as well as the central library for research endeavors. Greater efficiency in computer usage would be possible via a master raceway network linking all buildings at a common site. Janitorial, maintenance and security services also would benefit from this consolidation.

As presently projected, the new laboratory facility would provide space for approximately 12 permanent staff members and 24 visiting scientists, fellows and assistants. In addition to office and laboratory spaces, other indoor areas would include dark rooms, an aquarium room, a specialized environmental control laboratory, an analytical chemistry room, space for instrument repair, a computer room, chemical storage and disposal systems, reference collection storage and an herbarium. Connected to the main laboratory will be an insectary, an aviary and small animal facility for mammals, reptiles, amphibians, and an area for growing plants. In addition, modest space will be provided for

staff conferences and seminars. In FY 1986, \$6,000,000 is requested for design and construction of this laboratory facility, currently estimated at 30,000 square feet for the laboratory with 5,000 square feet of exterior space.

Barro Colorado Island is the most intensely studied tropical site in the world, and therefore attracts scientists from throughout the globe. Facilities on the Island principally date from the 1920s and 1930s and are affected heavily by tropical conditions. Accommodations must be provided on the Island for both long- and short-term residents and day visitors.

The present dining facility serves meals for up to 45 people, three times a day. Current trends indicate that within two years the need will be up to 80 persons per day. The present kitchen is over 30 years old and the dining room structure dates from the 1930s. Although Restoration and Renovation funds in the amount of \$35,000 were used in FY 1984 to replace and upgrade deteriorated kitchen equipment, both buildings fail to meet minimum modern sanitary conditions and lack sufficient inside storage space and covered connections between food preparation and serving areas. In addition, both wooden buildings are subject to continual infestation by termites and are difficult to fireproof.

The kitchen and dining room facility will be enlarged and designed to provide sanitary and efficient service to users. The design will take into account energy conservation needs, as well as the form, functionality and safety required of structures in the tropics. As proposed, the upper portion of the two-story dining room building will allow space for an educational center. Flexible partitioning will allow it to be used for lectures, conferences, and symposia which occur at least weekly throughout the year on the Island. An amount of \$500,000 is requested in FY 1986 for design and construction of the kitchen/dining room facility.

SMITHSONIAN INSTITUTION FIVE-YEAR CONSTRUCTION PLAN*

	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>	<u>FY 1989</u>	<u>FY 1990</u>
<u>CONSTRUCTION (\$000s)</u>					
Quadrangle /1	8,000				
General Post Office /2	3,500	36,500			
Science Facilities Development /3					
Smithsonian Environmental Research Center	2,400	24,600			
National Air and Space Museum/Dulles		1,200	20,000		
Fred L. Whipple Observatory	4,500				
Smithsonian Tropical Research Institute	6,500	750	2,000	3,500	
Administrative Service Center /4		9,000	18,000		
Suitland Museum Development /5					
Additional storage pod					8,000
Library support center				1,000	9,000
Administrative Office Building /6			1,200	10,800	
Construction Total	24,900	72,050	41,200	15,300	17,000

*Exclusive of National Zoological Park

/1 Funds in addition to those appropriated in FY 1983 will be matched with Smithsonian nonappropriated funds for equipment and furnishings required for initial occupancy and public opening of the building.

/2 It is anticipated that a planning and construction authorization bill could be obtained in FY 1985.

/3 A Science facility planning and construction authorization bill was submitted to Congress in FY 1984, which includes base camp construction for the Smithsonian Astrophysical Observatory at Amado, Arizona, a major laboratory building at the Tropical Research Institute, Tivoli site as well as improvements at other STRI facilities in Panama, relocation of the research activities of the former Radiation Biology Laboratory to the Bay Center, and development of National Air and Space Museum facilities at Dulles Airport. Total estimated planning and construction costs of these projects for FY 1986 - FY 1990 is approximately \$65.5 million.

/4 A facility to replace the leased North Capitol Street administrative service center. The amount of \$9,000,000 expected to be requested in FY 1987 is for site acquisition and planning.

/5 These projects are planned as future increments of museum support facilities at Suitland for History and Art and Libraries, on the same order as the present Museum Support Center building.

/6 This project anticipates purchase or construction of an office building near the Mall as a replacement for currently leased office space.

CONSTRUCTION AND IMPROVEMENTS
NATIONAL ZOOLOGICAL PARK

1984 Appropriation.....	\$3,500,000
1985 Estimate.....	\$3,500,000
1986 Estimate.....	\$9,645,000

This appropriation is for use at the National Zoological Park for repairs, alterations and improvements to existing facilities including exhibits; to prepare plans and specifications for construction; and to perform renovations, restorations and new construction for implementing the Master Plan approved by the Commission of Fine Arts and the National Capital Planning Commission in FY 1973. The Zoo's facilities include 163 acres in the Rock Creek Valley of Washington, D.C., and a 3,150-acre Conservation and Research Center located in Front Royal, Virginia. Construction and improvements are accomplished primarily by contract except in instances when suitable contractors cannot be located or their estimates are above acceptable cost levels in relation to the proposed work. In such cases, accomplishment of the work by other means, such as the purchase of supplies, materials and equipment and/or the use of current staff or temporary labor, is the most economical alternative. Furthermore, occasionally it is necessary to fund other related expenses from this account, particularly those associated with the displacement of animals as a result of the construction program or major grounds maintenance in repair of storm damage.

Status of the Construction Program - The National Zoological Park was established in 1890 under the Board of Regents of the Smithsonian Institution, which was authorized to "administer and improve" the Zoo for "the advancement of science and instruction and recreation of the public" (20 U.S.C. 81). The Zoo administers two permanent facilities. Exhibition and educational functions have been centered since 1890 on 163 acres in Rock Creek Valley of Washington, D.C. Complementary animal conservation and breeding functions have been conducted since 1975 on a 3,150-acre site near Front Royal, Virginia.

The National Zoo's Rock Creek facilities have been undergoing major renovations and improvements since FY 1974 through implementation of the Master Plan. With the transfer of selected and critical animal breeding functions to Front Royal, the elimination of costly projects and the scaling down of others, the total Rock Creek Master Plan program has been reduced from an original plan of 41 major projects and an estimate of \$118,000,000 to 30 projects and a current estimate of \$78,250,000. The total of \$37,000,000 appropriated to date has been spent on 26 new exhibits and support facilities. During FY 1985, a revised Master Plan will be developed that incorporates changes in exhibit concepts as they have evolved during the past decade. The revised Master Plan will place the Park among the world's finest zoos.

With funds anticipated in FY 1985, the Zoo will begin renovation of the Olmsted Walk area. Under the first phase of this project, the section of Olmsted Walk from the Rock Creek entry up to the Small Mammal Building will be renovated to create an identifiable pedestrian entrance at the Rock Creek side of the Zoo. New overlooks will be created above the Beaver Valley exhibits. A new gibbon facility, enlarged lesser panda display and modified tortoise yard will be included as part of the Phase I improvements.

For FY 1986, an amount of \$9,645,000 is requested to support projects at the two sites operated by the National Zoological Park. A sum of \$6,650,000 is sought for Rock Creek improvements as follows:

Renovation of Olmsted Walk - Phase II (\$1,000,000) - An amount of \$1,000,000 is requested for the renovation and improvement of Phase II of the Olmsted Walk. Scheduled

for renovation under this Phase are the widening of the sidewalk on Connecticut Avenue; constructing a low retaining wall and the addition of landscaping on the banks which flank the Zoo's pedestrian entrance; and modifying the Connecticut Avenue vehicle entrance so that it will complement the existing wrought iron gates at the pedestrian entrance. Special paving materials will be used to improve the entry walkway from the Avenue to the area in front of the Education-Administration Building. At the entrance to this Building, a plaza will be created which will include an information kiosk that will serve to provide orientation to visitors entering from Connecticut Avenue. Walkways adjacent to the existing Sable Antelope, Bongo and Dorcas Gazelle exhibits will be reconfigured to incorporate a penguin exhibit. Animal exhibit edges common to the new walkways will be renovated utilizing hidden moats and water features for animal containment and for improved viewing. Funding for the final phase of the Olmsted Walk renovation is anticipated in FY 1987. The final phase will cover the area from just below the Education-Administration Building to the Reptile House.

