SMITHSONIAN INSTITUTION

MUSEUM PROGRAMS AND RELATED RESEARCH (SPECIAL FOREIGN CURRENCY PROGRAM)

Submitted as a supplement to the FY 1985 budget

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SMITHSONIAN INSTITUTION MUSEUM PROGRAMS AND RELATED RESEARCH (SPECIAL FOREIGN CURRENCY PROGRAM)

PROGRAM PURPOSES AND LIST OF GRANTS

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PROGRAM PURPOSES AND LIST OF GRANTS

INTRODUCTION

The Smithsonian Institution's Special Foreign Currency Program makes grants in United States-owned foreign currencies to United States institutions, including the Smithsonian itself, to conduct research projects in the so-called "excess" foreign currency countries. In FY 1983, the "excess" foreign currency countries were Burma, Guinea, India, and Pakistan. The Smithsonian program supports research in Archeology and Related Disciplines, Systematic and Environmental Biology, Astrophysics and Earth Sciences, and Museum Programs.

The Smithsonian Foreign Currency Program awards grants when applicants have fulfilled three requirements. These are: 1) the favorable recommendation by a national advisory council of qualified scholars; 2) the concurrence of the appropriate American embassy and host government overseas; and 3) the completion of appropriate cooperative arrangements with host country institutions.

This supplement to the Institution's FY 1985 appropriation request describes: 1) the Smithsonian Foreign Currency Program within the context of the basic Smithsonian purpose; 2) some of the program's achievements; 3) its goals for FY 1985, and 4) projects for which obligations were incurred during FY 1983.

THE GLOBAL NATURE OF THE SMITHSONIAN'S CHARTER

The purpose of the Smithsonian Institution is "the increase and diffusion of knowledge." This quotation from the will of its founder, James Smithson, was made part of the Institution's enabling legislation enacted by the Congress in 1846, chartering the Institution and leading to the eventual designation of the Institution as the custodian of the National Collections.

The Smithsonian's first Secretary, Joseph Henry, implemented the charter through support of basic research and publication not only in Washington but through a global network of correspondence devoted to these same ends. At the same time, the Institution began to acquire substantial collections of biological and geological specimens and of archeological and ethnographic materials, derived both from its own research and from U.S. Government programs. The Institution continues to conduct research and education programs and to improve its collections. Today the Institution is acknowledged to be a major national resource for the study of natural and cultural history and to be without equal anywhere on earth.



THE FY 1985 APPROPRIATION

For FY 1985, the Smithsonian requests an appropriation of \$9,000,000 equivalent in foreign currencies which have been determined by the Treasury Department to be in excess of the normal needs of the United States. 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. Of the total requested, \$4,000,000 will be available for continuation of the grants program. The appropriation request includes \$4,000,000 equivalent in Indian rupees for the forth installment to the forward-funded reserve in support of future programs of the American Institute of Indian Studies. The request also includes \$1,000,000 equivalent in Pakistani rupees for the third of four increments of a U.S. contribution for the restoration and preservation of Moenjodaro in Pakistan.

Special Foreign Currency Program Appropriations and the U.S. Taxpayer

An appropriation for this program does not add to the tax burden of Americans because the money used for foreign currency grants comes from U.S. holdings of foreign currencies abroad in existing accounts that were established in connection with the "Food for Peace" (P.L. 480) program. These accounts were generated largely through sales of surplus U.S. agricultural commodities abroad in exchange for local currencies. In cases where these are greatly in excess of the projected normal U.S. needs, the Treasury Department designates them "excess foreign currencies." They then become available through the Special Foreign Currency Program appropriation process for U.S. uses like scientific research.

Erosion of these accounts by inflation is in many countries dramati-cally reducing their value to the United States. The Indian rupee has lost, for example, more than half of its value since 1970. As a consequence, when a worthy use of these excess currencies can be identified through programs like the Smithsonian Foreign Currency Program, the U.S. can effectively employ at least some of these currencies before inflation effectively eliminates their usefulness.