Health and Research Facility (\$4,300,000) - An amount of \$4,300,000 is requested to renovate the Zoo's existing veterinary hospital. The mechanical systems in the building are over 15 years old and beyond economical repair. Accordingly, the Zoo plans to replace the air conditioning, heating and climate control systems with modern equipment. The building's roof and incinerator also will be replaced. A hospital intensive care unit will be added and improvements to the surgery and radiology areas are scheduled. These changes, which are estimated to cost \$3,000,000, will greatly improve clinical care for the Zoo specimens.

Also scheduled as part of this project will be modifications to the building known as Holt House. This building, currently used by the Zoo's research staff, was erected in 1805, and despite adequate care and maintenance, the structure shows signs of age and deterioration. It is estimated that \$1,300,000 will be required for Holt House renovations.

Savannah and Plains Animals (\$100,000) - An amount of \$100,000 is requested to fund the design phase of the Savannah and Plains Animals exhibit. The Zoo, currently without exhibits on flat terrain which simulate the African Savannah, plans to create an exhibit of prairie and plains animals on the present site of parking lot "B." (This is the lot north of the Elephant House.) This area will complement the Olmsted Walk area. Actual construction funds of \$1,000,000 are expected to be sought in FY 1987.

Renovation, Repairs and Improvements: Rock Creek (\$1,250,000) - An amount of \$1,250,000 is requested to continue the program of renovation, repairs and preventive maintenance of existing facilities at Rock Creek where there are over 60 facilities of varying ages, and 163 acres of land containing over 18 miles of heavily used paths and roadways. The pedestrian paths and vehicle roadways require regular maintenance in order to prevent future, more costly repairs and construction. Renovation, repairs and improvements funds also are used to complete necessary repairs to mechanical, electrical, plumbing and support systems; animal exhibits and housing; and to pay for temporary relocation of animals during the time when repairs are being done.

The Zoo plans to use the amount sought in FY 1986 for the following renovation and improvement projects:

General Repairs and Improvements (\$290,000) - Funds are required to support emergency repairs that cannot be anticipated in advance. Projects may include repairs to roadways and buildings due to storm damage, erosion control and other unanticipated events.

Structural Repairs and Exhibit Restorations (\$660,000) - A number of the Zoo's exhibition buildings are in need of structural repairs to roofs and heating, ventilating

and air conditioning systems. In addition, the underground utilities system requires overall repair and maintenance. To accomplish this work, a sum of \$500,000 is sought in FY 1986. A further amount of \$160,000 is requested for the repair of water leaks and other concrete damage to the basement of the Reptile House in preparation for the installation of an invertebrate exhibit.

Seal Filter System Renovation (\$300,000) - The existing water filtration system for the seal exhibit, installed in 1977, is not adequate to provide the required water quality in the 120,000-gallon pool. It is necessary to renovate the filtration system to provide the water quality necessary to exhibit these aquatic mammals. The renovation will incorporate the same state-of-the-art design used in the FY 1984 renovation of the 400,000-gallon sea lion exhibit.

The following projects will be accomplished for a sum of \$2,995,000 at the Zoo's Conservation and Research Center, Front Royal, Virginia:

Maintenance Facility (\$75,000) - An amount of \$75,000 is requested to design a maintenance facility at the Center. The plan calls for consolidation of the maintenance trade shops into one area for improved operations, security and accessibility. A group of supply buildings will be renovated and modified to serve this function, providing a separate service entrance and parking for the Center's motor pool operations. Actual construction funds of \$850,000 are expected to be requested in FY 1987.

Primate Facility (\$170,000) - An amount of \$170,000 is sought to fund the design phase of the Primate Facility. This Facility will enable the Center to expand the variety and number of primates accommodated in research programs while providing better protection for the animals from communicable diseases to which these species are highly susceptible. The building will be located in the central area close to the small animal facility and veterinary hospital. The request for FY 1987 is expected to include \$1,700,000 for construction costs for the facility.

Large Hoofed Stock Facility (\$2,300,000) - An amount of \$2,300,000 is requested to construct a facility to house hoofed stock (pachyderms) for research and breeding purposes. The Facility will permit the Zoo to pursue actively, breeding programs for such endangered groups as rhinoceroses, elephants and tapirs.

Renovation, Repairs and Improvements: Front Royal (\$450,000) - An amount of \$450,000 is requested to continue the program of renovation and repair of existing facilities at the Conservation and Research Center at Front Royal, Virginia. The Conservation and Research Center includes 89 facilities of various types, containing approximately 236,000 square feet of space, two and one-half miles of paved roads, 20 miles of jeep trails, and 30 miles of fences, all of which must be maintained. Funds also will be used for upgrading the Center's utility systems.

(\$000's)

NATIONAL ZOOLOGICAL PARK
Construction Program
1974-1990

<u>Activity</u>	<u>1974-84</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Repro- grammings</u>	<u>TOTAL</u>
<u>I. Master Plan</u>									
Lion-Tiger Facility	3,000 / 1								3,000
Elephant/Bird House	3,130							+26	3,156
Education-Administration Building	2,500							-157	2,343
General Services Facility	7,000							+834	7,834
Lower Rock Creek Valley	3,000							-1	2,999
Beaver Valley Area	6,410							-431	5,979
Central Area	10,390							-266	10,124
Waterfowl Pond and Small Cats	520							-15	505
Aquatic Habitats	500			1,200	12,000			-1	13,699
Health & Research Facility		3,000							3,000
Holt House Renovations		1,300							1,300
Master Graphics	200								200
Entranceway & Olmsted Walk	350	2,000	1,000	1,500					4,850
Goats & Sheep Exhibits					60	600			660
Savannah & Plains Animals			100	1,000					1,100
Parking Facility							1,500		1,500 / 2
Subtotals	37,000	2,000	5,400	3,700	12,060	600	1,500	-11	62,249
<u>II. Renovations, Repairs & Improvements</u>									
Rock Creek	6,180	1,050	1,250	1,400	1,500	1,650	1,800	+11	14,841
Totals, Rock Creek	43,180	3,050	6,650	5,100	13,560	2,250	3,300	—	77,090

(\$000's)

NATIONAL ZOOLOGICAL PARK
Construction Program
1974-1990
(continued)

Activity	1974-84	1985	1986	1987	1988	1989	1990	Repro- grammings	TOTAL
<u>III. Conservation and Research Center</u>									
<u>Development Plan</u>									
Hoofed Stock Barn	650								650
Small Animal Facility	1,680								1,680
Veterinary Hospital	1,400								1,400
Maintenance Facility		75	850						925
Primate Facility		170	1,700						1,870
Large Hoofed Stock Facility		2,300		60	600				2,300
Road Improvements/Extensions					100		1,500		660
Administrative Facility							30		1,600
Staff Housing									30
Subtotals	3,730	—	2,545	2,550	60	700	1,530	—	11,115
<u>IV. Renovation, Repairs & Improvements</u>									
Conservation & Research Center	4,804	450	450	600	650	650	700		8,304
Totals, Conservation & Research Center	8,534 /3	450	2,995	3,150	710	1,350	2,230	—	19,419
GRAND TOTALS	51,714	3,500	9,645	8,250	14,270	3,600	5,530	—	96,509

/1 Excludes \$275,000 for planning appropriated in FY 1973.

/2 Construction is scheduled to begin in FY 1991. Actual construction costs are estimated at \$16,000,000.

/3 Excludes \$125,000 appropriated in FY 1975 under Restoration and Renovation of Buildings Account.

RESTORATION AND RENOVATION OF BUILDINGS

1984 Appropriation.....	\$9,000,000
1985 Estimate.....	\$13,750,000
1986 Estimate.....	\$24,625,000

The Restoration and Renovation of Buildings (R&R) account is used to finance repairs, alterations and improvements to Smithsonian facilities. (The repairs and renovations at the National Zoological Park are presented separately in this budget submission.)

Smithsonian facilities are comprised of over 4 million square feet of building space located in 14 museum and gallery buildings (including the Quadrangle, now under construction) in Washington, D.C. and New York City, housing research and collections management activities and a wide range of exhibitions in the fields of science, history, technology and art. In addition, the Institution operates and maintains preservation, 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 old.

The Smithsonian's request of \$24,625,000 for FY 1986, coupled with ongoing planning of major initiatives in subsequent years, illustrates the Institution's commitment toward strengthening the restoration and renovation programs to better the condition of existing facilities and to a thorough and creative process of planning for and meeting future facilities requirements. Although funds are sought in this budget to continue a wide range of essential repair, alteration and improvement projects, major emphasis will be placed in this and subsequent years on restoring and renovating facades, roofs and terraces; improving heating, ventilating and air conditioning systems at facilities on and off the Mall; completion of design and installation of fire detection and suppression systems; continuation of work consistent with master plans developed for off-Mall and Mall facilities; and the planning, design, renovation, and construction of facilities to meet present and future research, collections storage, exhibition and other programmatic needs of the Institution.

The Institution's Five-Year Prospectus identifies specific categories of work which are estimated to cost approximately \$143.28 million between FY 1986 and FY 1990 (in 1984 dollars). The FY 1986 request of \$24,625,000 represents an increase of \$10,875,000 over the FY 1985 R&R request and emphasizes the Institution's commitment to establish the necessary level of annual funding for this account in consideration of the size, diversity, age, condition and character of the Smithsonian facilities. The justification for this year's budget request follows:

1. General repairs and improvements	\$ 545,000
2. Facade, roof and terrace repairs	4,375,000
3. Fire detection and suppression systems	1,970,000
4. Access for the disabled, safety and security and correction of hazardous conditions	1,110,000
5. Utility systems repairs and improvements	6,605,000
6. Other projects	<u>10,020,000</u>
Total	\$24,625,000

GENERAL REPAIRS AND IMPROVEMENTS (\$545,000): Funds requested in this category support a wide variety of projects that do not lend themselves to discrete

categorizations; they also support minor unscheduled, but essential, repairs that cannot be anticipated specifically. Examples of projects include unforeseeable repairs or replacements of building systems or components which fail unexpectedly; modifications to create additional or more effective space for program activities; renovations of exhibition and other public spaces; and repairs to facility support systems. For FY 1986, an amount of \$545,000 is requested, of which \$150,000 is designated primarily for emergency repairs, and \$150,000 is sought for minor repairs at off-Mall facilities such as plumbing, electrical, lighting, and floor and wall repairs. A further sum of \$100,000 is sought for development and improvement to roads and parking lots at the Smithsonian Environmental Research Center near Edgewater, Maryland. These repairs will include repaving the calf barn parking lot; resurfacing the road from the back gate to the central area; and constructing 40 bypasses for single lane trails. An additional amount of \$300,000 is expected to be sought through FY 1989 to continue this project. For the Smithsonian Institution Building, an amount of \$100,000 is needed to repair walls and replaster the north staircase which at the ground floor joins the public mall entrance to the Great Hall. Over the years, water intrusion from above the staircase has resulted in cracking and breaking off of large areas of plaster. The water problems have been resolved temporarily. However, more permanent wall repairs are required, the damaged plaster needs to be removed and replaced with new plaster, and the stair walls repainted. A sum of \$30,000 is required for Mall sidewalk repairs and parking lot improvements where needed to eliminate hazards to the public and staff. For the Air and Space Museum's storage Building 22 at the Suitland facility, an amount of \$15,000 is needed for a roll-up door. The existing sliding metal doors have deteriorated over the years and will be replaced with an overhead roll-up door equipped with an electric operating system.

FACADE, ROOF AND TERRACE REPAIRS (\$4,375,000): Maintaining the integrity of the exteriors of all Smithsonian buildings is critical to prevent major structural damage and deterioration due to age and weathering and to ensure a safe environment for visitors, staff and collections. Energy conservation also demands watertight and weather tight exteriors. Work in this category includes a variety of major projects that must be accomplished periodically according to the life cycles of the materials used. For example, roof replacements are needed about every 20 years; facade joints must be recaulked and repointed about every ten years; and window frames and other exterior trim should be repainted every five years. Several Smithsonian buildings require large-scale renovation, and work is under way to assure that in the future adequate protection of the exteriors of these buildings can be provided through a preventive maintenance and repair program.

For FY 1986, a total of \$4,375,000 is sought to continue, complete, and initiate essential roof and facade projects at seven Smithsonian buildings. A sum of \$1,500,000 will continue the multi-year roof and facade project at the Arts and Industries Building; \$300,000 will be used to complete the caulking and repointing of the facade of the Natural History Building; \$1,500,000 will be used to begin resurfacing the Plaza at the Hirshhorn Building; \$600,000 is needed for two roof projects at the Freer Gallery of Art; \$300,000 is required for entrance modifications at the American History Building; and a total of \$175,000 is required for three smaller projects: caulking and repointing (\$50,000) and window replacement (\$50,000) at the Smithsonian Institution Building and the continuation of stone repairs at the American Art and Portrait Gallery Building (\$75,000).

Excellent progress is being made in the renovation of the facade of the 120 year old Renwick Gallery Building. The Institution has proceeded carefully on this renovation project in order to assure that repairs will provide a permanent solution to the problem while maintaining sensitivity to the building's status as a National Historic Landmark. An amount of \$5.45 million has been appropriated through FY 1984 and the sum of \$500,000 requested in FY 1985 will be used to complete this project in late 1985.

An amount of \$1.5 million is sought in FY 1986 to continue the multi-year renovation of the roof and exterior of the historic Arts and Industries Building in order to assure watertightness, energy efficiency and further restoration of original architectural features. Funds of approximately \$1.25 million were appropriated in FY 1977 and FY 1978 for the first phase of exterior renovation work. These were applied toward replacing the roofs of the courts, four halls and rotunda; repairing rotunda and hall windows; replacing some gutters and downspouts; selected repainting in the most deteriorated areas; and other related repairs. With \$225,000 appropriated in FY 1980, the Institution contracted for professional architectural/engineering services to provide the necessary analysis, documentation, cost estimates, detailed drawings and specifications for the remaining work. The final design effort has been completed. Funds of \$6.43 million appropriated since FY 1981 are being used to continue the exterior restoration on a quadrant-by-quadrant basis. Funds appropriated from FY 1982 to FY 1984 were used to restore the northwest quadrant, the west facade, the southeast and northeast pavilions, the southeast quadrant and east towers. The sum of \$2.5 million requested in FY 1985 will be used to restore the northeast quadrant, north entry and south towers. An amount of \$1.5 million is sought in FY 1986 to restore the southeast quadrant, including demolition and restoration of the east facade of the southeast quadrant. Restoration work includes the removal and replacement of existing (range, pavilion and tower) roofing, flashing and underlayment; removal of abandoned or nonoriginal elements, such as skylights, roof vents, exhaust ducts and mechanical equipment; and the repair, relocation or replacement of the roof drainage and guttering systems. Other major aspects of the project include replacement and improvements to window components (frames, sashes, glazing, painting, weather stripping and hardware) and the incorporation of an electronic security system; the provision of fire exit windows; reconstruction, cleaning and repointing of exterior masonry; the removal of nonoriginal equipment located on the facade of the building, such as window air conditioning units, exhaust fans and steam pipes; and the restoration of some of the building's original elements, such as lighting standards at the entrances, cast iron gates and ornamental metal. The total project cost is estimated to be \$12.15 million; the balance of \$250,000 is expected to be sought in FY 1987 to complete the project. Exterior restoration is scheduled for completion in 1987.

For the Natural History Building, an amount of \$300,000 is needed in FY 1986 to complete the caulking and repointing of the building's facade. The entire building will be caulked including all joints required to be watertight and the main building's facade will be repointed. A sum of \$250,000 requested in FY 1985 will be used to initiate the first phase of the project.