PROGRAM OF GRANTS FOR RESEARCH

The purpose of the Smithsonian Foreign Currency Program is, like that of the Institution itself, "the increase and diffusion of knowledge." The Smithsonian Foreign Currency Program supports this purpose by making 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. An appropriation of \$4,000,000 equivalent in excess foreign currencies is sought for these grants.



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. The Smithsonian program 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.

The Smithsonian program strengthens the research and training activities of collaborating institutions abroad, for most projects directly involve host country institutions and scholars. Enduring professional ties which result from joint efforts and scholarly exchange contribute to the strongest form of United States cultural relations with other nations. 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, of the management and protection of scarce resources, and the cultural setting within which social changes take place.

In FY 1983, grants supported the following projects of special interest:

A geological team tested on the ground in Egypt radar images of archeological sites taken from the space shuttle Columbia. The images revealed important unknown features several feet below the surface of the desert.

Ancient pollen samples taken at sites in Pakistan are helping to date some of the oldest paleolithic material found to date on the Indian subcontinent.

An architectural survey of the Hindu imperial capitol Vijayanagara is establishing the organizational patterns and principles embodied in one of the greatest of medieval urban centers.

Refugees now resident in India are being interviewed to document the final years of Tibetan history 1933-1950.



Further, with emphasis on information exchange through small workshops, symposia and field conferences, the Smithsonian is encouraging international research in specialized areas. In FY 1983, for example, U.S. scholars received support for participation in exchanges on the subjects of social class structure, Pakistani archeology, elephant management, 20th century literature and cosmic ray physics.

The Importance of Multi-Year Grants

Beginning in FY 1979 the Smithsonian Foreign Currency Program began a policy of multi-year 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 as well as of facilities. Multi-year 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 multi-year grants to protect successful projects from sudden termination when excess currency accounts were abruptly exhausted. This happened in Poland and Tunisia in 1976 and in Egypt in 1981. With multi-year funding over a three-year period, 10 projects in Egypt were funded to reasonable conclusions and 3 continuing projects gained sufficient time to seek other funding sources.

India is currently projected for removal from the excess currency list in 1986. The Smithsonian hopes to provide stabilizing funding before that time through multi-year 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 totalled more than 1,350 at the end of FY 1983.

Collections of original biological specimens and the archeological and ethnographic materials are acquired in the course of field research. They 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 has been added to the research resources of the excess currency countries.



The benefits of the program have extended to a far larger 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 500 AIIS fellows over the 16-year period from FY 1968 through FY 1983. The fellows were drawn from 70 United States institutions in 23 states. Program grants have also supported more than 80 ARCE projects over the 18-year period from FY 1966 through FY 1983, and since FY 1977, 70 ARCE fellows have 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. Subcommission on Education and Culture has sent 65 scholars from U.S. 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.

Whether funded originally on a multi-year or on a one-year basis, projects lasting more than one year are subject to an annual review of scientific progress by the advisory councils before another year of funding is approved. In addition, Smithsonian staff scientists and program advisory council members visit projects in the field when firsthand scientific reports are considered necessary. Smithsonian policy requires that grantees publish scientific results and that scientific collections be readily accessible to the scholarly community.

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.



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 researchers 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 scientists 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 other 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 his salary. Program awards cover only field research costs in the excess currency country and travel to that country.

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

Founded in 1961 by a consortium of 15 United States universities and colleges, the American Institute of Indian Studies' purpose is to promote American scholarship at the pre- and postdoctoral level on India in all recognized fields of the humanities and the social and natural sciences. Funding for U.S. administration is raised through dues paid by member institutions and from foundation grants from several sources. As of 1983 the number of consortium members has grown to 39 with about 100 fellows in India at any given time, in a variety of programs. Funding for research and local administration in India is primarily through the Smithsonian, with lesser amounts being contributed by the Department of Education (language teaching programs only), National Science Foundation (fellowships in specific disciplines), International Communications Agency (fellowships), and the Ford Foundation.



The Smithsonian and the AIIS share common purposes: education and scholarship, global intellectual understanding and the promotion of research. Research at the Institute takes several forms: individual research in any recognized field; joint projects such as the ones resulting in the publication of the Encyclopedia of India's Philosophies; long-term projects, one of which has been the continuing project at the Center of Art and Archeology at Benares which will make available an archive of photographs, largely of Indian temples and monuments, for students and the scholarly public; and language teaching programs, now given in six of the 14 major Indian languages.

Through its competitive grants program, the Smithsonian has provided annual funding to the American Institute of Indian Studies since 1967 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.

The amount of Indian currency available to the U.S. government is a rapidly decreasing finite fund. With inflation rates in India at a high level, it has disappeared more quickly than had been anticipated in the past. The Office of Management and Budget is currently suggesting one year remaining of excess status. Since the end of "excess" currency status historically has happened suddenly, the Institution has been building since 1980 a reserve of funds for the AIIS to avoid a situation similar to the one which developed in Egypt. (In late 1978, funds for new American research in Egypt dried up suddenly, placing in doubt the future of American archeology and cultural history studies there and jeopardizing the continued existence of the very successful Cairo Center of the American Research Center in Egypt.)

By building a substantial foreign currency reserve fund, the Smithsonian hopes to assure that AIIS will be financially secure on a long-term basis, and to encourage other such centers to make the effort necessary to develop funding from other sources for the period beyond that of support by the Smithsonian. Toward this end, the Smithsonian has received appropriations and obligated the amount of \$500,000 in Indian rupees, in FY 1980; \$750,000 in FY 1981 and \$2 million in FY 1984. In FY 1985, \$4 million is requested to bring the fund to \$7,250,000. This would provide approximately 5 years of core funding, although an optimum reserve of \$10,000,000 would guarantee 5 years of activity at the present level. The reserve 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. A system of annual scholarly and financial review will be developed for administration of the reserve fund similar to that now used for the grants program.



Long-term support for the AIIS is feasible and highly desirable. As a result of its long relationship with the AIIS, the Smithsonian has confidence that the mutually acceptable and beneficial working relationship can be continued. The AIIS is a very viable organization, standing in high regard with the Indian Government and the scholarly community. FY 1985 is the last opportunity to provide funds for this vital activity.

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 anticipates 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 1960's, 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 yet been seriously damaged, 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 underway, with a ground water control scheme now nearing completion and preparations of the river control scheme advancing rapidly. The consolidation and treatment of the remaining structures is continuing and landscaping work has started. 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 \$3.3 million,



mainly from governmental contributions of member states and the Government of Pakistan has made an initial commitment of \$2,000,000 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 \$13,000,000, 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. The amount of \$1,040,000 will be transferred in FY 1984. The Smithsonian is seeking a third increment of funds for this project in FY 1985, a sum of \$1,000,000 equivalent in Pakistani rupees, to increase the United States contribution. One more increment will be sought in FY 1986 to complete the contribution.

The Smithsonian is conveying this gift because of its traditional interest in archeology and cultural history. It was the agent for conveying the final United States' contribution to the International Campaign to Save the Nubian Monuments—the successful effort to move the Temples of Philae. The Smithsonian Special Foreign Currency Program has supported the significant archeological investigations of Moenjodaro and other Harappan sites which have added greatly to knowledge of this civilization.

As with the Nubian monuments of Egypt, preserving the remains of Moenjodaro will be of great benefit to generations of future scholars. The network of scholarly relations between American institutions and their counterparts in Pakistan will be developed and strengthened. Indeed, the maintenance of cultural ties between nations can provide a link which endures through the shifting of other relations and insures continued contact between nations. Finally, support by the United States for the preservation of this unique historic site is in the spirit of the UNESCO convention concerning the protection of the world culture and natural heritage (the World Heritage Convention) which was ratified by the United States in 1973.