An amount of \$600,000 is required in FY 1986 for two roof projects for the Freer Gallery Building. Funds are needed for a roof replacement which will be coordinated with the installation of a cooling tower and roof insulation for greater energy conservation. Another important part of the roof system is the skylights. These account for about 35 percent of the total roof area. Funds also are requested to repair the skylights to eliminate water intrusion. Repairs include removing glazing; cleaning glass edges and frames; sealing glass perimeters; replacing broken glass; and cleaning or replacing gutters.

The Hirshhorn Building's exposed aggregate concrete plaza has not weathered well. Despite repair and replacement of several areas over the past few years, spalling and breaking still occurs due to freezing and thawing actions in the winter. Poor drainage and ponding is a safety hazard for pedestrians in the winter when water deposits freeze and the Plaza becomes very slippery. An amount of \$1.5 million is sought in FY 1986 for the design and construction of a new Plaza surface. A landscape architect engaged by the Museum is working on a new approach for its resurfacing. Larger grass areas will be used to display sculpture, and walkways will be constructed throughout the exhibits. New plantings also will be added to improve the Plaza's appearance, and new water and drainage systems will be installed to correct existing deficiencies. An additional amount of \$1.5 million is expected to be sought in FY 1987 to complete this project.

At the American History Building, the north and south entrances have been a constant and expensive repair problem since the opening of the Museum in the early 1960s. The operating mechanisms of the doors are inside the frames which make them difficult and expensive to repair and parts are not readily available. Frequent breakdowns have damaged and weakened the frames and they must be replaced. Also, the change in the levels of light between daylight and the building's interior is very abrupt, creating visual problems for the visitors as they enter the building. An amount of \$300,000 is requested in FY 1986 for entrance modifications including replacing the frames, doors and transoms; replacing glazing with double-glazed bronze tinted glass to conserve energy and provide an area of light transition for visitors; and raising the light level at the vestibules by upgrading or replacing the existing lighting.

An amount of \$175,000 is requested in FY 1986 for three additional projects. For the Smithsonian Institution Building, a sum of \$50,000 is needed to repoint and caulk a number of deteriorated facade areas which were revealed when the ivy was removed in 1983; funds of \$75,000 are sought to continue the stone repairs at the American Art/Portrait Gallery Building to be initiated with \$150,000 requested in FY 1985; and \$50,000 is required to initiate the first phase of a window replacement project at the Smithsonian Institution Building which has approximately 400 windows of different sizes and shapes. Most of the windows will be replaced because some have deteriorated frames and sashes and some previous replacements conflict with the architectural style of the building. To conserve energy all windows will be double-glazed. A sum of \$1.16 million is expected to be sought through FY 1990 for this project.

FIRE DETECTION AND SUPPRESSION SYSTEMS (\$1,970,000): The Institution is continuing to upgrade fire protection systems in all buildings to provide a level of safety consistent with today's standards and technology. Work includes the installation of heat and smoke detection systems; sprinkler and chemical suppression systems; fire doors and walls; and the improvement of exit capability, particularly in older buildings. Improved systems also are installed as exhibitions are changed.

For FY 1986, a total of \$1,970,000 is requested to continue the implementation of fire protection master plans at the Natural History Building (\$500,000) and the American History Building (\$800,000); to develop a fire protection master plan for the Air and Space Building (\$150,000) and to update the plan for the Arts and Industries Building to accommodate space use changes (\$100,000); and to accomplish three additional projects: continuation of a series of fire protection improvements at the American Art/Portrait Gallery Building (\$120,000); installation of sprinkler systems in the Smithsonian Institution Building (\$150,000); and installation of a fire protection system in a collection storage building at Silver Hill used by the Museum of American History (\$150,000).

The Natural History and American History Buildings represent the largest areas with the least fire protection, and efforts are being made to correct this major safety deficiency. A fire protection master plan for the Natural History Building was developed in FY 1979, and steady progress has been made since then in carrying out the plan.

With funds appropriated in FY 1979 through FY 1984 (\$2,075,000), construction has been completed on the sprinkler and smoke detection systems for the Natural History Building's west wing; the master fire control panel; and the installation of water supply risers, alarm conduit and wiring required for the east wing. Construction has begun on the installation of the east wing sprinkler and smoke detection systems; sprinklers and smoke detectors in the ground floor, part of the third floor in the main building and the Baird Auditorium and detectors in the west court. Funds of \$500,000 requested in FY 1985 will be used to provide emergency public exits from the original building to the east and west wings; to provide fire separation zones between the original building and the east and west wings, and between the original building and the three-story West Court addi-

tion; to improve fire protection for woodworking and flammable storage rooms; and to provide safe flammable liquid storage areas in the east and west wings. An amount of \$500,000 is required in FY 1986 to continue projects to be funded in FY 1985, and in addition, construct decking over the skylights in Halls 2 and 10 and provide sprinklers for the decked over area. It is expected that an amount of \$1.7 million will be required through FY 1990 to continue the fire protection master plan work in the Natural History Building.

The fire protection master plan for the American History Building outlines phased improvements similar to those under way or planned for the Natural History Building, including upgrading and/or adding sprinkler and detection systems; upgrading the existing emergency power supply and distribution system; upgrading the fire pumps; installing a new fire alarm system; and undertaking architectural modifications to improve the efficiency of fire zones and exit capabilities. With funds of \$1,265,000 appropriated in FY 1980 through FY 1984, the fire protection master plan was completed; fire door separations were designed for the first floor; a new ten-inch water main from the street to the building and sprinkler risers throughout the building were designed and installed; electrical trunk lines for smoke detection systems and sprinkler annunciation alarms were designed and installed; and additional automatic sprinkler and smoke detection systems are being installed throughout two-thirds of the basement level. Funds of \$200,000 requested in FY 1985 are needed to continue installation of sprinklers and smoke detection systems in the basement and to begin installation of fire protection systems on the fourth floor. For FY 1986, a sum of \$800,000 is sought to continue fire protection work on the fourth floor which includes installing sprinkler systems; removing existing heat detectors; installing smoke detection systems and fire pull stations; and installing an emergency generator. It is expected that an amount of \$2.0 million will be required through FY 1990 to continue the fire protection work in the American History Building.

Over the past several years, some sprinklers and smoke detection systems have been installed in the Air and Space Building. In order that a systematic approach be taken, an amount of \$150,000 is requested in FY 1986 to develop a fire protection master plan which will identify the fire protection needs throughout the building. A sum of \$400,000 is expected to be sought through FY 1990 for the implementation of this project.

For the American Art/Portrait Gallery Building an amount of \$120,000 is requested to continue fire protection projects which will be initiated with funds of \$180,000 requested for FY 1985. These projects include upgrading emergency exits from the building; installing fire zones; providing emergency lighting; upgrading fire doors; and installing smoke detection systems. A sum of \$330,000 is expected to be sought through FY 1988 to complete this project.

With funds appropriated in FY 1983 (\$145,000) and FY 1984 (\$150,000) smoke detector systems were designed and installed in the Smithsonian Institution Building. Funds of \$150,000 requested in FY 1985 will be used to install sprinkler systems in the basement and fire-rated partitions throughout the building. For FY 1986, an amount of \$150,000 is sought to continue fire protection measures such as upgrading hardware on emergency door exits and installing sprinkler systems in the center section's attic. An additional amount of \$800,000 is expected to be sought through FY 1990 to continue this project.

In FY 1986, plans call for the National Museum of American History's collection storage Building 17 at the Suitland Facility to be upgraded. An amount of \$150,000 is required in FY 1986 to install new smoke detection and sprinkler systems throughout the building for the protection of collections and the staff.

An amount of \$100,000 is requested in FY 1986 for the Arts and Industries Building to update the fire protection master plan based on the space use changes recommended by a space utilization study being conducted in 1984. With funds of \$150,000 appropriated

from FY 1982 to FY 1983, smoke detection systems were installed in the pavillions. In FY 1985, a sum of \$75,000 requested will be used to install smoke detection systems in the four major exhibit halls. An additional amount of \$300,000 is expected to be sought through FY 1990 to continue this project.

ACCESS FOR THE DISABLED, SAFETY AND SECURITY AND CORRECTION OF HAZARDOUS CONDITIONS (\$1,110,000): Progress is being made on correcting facility conditions to improve the security of the National Collections, promote improved environmental conditions for the health and safety of visitors and staff, and to provide better access for disabled persons to Smithsonian facilities.