SMITHSONIAN INSTITUTION MUSEUM PROGRAMS AND RELATED RESEARCH (SPECIAL FOREIGN CURRENCY PROGRAM)

SUMMARY OF OBLIGATIONS, ACTUAL AND ESTIMATED FY 1983, FY 1984, and FY 1985

Obligations of Funds by Program Area (dollar equivalents)

A charles and Dilated	FY 1983 <u>Actual</u>	FY 1984 <u>Estimate</u>	FY 1985 <u>Estimate</u>
Archeology and Related Disciplines	\$1,479,000	\$5,748,000	<u>1/2</u> / \$7,540,000 <u>1/2</u> /
Systematic and Environmental Biology	412,000	876,000	850,000
Astrophysics and Earth Sciences	91,000	85,000	195,000
Museum Programs	187,000	350,000	360,000
Grant Administration 3/	110,000	110,000	105,000
Science Information Program (Translations)	62,000	150,000	150,000
Total	\$2,341,000	\$7,319,000	\$9,200,000
Obligations of Funds by Country (dollar equivalents)			
	FY 1983 Actual	FY 1984 Estimate	FY 1985 Estimate
Burma \$	-0-	\$ 15,000	\$ 21,000
Guinea	-0-	-0-	-0-
India	2,050,000	5,845,000 <u>1/3</u> /	/ <u>4</u> / 7,665,000 <u>1/3/4</u> /
Pakistan	291,000	1,459,000 2/	1,514,000 2/

^{1/} Includes obligation for AIIS forward-funded reserve: FY 1984, \$2,000,000; FY 1985, \$4,000,000.

\$2,341,000

Total

\$7,319,000

\$9,200,000

^{2/} Includes obligation for U.S. contribution for Moenjodaro: FY 1984, \$1,040,000; FY 1985, \$1,000,000.

^{3/} Includes transfers to the State Department for "Foreign Affairs Administrative Support."

^{4/} Includes estimates for Science Information Program for translations.



FISCAL YEAR 1983 - ACTUAL OBLIGATIONS

Actual Obligations by Program Area (dollar equivalents)

A calcard and Dalahad	Research Projects 1/	Research / Development 1/	Total
Archeology and Related Disciplines	\$1,443,000	\$36,000	\$1,479,000
Systematic and Environ- mental Biology	369,000	43,000	412,000
Astrophysics and Earth Sciences	79,000	12,000	91,000
Museum Programs	181,000	6,000	187,000
TOTAL FOR RESEARCH	\$2,072,000	\$97,000	\$2,169,000
SFCP Grant Administration	<u>2</u> /		110,000
Science Information Program-Translations			62,000
TOTAL			\$2,341,000

Actual Obligations by Country (dollar equivalents)

	Grants Administration and Agency Transfers	Research <u>Projects</u>	Research Developmen	t Total
Burma	\$ -0-	\$ -0-	\$ -0-	\$ -0-
Guinea	-0-	-0-	-0-	-0-
India	168,000 <u>2</u> /	1,789,000	93,000	2,050,000
Pakistan	4,000 2/	283,000	4,000	291,000
TOTAL	\$172,000	\$2,072,000	97,000	\$2,341,000

^{1/}These projects are described in the Grants List which follows.
2/Includes transfers to the State Department for "Foreign Affairs Administrative Support."



FISCAL YEAR 1984 - ESTIMATED OBLIGATIONS

Estimated Obligations by Program Area (dollar equivalents)

	Research Projects	Research Development	<u>Total</u>	
Archeology and Related Disciplines	\$5,673,000	\$ 75,000	\$5,748,000	
Systematic and Environ- mental Biology	791,000	. 85,000	876,000	
Astrophysics and Earth Sciences	65,000	20,000	85,000	
Museum Programs	335,000	15,000	350,000	
TOTAL FOR RESEARCH	\$6,864,000	\$195,000	\$7,059,000	
SFCP Grant Administration	1/		110,000	
Science Information Program Translations 150,000				
TOTAL			\$7,319,000	

Estimated Obligations by Country (dollar equivalents)