For FY 1986, a total of \$1,110,000 is sought for six projects. To correct hazardous conditions, an amount of \$500,000 is required to continue asbestos removal in the American History Building and in that Museum's Silver Hill storage building; \$50,000 will be used to purchase an industrial woodworking exhaust system for the American Art/Portrait Gallery Building; \$50,000 is required to complete the installation of window security wiring at the Renwick Gallery Building; and \$35,000 is needed to replace deteriorated ladders and platforms at the Natural History Building. A sum of \$275,000 will be used to complete the purchase of proprietary alarm system equipment. To accommodate disabled persons, a sum of \$200,000 is needed to continue a program of modifications to the Natural History Building.

The safety and security of collections, visitors and staff necessitate facilities modifications. Major attention will continue to be placed on the containment or removal of asbestos materials located in various Smithsonian facilities. Asbestos has been identified in areas of the American Art/Portrait Gallery Building; the American History Building; the Natural History Building; the Arts and Industries Building; and in a number of buildings at the Suitland Facility. Additional areas contain asbestos, primarily the mechanical equipment rooms in several other buildings. Funds of \$1,150,000 appropriated in FY 1981 through FY 1984 were applied toward the containment and removal of asbestos in the attics, mechanical equipment rooms, skylight areas and exhibit halls of the American Art/Portrait Gallery Building; in the carpentry shop in the Natural History Building; and in the television studio and several basement and third floor areas in the American History Building. Funds of \$400,000 requested in FY 1985 will continue this program of asbestos removal in the American History Building's basement and fourth floor mechanical rooms, and for asbestos abatement in the National Museum of American History's Storage Building 19 at the Suitland Facility. For FY 1986, an amount of \$500,000 is needed to continue removing insulation found to contain asbestos and asbestos duct insulation in the mechanical rooms at the American History Building. An amount of \$2.0 million will be required through FY 1990 to continue this program.

Another major project under way is the conversion to an electronic security and fire alarm system owned and operated by the Smithsonian. The purposes of converting to a proprietary security system are to gain faster response times to security and fire protection alarms; improve the quality and control of information transmitted from security devices and fire sensors to building security offices and the central control room; and eliminate reliance on leased equipment, outside sources of power and related contractual services, for which costs are escalating rapidly. Current cost estimates for FY 1982 through FY 1986 for the R&R portion of the phased conversion total approximately \$1.575 million. Funds of \$900,000 appropriated in FY 1982 through FY 1984 were used to purchase permanently installed equipment, including the computer and necessary building modifications to accommodate this equipment in the central control room of the Smithsonian Institution Building and the Museum Support Center. Funds of \$400,000 requested in FY 1985 will be used for the modifications needed for the installation of security equipment at the Natural History, Freer Gallery, Smithsonian Institution, American History and Arts and Industries Buildings. A further sum of \$275,000 is required in FY 1986 to complete the project.

The north and south entrances at the Natural History Building were modified in FY 1980 to improve access for the disabled and improve emergency exit capabilities. With funds of \$200,000 requested in the FY 1985, Mall entrance gate repairs will be completed and north and south entrance modifications will be made including renovating the west corridor to the Learning Center and repairing, cleaning and finishing all bronze surfaces at the entrances. In FY 1986, a sum of \$200,000 is needed to continue these modifications which will include installing new bronze railings at the entrances; designing and installing guardrails at the South Terrace; and automating the door at the north entrance. An additional amount of \$280,000 is expected to be sought in FY 1987 to complete this project.

An additional sum of \$135,000 is sought for three security projects. For the American Art/Portrait Gallery Building, an amount of \$50,000 is needed for an industrial woodworking exhaust system for the shop areas. Such a system is needed because the exhibits shops work with wood and plastic generates large quantities of airborne particles which are a health and safety hazard. A sum of \$35,000 is required at the Natural History Building to renovate the Rotunda's deteriorated dome ladders and platforms. The existing wooden ladders and platforms will be replaced with lightweight aluminum ones. A nylon safety net also will be installed under the work platforms to protect against accidental dropping of tools and equipment. Funds of \$50,000 are sought to complete the installation of window security wiring at the Renwick Gallery Building. This work will begin with funds of \$20,000 requested in FY 1985 and will be coordinated with the facade renovation.

UTILITY SYSTEMS REPAIRS AND IMPROVEMENTS (\$6,605,000): Funds appropriated in this category are used to maintain, repair and upgrade the heating, ventilating and air conditioning systems (HVAC) and plumbing and electrical systems in the Institution's facilities. Proper maintenance and improvements of these systems are essential for increasing energy efficiency and for providing stable temperature and humidity conditions necessary for the preservation of the collections. Scheduled repairs and replacements of deteriorated equipment components require a consistent level of funding, and major renovations and repairs are required in many Smithsonian buildings where utility systems were not designed with the aid of today's energy saving technologies.

The Institution is making a concerted effort to conserve energy (see the Uncontrollables section for a description of these efforts). The most significant energy savings, however, will be realized by applying substantial resources toward upgrading HVAC systems, replacing obsolete equipment and improving the efficiency of environmental zones. HVAC systems have been modified over the years as the Institution's programs have grown, as the functions of the buildings have changed, and as the environmental needs of the collections have become understood better. Prior to 1972, energy conservation did not represent a primary consideration. An integrated approach now is required in order 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 have been conducted for most of the buildings in order to begin planning of future 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 are providing a basis for determining redesign or replacement needs of existing HVAC systems; for development of construction cost estimates or revision of previous cost estimates; and for establishment of 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 are being performed to investigate all factors relating to energy use, such as power-consuming equipment and building conditions (doors, windows, insulation, floors and partitions, etc.). Current energy consumption and costs are being evaluated; energy conservation opportunities are being identified; projected savings are being calculated; and plans are being developed to carry out the recommended energy conservation measures.

For FY 1986, a total of \$6,605,000 is requested for utility systems repairs and improvements. The major portion of this request, \$5,100,000 is designated for comprehensive projects to upgrade heating, ventilation and air conditioning systems at the American History Building (\$1,500,000), the Natural History Building (\$2,000,000), and the Arts and Industries Building (\$1,600,000), and the sum of \$250,000 will be used to begin modifications for the HVAC system of the Air and Space Building. To implement a recommendation resulting from an energy conservation study, \$300,000 is required to correct deteriorated windows and frames at the Cooper-Hewitt Museum. An amount of \$825,000 is sought to prepare several buildings for communication cables that will permit the operation of various computer systems. A total of \$130,000 is requested for three smaller projects: to undertake energy conservation improvements at the Renwick Gallery of Art (\$50,000); to install an emergency generator at the Smithsonian Tropical Research Institute (STRI) (\$60,000); and to upgrade a sewage system, also at STRI (\$20,000).

At the American History Building, a comprehensive HVAC study that was initiated with \$100,000 appropriated in FY 1981 was completed in 1982. Additional monies appropriated in this category between FY 1981 and FY 1984 (\$1,285,000) were used to replace 12 deteriorated air handling units and a cooling tower. An amount of \$1.8 million requested for FY 1985 will be used to prepare drawings and specifications for the first phase of HVAC renovation based on the study findings and to begin implementation of the design. Difficulty in maintaining necessary environmental conditions is due, in part, to the age and construction of the building and the age and design of the HVAC system and its controls. The study findings indicate upgrading the mechanical system is necessary to bring the system up to acceptable museum standards of operating efficiency and reliability. Other related projects recommended in the study include caulking and weatherstripping windows and doors; shading and sunscreening windows; ceiling and wall improvements; window replacements; and installation of a central control and monitoring system. An amount of \$1.5 million is sought in FY 1986 to continue renovating the HVAC system which is expected to begin in FY 1985. An amount of \$4.8 million is expected to be sought through FY 1990 to continue this project.