	Grants Administration & Science Information Program	Research Projects	Research Developme	nt <u>Total</u>
Burma	\$ 1,000	\$ 10,000	\$ 4,000	\$ 15,000
Guinea	-0-	-0-	-0-	-0-
India	254,000 <u>1/2</u> /	5,453,000 <u>3</u> /	138,000	5,845,000
Pakistan	5,000	1,401,000 4/	53,000	1,459,000
TOTAL	\$260,000	\$6,864,000	\$195,000	\$7,319,000

^{1/}Includes transfers to the State Department for "Foreign Affairs Administrative Support."

Moenjodaro.

^{2/}Includes estimates for the Science Information Program for translations.

^{3/}Includes \$2,000,000 estimated obligation for AIIS forward-funded reserve. 4/Includes \$1,040,000 estimated obligation for U.S. contribution to



FISCAL YEAR 1985 - ESTIMATED OBLIGATIONS

Estimated Obligations by Program Area (dollar equivalents)

	Research Projects	Research Development	<u>Total</u>	
Archeology and Related Research	\$7,514,000 <u>3/4</u> /	\$26,000	\$7,540,000	
Systematic and Environ- mental Biology	816,000	34,000	850,000	
Astrophysics and Earth Sciences	189,000	6,000	195,000	
Museum Programs	357,000	3,000	360,000	
TOTAL FOR RESEARCH	\$8,876,000 -	\$69,000	\$8,945,000	
SFCP Grants Administrati	105,000			
Science Information Program Translations 150,000				
TOTAL			\$9,200,000	

Estimated Obligations by Country (dollar equivalents)

	Grants Administration & Science Information Program	Research Projects	Research Development	<u>Total</u>
Burma	\$ 1,000	\$ 17,000	\$ 3,000	\$ 21,000
Guinea	-0-	-0-	-0-	-0-
India	248,000 <u>1/2</u> /	7,385,000 <u>3</u> /	32,000	7,665,000
Pakistan	6,000 1/	1,474,000 4/	34,000	1,514,000
TOTAL	\$255,000	\$8,876,000	\$69,000	\$9,200,000

^{1/}Includes transfers to the State Department for "Foreign Affairs Administrative Support."

^{2/}Includes estimates for the Science Information Program for translations.

 $[\]frac{3}{4}$ /Includes \$4,000,000 estimated obligation for AIIS forward-funded reserve. $\frac{4}{4}$ /Includes \$1,000,000 estimated obligation for U.S. contribution to Moenjodaro.



STATUS OF FUNDS (dollar equivalents)

	FY 1983 Actual	FY 1984 Estimated	FY 1985 Estimated
Unobligated Balance Start of Year	+ 135,000	+ 39,000	+ 60,000
Appropriation	+2,000,000	+7,040,000	+9,000,000
Recovery of Prior Years' Obligations	+ 245,000	+ 300,000	+ 200,000
Unobligated Balance, End of Year	- 39,000	- 60,000	- 60,000
TOTAL OBLIGATIONS	2,341,000	7,319,000	9,200,000



SMITHSONIAN INSTITUTION MUSEUM PROGRAMS AND RELATED RESEARCH (SPECIAL FOREIGN CURRENCY PROGRAM) Fiscal Year 1983

List of Grants

ARCHEOLOGY AND RELATED DISCIPLINES

The study of archeology, anthropology, and related fields such as ethnology, are studies of changes in the human condition brought about by the environment and by cultural factors. Societies such as ours that are undergoing rapid change are subject to increasing pressures to accommodate new factors. These societies must look to studies of the history of man as well as to studies of today's condition to find answers to such questions as:

- a) How have societies responded to similar pressures in the past?
- b) What are those elements in our condition that are biological imperatives or are so culturally interdependent that we dare not change them? For example, is the family unit essential to the survival of our civilization?
- c) What are the current options available to today's societies?

The urgency to understand the forces demanding change in human societies has caused scholars to study man and communities, past and present, for a better grasp of the process of social change.