The Natural History Building houses 84 million specimens in reference collections and also has a wide array of public exhibits that attract millions of visitors annually. The physical limitations of the building, and the age, type and deteriorating condition of the HVAC systems, refrigeration equipment and controls make it impossible to maintain the environment required for the preservation of the Museum's collections and exhibits. In April 1983, an environmental control and energy conservation study was completed. The study findings suggest that the air cooling units, central return air and exhaust fan systems be replaced with a centralized air system to be located in new penthouses over the east and west wings for energy efficiency, cost effectiveness and systems reliability. Other improvements recommended include wall vapor barriers; roof insulation; replacement of single glazed windows with double glazed windows; entrance and exit door modifications; air locks on loading docks; centralization of laboratories with new exhaust systems; new air conditioning units for the Rotunda and attics; cabinet shop dust collection systems; West Court utility systems improvements; automatic temperature control system improvements; replacement of chillers; and a central control and monitoring system. The total cost of these recommendations is estimated to be \$54.50 million. These recommendations are being evaluated and reconciled because some of them conflict

with program objectives. An amount of \$2.0 million is sought in FY 1986 for the preparation of design and specifications and initial implementation of this work. A sum of \$19.9 million is expected to be required through FY 1990 to continue this project.

An environmental control and energy conservation study of the Arts and Industries Building was completed in 1981. The findings indicate that the physical limitations due to construction of the building, coupled with the age, type and location of the HVAC equipment make it impossible to maintain the proper environment required for preservation of the collections in the Building. An amount of \$1.6 million is required in FY 1986 to begin implementation of the study findings which include upgrading the HVAC systems and controls; construction of a new floor for a machine room; removal and relocation of the existing computer center; installation of new ceilings; and installation of vapor barriers. An amount of \$10.3 million is expected to be sought through FY 1990 to continue this project.

At the Air and Space Building, an environmental control and energy conservation study was completed in 1982. Based on the study findings, modifications to HVAC equipment and systems are needed to improve environmental conditions. Other projects proposed include lighting level and control improvements, refurbishing existing air handling unit components, and replacing or modifying air filter systems. An amount of \$250,000 requested in FY 1985 will be used for the design of these HVAC modifications. In FY 1986, a sum of \$250,000 is required to begin modifying the building's utility systems. A further sum of \$1.4 million is expected to be sought through FY 1990 to continue this project.

A major component of an energy conservation study for the Cooper-Hewitt Museum is replacing the Carnegie Mansion's deteriorated windows and frames. The Mansion is a landmark site and the new windows will duplicate the existing design. The wood sashes and frames will be replaced and the windows glazed with insulating glass incorporating factory bonded ultra-violet film. An amount of \$300,000 sought for FY 1985 will be used to begin this project. A further amount of \$300,000 is required in FY 1986 to replace all windows on the first and second floors on the north, west and south facades. An additional amount of \$3.485 million is expected to be required through FY 1990 to continue implementing the energy conservation study recommendations.

The Institution is experiencing an increase in demand for office automation in all of its facilities and for access to data base management systems. The number of users of terminals and office automation type equipment is expected to grow at the rate of 100-200 per year. To be used efficiently and effectively, this equipment must be interconnected. Presently, a large number of devices are being used which would benefit from interconnection. These include word and data processing terminals, personal computers and telecommunications equipment. A research computer based system is operating which has over 50 connections and a computer based security and fire protection system is being installed in Washington area facilities. Over the next ten years, additional computer systems and electronic services are going to be needed including sensing systems for energy management; an expanded telephone system; telexes and facsimile devices; cabling for computer terminals, printers and disks; protected electrical supplies for computer and office systems; and video systems for exhibits and education. The cost and management problems associated with separately installing these electronic services in each building, coupled with the requirement that most services link buildings on the Mall, led to coordinated planning efforts among the various offices responsible for each system resulting in a decision to install a common communications pathway system or master raceway system in the Mall area. An amount of \$825,000 is sought in FY 1986 to begin installing a raceway system within and between eight buildings in the Mall area which will accommodate future electronic requirements. It will be a single, multi-purpose conduit system capable of housing wires and cables for all electronic services within and between the Smithsonian Institution, Arts and Industries, Freer Gallery,

Hirshhorn, Air and Space, American History and American Art/Portrait Gallery Buildings. The funds in this request will be used for the first construction phase which consists of interconnecting the Mall buildings using four four-inch conduits encased in concrete. An additional amount of \$10.37 million is expected to be sought through FY 1990 for the second construction phase which will consist of extending the raceway into each building and branching the system through floors, walls and ceilings to work stations, offices or exhibit areas.

For FY 1986, an additional amount of \$130,000 is sought for three utility projects. A sum of \$50,000 is sought to begin energy conservation improvements at the Renwick Gallery Building with the installation of attic insulation. For the Smithsonian Tropical Research Institute (STRI) in Panama, a sum of \$60,000 is needed for an emergency generator on Barro Colorado Island. Currently, the Island does not have a reliable back-up power source which presents a safety hazard to staff and visiting scientists. An amount of \$20,000 also is required for a sewage system at STRI's facility on Galeta Point. Sanitary waste at Galeta is dumped directly into the ocean polluting the reef and presenting a health hazard to the scientists working on the reef. Funds will be used to construct a septic system.

OTHER PROJECTS (\$10,020,000): Projects in this category support the maintenance and development of the Institution's outlying facilities and other projects designed to meet programmatic objectives in the areas of research, collections management and education. For FY 1986, a total of \$10,020,000 is sought for the following projects:

(\$000s)

<u>FACILITY</u>	<u>PROJECT DESCRIPTION</u>	<u>AMOUNT</u>
National Museum of American History	Miscellaneous space modifications	\$ 100
National Museum of Natural History	Libraries space modifications	200
Arts and Industries	Relocation of space/functions	500
Arts and Industries	Space improvements	500
National Air and Space Museum	Dulles master plan	300
National Air and Space Museum	Space modifications	100
Freer Gallery of Art	Basement renovations	2,000
Freer Gallery of Art	Courtyard renovation and expansion	5,000
Suitland Facility	Master plan	130
Suitland Facility	Building 17 modifications	400
Hirshhorn Museum and Sculpture Garden	Master plan	100
Smithsonian Tropical Research Institute	Master plan	130
Whipple Observatory	Master plan	60
Whipple Observatory	Communication Link	200
Miscellaneous	Advanced planning and Design	300
		<u>\$10,020</u>

-- Suitland Facility - (\$530,000)

For the National Museum of American History, an amount of \$400,000 is needed in FY 1986 for the design and renovation of collection storage Building 17. Improvements will include roof repairs; removal and replacement of electrical wiring and fixtures; new walls and roof insulation; interior painting; and removal and upgrading of space heaters. This building will contain articles from the collection which do not require museum quality environmental conditions. These improvements are an essential element of the Museum's collection management/inventory program in that they will provide a safe and secure area for a portion of the collection.

The Suitland Facility has grown over the years. It is a collection of prefabricated (Butler) buildings which house storage and conservation functions of the National Museum

of American History, the National Museum of Natural History/Museum of Man and the National Air and Space Museum. Increasing utility needs, new space requirements and problems with surface drainage indicate the need for a plan for growth. An amount of \$200,000 requested in FY 1985 will be used to begin development of a master plan which will include surveys of existing conditions, projected program requirements for the Facility, the impact of the Museum Support Center, and long-range development of the entire 100 acre site. In FY 1986, a sum of \$130,000 is needed to continue the development of the master plan. An additional amount of \$200,000 is expected to be sought in FY 1987 to complete this project.

-- National Air and Space Museum - (\$400,000)

The National Air and Space Museum building was designed with the concept that storage of aircraft and other objects would be achieved at a remote location. The existing museum facilities both on The Mall and at the Suitland Facility are limited in size and do not have direct access to an airport. The Institution has been offered Federal land at the Dulles Airport by the Federal Aviation Administration at a site to be determined which will accommodate the Museum's air transportation requirements, and the large hangar-type buildings needed for preservation, storage and exhibition purposes. Funds of \$135,000 requested in FY 1985 will be used to begin development of a capability study, site selection and master plan for the Dulles site. Authorization for detailed planning and construction is expected in the spring of 1985 as part of the science facilities legislation. A sum of \$300,000 is required in FY 1986 to complete this project.

An amount of \$100,000 also is requested in FY 1986 to design and construct space improvements at the Air and Space Building. Over the past eight years, the Museum has experienced growth in its research programs as well as curatorial, exhibits and educational activities. Plans call for reconfiguring areas on the third floor to create functional and efficient office areas.

-- Arts and Industries - (\$1,000,000)

At the Arts and Industries Building, a major facade and roof renovation has been under way since 1982. An amount of \$500,000 is sought in FY 1986 for the preparation of work areas outside of the Arts and Industries Building and all work required due to relocating functions and activities affected by the roof and facade work. Major activities expected to be relocated include the computer center and the Magazine offices. An additional amount of \$500,000 is expected to be sought in FY 1987 for this program.

A comprehensive space study of the Arts and Industries Building was begun in 1984. The study will evaluate existing space use and investigate future needs. In addition to recommending space improvements, the study will focus on activities located in the Mall area that could be included in the Building. An amount of \$500,000 is requested in FY 1986 to begin construction of permanent building alterations based on the study findings. An additional amount of \$2.0 million is expected to be requested through FY 1990 to continue this project.

-- Freer Gallery of Art - (\$7,000,000)

With the completion of the Quadrangle, the Freer administration, library, registration, curators, cabinet shop, and photographic laboratory will be relocated from the Freer basement to the Sackler Gallery. After relocating these activities to the Quadrangle, renovation of the Freer basement is planned to create modern museum facilities for conservation, collection storage and exhibition use. Current plans call for the basement's west end to house the conservation facilities and the east end would be exhibition areas. These galleries would be located at the point where visitors from the

Sackler Gallery would first enter the Freer Gallery through the connecting tunnel. In FY 1986, an amount of \$2.0 million is sought for the design and renovation of these basement areas.

The tunnel connection from the Sackler Gallery to the Freer Gallery, funded within the Quadrangle budget, requires excavating approximately one-third of the area beneath the existing Freer courtyard. An amount of \$5.0 million is requested for the excavation and construction of the remaining two-thirds of the area. Development of this area two levels below grade would provide approximately 11,000 square feet of additional collection storage space. Plans call for construction of a vault and storage areas on two levels for the following collections: oriental paintings, screens, scrolls, prints, drawings and manuscripts; ceramics and glass; American paintings, prints and drawings, textiles and bronze, jade and stone sculpture; and wood sculpture, furniture and lacquer. Fire protection and security systems will be installed in each area and HVAC systems will meet the particular environmental conditions required by each collection area. Equipment also will be provided to meet the needs of each individual collection.

-- National Museum of American History - Space Modifications - (\$100,000)

Many of the activities relocated to the Museum Support Center formerly occupied space in the basement of the American History Building. Space reconfigurations and modifications need to be made to the basement to meet the requirements of other activities moving into these vacated areas. Improvements also are required for activities which will remain in the basement but are housed in inadequate spaces. An amount of \$100,000 is sought in FY 1986 to initiate these modifications. A sum of \$400,000 is expected to be sought through FY 1990 to continue this project.

-- Smithsonian Tropical Research Institute - Master Plan - (\$130,000)

For the Smithsonian Tropical Research Institute, an amount of \$130,000 is needed in FY 1986 to complete the development of a master plan. This project was initiated with funds of \$75,000 appropriated in FY 1981 and FY 1982. A sum of \$120,000 requested in FY 1985 will be used to continue development of this plan. When completed, it will establish program requirements, determine facilities needs and provide information that will assist in future facilities development.

-- Hirshhorn Museum and Sculpture Garden - Master Plan - (\$100,000)

The Museum's collection has doubled in size as a result of the Hirshhorn bequest. Although additional space is needed to accommodate these works, a shortage of space already exists for many of the Museum's activities. Functional areas which require additional or modified space include exhibits, storage, laboratories, training, rest rooms, and an auditorium to improve access. An amount of \$100,000 is sought in FY 1986 for a space use master plan to assist the Museum in making better use of existing space and in developing new space within the boundaries of the Museum site. An additional amount of \$125,000 is expected to be sought in FY 1987 to complete this project.

-- Smithsonian Astrophysical Observatory, Whipple Observatory - (\$260,000)

For FY 1986, an amount of \$60,000 is sought to complete a base camp master plan initiated with funds of \$40,000 appropriated in FY 1984. The existing base camp, a leased former county school, is functionally obsolete and overcrowded. The new base camp will provide efficient administrative and support facilities for the scientific operations located on Mt. Hopkins. The master plan will provide documentation of existing conditions; determination of future space and facility requirements; a site selection study; a plan to assist in the development of base camp facilities; a cost analysis; and an environmental statement.

An amount of \$100,000 requested in FY 1985 will be used to begin construction of a communication system for the Whipple Observatory which will consist of: two microwave links connecting Amado, Arizona, to the Mt. Hopkins summit and the summit to Tucson, Arizona; and private phone systems in Amado, on the mountain and in Tucson. Due to the geographical location of the Observatory, improved communications are critical to its efficient operation. Changes in astronomical data collection techniques, travel costs and government deregulation of the communication industry necessitated review of the Observatory's present communication system. As a result, it has been determined that a new communication system will be more cost effective and enhance the use of the telescopes. The Observatory has pioneered a system of remote observing where data are taken by a resident technician, using computers, for the astronomers. This system is viable scientifically only so long as the astronomers can spot-check the data frequently as soon as it is recorded by computers. The slow rate at which the Observatory now can transmit spot-check data over the existing phone lines is a major problem. The proposed system will increase the rate of transmission by a factor of 100 and will make remote observing more effective. For the astronomers in Tucson, the final data will be available immediately for analysis. The new communication link will interconnect the Observatory's computers which will increase operation efficiency, reduce travel costs and time, and allow for long distance trouble-shooting of equipment problems. An additional amount of \$200,000 is required in FY 1986 to continue construction of the communication system. A sum of \$75,000 is expected to be sought in FY 1987 to complete this project.

-- Smithsonian Institution Libraries - Space Modifications - (\$200,000)

With funds of \$200,000 appropriated in FY 1980, the first renovation phase was completed for space modifications of the Smithsonian Institution Libraries located in the Natural History Building. Reader services areas are being renovated with funds of \$165,000 appropriated in FY 1984. Funds of \$230,000 requested in FY 1985 will be used to modify the central library process areas including central reference, binding, gifts and exchange, and shipping and receiving. The renovation of the Natural History library branch also will begin. An amount of \$200,000 is sought in FY 1986 to continue these space modifications. This work will include completing the renovation of the Natural History library branch including the purchase and installation of a compact library shelving system, and space modifications for the administrative, cataloging and program office areas in the northeast section of the library. An additional amount of \$215,000 is expected to be sought in FY 1987 to complete this project.

-- Advanced Planning and Design Funds - (\$300,000)

For FY 1986, an amount of \$300,000 is requested for both advanced planning and advanced design of projects in all sub-accounts within the Restoration and Renovation of Buildings (R&R) account. For the majority of the R&R projects, particularly projects which are not phased and require only one year funding, the project request includes funds for planning, design and construction. The planning and design stages require approximately ten percent of the project's funds, but may take from one to 12 months to complete depending upon the project's complexity. Construction costs escalate at a rate of one-half percent per month, so that six percent of a project's construction funds could be lost in one year. Advanced planning and design funding will enable the Institution to develop better cost estimates and to contract for construction as soon as the R&R Appropriation is received. Funds of \$200,000 requested in FY 1985 will be used for these purposes. An additional amount of \$1.55 million is expected to be sought through FY 1990 to continue this program.