Projects of United States institutions which contribute to understanding these processes and which received support in FY 1983, are listed below.

Obligation

	Number	Institution	Investigator	\$ Eqv.
IND	<u>PIA</u>			
1.	20852300 Amend. 1 & 2	American Institute of Indian Studies Chicago, IL	E. Dimock, Jr.	\$719,561

The American Institute of Indian Studies (AIIS) was founded in 1961 and today has a membership of 37 United States institutions. The AIIS is a unique national resource because it is the principal source of money supporting on an annual basis in the United States, the advancement of knowledge and understanding of India as well as the training in India of area specialists.



Moreover, the AIIS has served the U.S. national interest by sustaining active scholarly collaboration between the U.S. and India during periods of political stress when contacts have been interrupted. Disciplines sponsored by the AIIS are increasing from the original concentration on social sciences and the humanities to include the natural sciences as well. Smithsonian support of the AIIS has totalled more than \$8,664,000 equivalent in Indian rupees over a sixteen-year period.

The AIIS provides administrative support for its fellows and for a major language program from a headquarters in New Delhi and small offices in Bombay, Calcutta, Madras, and Poona.

The principal activity of the AIIS has been the appointment of fellows. The SFCP currently provides most of the funds for this fellowship program. AIIS fellows receiving support during FY 1983 are listed below.

SENIOR RESEARCH FELLOWS

Unaffiliated

Ali Akbar	College of	f Music	Christopher	Ris
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Barnard College	Brian Smith
Darnard College	prian Smith

Columbia university frances fritche	Columbia	University	Frances	Pritchet
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Cooper	Union	Jean	Le	Mee

Harvard University	y Mitchell	Weiss

Ohio State	University	John	Huntington
		Sugan	Huntington

University of Arizona Sharon Weiner Ludwig Adamec

University of California at

Los Angeles Nazir Jairazbhoy

John Povey

University of Canterbury Bruce King

University of Chicago Arnold Arnoff
Joan Erdman

Edwin Gerow Victoria Kennick

Rosalind Solomon

University of Connecticut Subhas Jain

University of Hawaii K.N. Upadhyaya



University of Illinois Girdhari Tikko

University of Iowa Irene Wherritt

University of Michigan Peter Hook

Walter Spink

University of Minnesota Joseph Schwartzberg

University of Pennsylvania George Cardona

Peter Gaeffke Guy Welbon

University of Texas William Roger Louis

University of Washington Karl Potter

University of Wisconsin Usha Nilsson

Wellesley College Holly Reynolds

JUNIOR RESEARCH FELLOWS

Columbia University Kokila Rangachari

New York University Varundra Varadhan

Princeton University David Landes

Rice University Vasumathi Duvvury

University of California

at Berkeley

University of Chicago

June McDaniel
Charles Nuckolls
Vishvajit Pandya

David White

Linda Feldman

University of Illinois Sumita Chakravarty

Richard Lutz

University of Michigan Clair Huntington

University of Pennsylvania Susan Stalker



University of Virginia

Daniel Cozort Christopher Hill

University of Washington

Clark Shores

University of Wisconsin

Cynthia Talbot

	Obligation Number	Institution	Principal <u>Investigator</u>	\$ Eqv.
2.	30616300	American Institute of Indian Studies Chicago, IL	N. Jairazbhoy	\$150,000

The establishment of the Archives and Research Center for Ethnomusicology will provide a center for the documentation of traditional Indian folk music as studied by international scholars.

3.	20852700	American Institute	G. Possehl	\$28,035
	Amend. 1	of Indian Studies		
•	10560600,	Chicago, IL		
	Amend. 5			

The Center for Art and Archeology at Benares, India, is a vital research facility serving scholars of ancient and modern India from all over the world. The Center was established to apply rigorous scholarly standards to the massive job of photographing and indexing the art collections and temples and monuments of India which abound in every region of the subcontinent. The archive of more than 30,000 photographs continues to grow as important projects such as the photographing of collections in the Indian Museum in Calcutta are undertaken.

4.	TX3000272	American Institute	K. Potter	\$3,450
		of Indian Studies		
		Chicago, IL		

The Encyclopedia of Indian Philosophies, summarizing present knowledge about classical systems of Indian philosophy, will provide a useful reference for the general reader, the professional philosopher, the historian of thought and the Indologist.

5.	20852400	Asia Society, NY, T. Tanen	\$8,899
	Amend. 1,	Agent for the American	
	10567500	Panel of the Indo-U.S.	
	Amend 2 7 3	Subcommission on Edu-	
		cation and Culture	



Obligation Principal
Number Institution Investigator \$ Eqv.

The Indo-American Fellowship Program, established in late 1975, was created to widen the circle of scholarly/professional contacts and increase the extent of collaboration between the U.S. and India. Fellowships are granted for research in India, primarily at the postdoctoral or equivalent level with substantial collaboration with Indian colleagues. The fellows who received support in FY 1983 are:

Dartmouth College	M. Naroll
DePaul U.	D. Barnum
College of St. Catherine	M. O'Hara
Ohio State U.	B. Groseclose
U. of Massachusetts	C. Foss
U. of North Alabama	N. Canipe
U. of Pennsylvania	J. Lang
U. of Texas	S. Buckley
U. of Washington	J. Conlon

6. TX300318 U. of California J.D. Clark \$6,010 Berkeley, CA

Survey of prehistoric land-use in the upper Son Valley, Madhya Pradesh, will provide data for comparison with paleo-ecological events in Africa, showing to what extent cultural development in the subcontinent may have paralleled that in tropical Africa where current evidence predicts the development of humankind.

7. TX300195 U. of Pennsylvania H. Cohen \$4,016 Philadelphia, PA

 $extsf{U.S.}$ participation in the University of Delhi conference on 20th century literature.

8. 9037700 U. of Wisconsin J. Elder \$11,819 Madison, WI

Preparation of documentary films on selected aspects of contemporary South Asian civilizations.



	Obligation Number	<u>Institution</u>	Principal Investigator	\$ Eqv.
9.	30866500	U. of Wisconsin Madison, WI	J. Elder	\$92,133

Analysis of the Advaita Vedanta Monastic rituals will include preservation on film of these rapidly changing and disappearing traditions.

10. 30616400 & U. of Pennsylvania F. Frankel \$76,910 TX300752 Philadelphia, PA

U.S. and Indian scholars are collaborating in an effort to document regional patterns of political and economic change in modern India.

11. 20852800 Amend.1 State U. of New York G. Forbes \$2,082 & TX300809 Oswego, NY

The lives of 20th century Indian women of middle class will be examined and analyzed with the using of family photographs.

12. TX300297, U. of New Mexico J. Fritz \$26,582 298 & 181 Albuquerque, NM

Study of Vijayanagara, the Hindu imperial capital, is providing valuable understanding of the organizational patterns and principles embodied in this greatest of medieval Hindu urban centers.

13. 30543400 & Case Western Reserve M. Goldstein \$40,260 U., Cleveland, OH

The final years of Tibetan history - 1933-1950 - will be documented with interviews of the aging refugees now residing in India.

14. 10575700 Western Michigan U. A. Helweg \$389 Kalamazoo, MI

Widespread migration of professional and highly skilled Gujaratis is being studied to determine the little known effect of migration on the <u>sending</u> society.

15. 30725800 & U. of Arizona M. Mahar \$44,460 TX300349

The restudy of an Indian village after a 30-year interval is providing a controlled picture of change in rural India.



Obligation Number	Institution	Principal Investigator	\$ Eqv.
16. 309494	U. of Pennsylvania Philadelphia, PA	M. Meister	\$16,000

Publication of proceedings of University of Pennsylvania symposium, "Discourses on Shiva."