RESTORATION AND RENOVATION OF BUILDINGS

PLANNED PROGRAM

FY 1985 - FY 1990

	FISCAL YEARS						Total FY 1986-90
	1985	1986	1987	1988	1989	1990	
(Dollars in thousands)							
<u>GENERAL REPAIRS AND IMPROVEMENTS</u>	545	545	2,425	900	1,660	610	6,140
<u>FACADE, ROOF AND TERRACE REPAIRS</u>							
American Art/Portrait Gallery (AA/PG)	150	75					75
-repair stone facade							
Arts and Industries Building (A&I)	2,500	1,500	250				1,750
-roof and exterior renovation							
Freer Gallery of Art							
-skylight repairs and roof replacement		600					600
Hirshhorn Museum (HMSG) - resurface plaza		1,500	1,500				3,000
Museum of American History (MAH)							
-north and south entrance door replacement		300					300
-remove ramp and canopy/waterproof terrace				925		1,000	1,925
-roof replacement	710						
-planning/design fountain renovation				175			175
Museum of Natural History/Museum of Man (MNH/MMM)							
-caulk and point facade	250	300					300
-roof replacement/design and construction			200	1,000	1,000	1,000	3,200
National Air and Space Museum (NASM)							
-plaza replacement			300	4,500			4,800
-roof repairs					300	300	600
-facade repairs			100	200	200	200	700
Renwick Gallery - facade renovation							
-roof repairs	500				50		50
Smithsonian Environmental Research Center (SERC)							
-roof repairs	90						
Smithsonian Institution Building (SIB)							
-caulk and point facade		50	500				550
-replacement of stones in facade							
-replace windows	50	50	260	300	300	300	1,210
Anacostia Neighborhood Museum (ANM)							
-roof replacement	200						
All other projects in this category			60		50		110
Subtotal, Facade, roof and terrace repairs	4,450	4,375	3,170	6,000	3,000	2,800	19,345

RESTORATION AND RENOVATION OF BUILDINGS
PLANNED PROGRAM
FY 1985 - FY 1990

	<u>FISCAL YEARS</u>					<u>Total</u> <u>FY 1986-90</u>
	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	
<u>FIRE DETECTION AND SUPPRESSION SYSTEMS</u>						
A&I - sprinklers and smoke detection	75	100	75	75	75	400
AA/PG - sprinkler systems	180	120	200	130		450
- installation of public address system			150			150
HNSG - sprinkler systems			105			105
MAH - fire protection master plan	200	800	500	500	500	2,800
- upgrade public address system	100					
MNH/MOM - fire protection master plan	500	500	500	400	400	2,200
NASM - fire protection and suppression system	150	150	100	100	100	550
SIB - fire detection and suppression system		150	200	200	200	950
Renwick Gallery - Install public address system				100		100
Tropical Research Institute (TRUI)						
- BCI fire protection			75			75
Suitland Facility (SHF) - fire protection collection storage buildings	160	150	250	100	100	600
All other projects in this category	100				25	25
Subtotal, Fire detection and suppression systems	<u>1,465</u>	<u>1,970</u>	<u>2,155</u>	<u>1,505</u>	<u>1,500</u>	<u>1,275</u>
<u>ACCESS FOR THE DISABLED, SAFETY AND SECURITY AND CORRECTION OF HAZARDOUS CONDITIONS</u>						
AA/PG - upgrade exterior security lighting	50					50
- dust abatement program/shops		50				50
- tile replacement/great hall			125	35	35	260
Access for the disabled - various buildings			120	200	255	700
MNH/MOM - north and south entrance modifications	200	200	280			480
- replace tile floors in West Court	85					85
- new interior handrails			150			150
- dome safety ladders and platforms		35				35
NASM - emergency telephone and lighting system			260			260
- replace entry door grates			125			125
Asbestos removal/containment	400	500	500	500	500	2,500
Ma11 security lighting		200	200	200	200	800
Proprietary security system	400					400
SHF - Bldg. #10 addition, chemical cleaning					200	200
SIB - south tower egress						
- conversion of elevator #5			170			170
Emergency power study			150			150
All other projects in this category	80	50	185	120	245	600
Subtotal, Access, safety and security	<u>1,215</u>	<u>1,110</u>	<u>2,415</u>	<u>1,455</u>	<u>1,435</u>	<u>890</u>
		<u>1,110</u>	<u>2,415</u>	<u>1,455</u>	<u>1,435</u>	<u>7,305</u>

RESTORATION AND RENOVATION OF BUILDINGS
PLANNED PROGRAM
FY 1985 - FY 1990

	<u>FISCAL YEARS</u>					<u>Total</u> FY 1986-90	
	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>		<u>1990</u>
<u>UTILITY SYSTEMS REPAIRS AND IMPROVEMENTS</u>							
A&I - HVAC renovation/energy conservation /1		1,600	1,000	2,800	3,500	3,000	11,900
- plumbing repairs	75						
- tunnel renovation	150						
AA/PG - HVAC renovation				1,000	4,500	400	5,900
FM/SG - energy study and improvements		600		400			1,000
MAH - HVAC renovation/energy conservation	1,800	1,500	1,800	1,000	1,000	1,000	6,300
- upgrade simplex system		200					200
MNH/MMM - HVAC renovation/energy conservation		2,000	2,000	4,500	6,200	7,200	21,900
- tunnel renovation		50	50	50	50	50	200
- sewage line relocation, West Court		150					150
NASM - HVAC renovation/energy conservation	250	250	500	300	300	300	1,650
- replace reheat coils	50	150	50	50			200
Renwick Gallery - energy study/implementation		50	250	1,000	1,000	1,000	3,300
- install public address system				50			50
SIB - new lighting/great hall and lounge					750		750
- electrical renovation	60						
- utility system study/implementation			40	100			140
SERC - utility system improvements			30	30	30	30	120
SHF - HVAC upgrade/buildings 22 and 23					100		100
SIRI - upgrading of utility and sewer systems		80	185				265
Cooper-Hewitt - energy study implementation	300	300	1,085	600	800	1,000	3,785
Mall master raceway system		825	1,370	3,000	3,000	3,000	11,195
Whipple Observatory (FLWO) - communication network	100						
- summit power line			50				50
All other projects in this category					135		135
Subtotal, Utility systems repairs and improvements	2,785	6,605	9,460	14,830	20,665	17,730	69,290

/1 Heating, ventilating and air conditioning (HVAC)

RESTORATION AND RENOVATION OF BUILDINGS
PLANNED PROGRAM

FY 1985 - FY 1990

(Dollars in thousands)	1985	1986	FISCAL YEARS			Total FY 1986-90
			1987	1988	1989	
OTHER PROJECTS						
AA/PC - building renovations		500	2,000	1,000	1,000	4,500
MNH - space modifications		500	500	500	500	2,000
AAI - space improvements		500	500	500	500	2,500
- relocation space/functions (roof related)		500				1,000
ANM - reconstruct lab expansion	400					
- master plan			100	250		350
Cooper-Hewitt - attic space renovation		25	250			275
Freer Gallery of Art - basement renovation		2,000				2,000
- courtyard renovation		5,000				5,000
INSG - master plan		100	125			225
MAH - Mezzanine above first floor		100	100	100	100	320
- miscellaneous space modifications						500
- relocate security office	125					
- relocation of space/functions (HVAC)			500			500
- object processing lab improvements		15				15
- conservation analytical lab improvement		300				300
Renwick Gallery - space study		40				40
SERC - calf barn modifications		30				30
- master plan	185		300			300
SI Libraries modifications (MNH/MM)	230	200	215			415
SIB - master plan, design and implementation			50	100	100	350
SIRI - master planning, upgrading and additions	1,015	130				1,130
NASM - Dulles master plan	135	300				300
- space modifications		100				100
SIF - MAH buildings	500	400	750	250		1,650
- OPlantS support building					70	70
- master plan	200	130	200			330
- exhibits storage building (NASM)		60	670			670
FLMO - base camp master plan						60
- MMT support building and aluminumizing shop /2	260					
- standby generator building		100				100
- design of administration building	40					
- ridge dormitory design		40				40
- communication network		200	75			275
Advanced Planning and Design	200	300	350	400	400	1,850
Contingency Space Modifications			500	500	500	2,000
Greenhouse/Nursery master plan & construction		150			4,000	4,150
Day Care Center		450				450
Subtotal, Other projects	3,290	10,020	7,305	4,700	3,600	32,795
GRAND TOTAL - Restoration and Renovation of Buildings	13,750	24,625	26,930	29,390	31,860	143,280

/2 Multiple Mirror Telescope (MMT)

SMITHSONIAN INSTITUTION LIBRARIES



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