17. 00606800 Herbert H. Lehman J. Mencher \$7,970 Amend. 2 & 3 College, CUNY

Anthropological investigations in three traditional rice-producing regions of India will outline the involvement of women in Indian agriculture.

18. TX300885 Tufts University J. Perry \$4,905 Medford, MA

Interviews with bilingual poets are being used to trace cultural strains in the use of Indo-English in modern Indian poetry.

19. 20190700 U. of Pennsylvania G. Possehl \$45,000 Amend. 1 Philadelphia, PA

The unusual change back to pastoral nomadism from urbanized civilization is being examined in an archeological program in Gujarat.

20. TX 300071,-72 U. of Pennsylvania G. Possehl \$14,934 -73,-74,-75, Philadelphia, PA

U.S. participation in the Workshop on Late Cenozoic Paleoclimatic Changes

21. 3074660 & U. of Chicago L. Rudolph \$28,428 TX300850

Explanations of state formation have been based on interpretations of the history of the west. This study seeks to explain how different social conditions in Europe and India produced relatively stable but contrasting state types, the nation state in Europe and the imperial state of India.

22. TX300273 New York U. R. Schechner \$2,280

The famous Hindu theatrical performance tradition, the Ramlila of Ramnagar, is being documented as a theatrical as well as religious and social phenomenon.



Obligation Number	Institution	Principal Investigator	\$ Eqv.	
23. TX300236	Case Western Reserve U Cleveland, OH	J. Shaffer	\$5,073	

Site surveys and test excavations are being used to locate the beginnings of early iron technology in north India about 5,000 years ago.

24. 309575 U. of Hawaii W. Solheim \$9,000 Honolulu, HI

Publication of proceedings of the Indo-Pacific Prehistory Symposium held in Poona, December 1978.

25. 30932100 U. of Puerto Rico B. Southard- \$7,272 Rio Piedras, PR Choudary

This study is tracing the goals of the women's movement in Bengal between the World Wars and to what extent these were translated into effective legislation.

26. 30640700 Syracuse U. S. Wadley-Derr \$35,548 Syracuse, NY

A restudy of a north Indian village is illustrating how social, cultural and economic changes of the past sixty years have differently affected the lives of men and women of different age groups and socio-economic classes.

27. 20223600 American U. C. White \$666 Amend. 1 Washington, D.C.

The rich Vaishnava literary heritage of India is being recorded and conserved with a major effort to microfilm documents in private and public collections throughout India.

28. TX300821 Duke U. A. Zagarell \$5,610

A regional study will seek to understand the appearance and historical development of southern Indian pastoralism.

PAKISTAN

29. TX300954,-56 U. of Minnesota R. Asher \$16,771 -65,-69,-70,-71 Minneapolis, MN 301010

U.S. participation in the First International Symposium on Kharakorum Culture at Gilgit, Pakistan



Obligation Number	Institution	Principal Investigator	\$ Eqv.
30. TX300235	U. of California Berkeley, CA	G. Dales	\$3,561

Research into the paleo-environmental and archeological history of a 4000 B.C. coastal site in Pakistan illustrating that Balakot was indeed a seaport (now several miles inland) and that trade was carried on with Mesopotamia and the Persian Gulf. The boring of stratigraphic cores is determining the physical environmental situation in relation to the ancient coastline and may provide historical information directly bearing on present-day development schemes for harbors and coastal facilities.

31. TX300319	U. of California	G. Dales &	\$6,058
	Berkeley, CA	M. Kenoyer	

Examination of shell artifacts from the Indus site of Moenjodaro is uncovering new data on the manufacturing industry in this ancient civilization.

32. 30587000 &	Case Western Reserve	W. Fairservis &	\$54,409
TX30023601	U., Cleveland, OH	J. Shaffer	

Excavation at the Harappan site of Allahdino are providing a new source of material in the ongoing attempt to decipher the Harappan script.

33. TX300274	Social Science	D. Szanton	\$1,134
	Research Council		
	New York, NY		

Travel of Pakistani participant in the Mount Kisco conference on "Islam, Ethnicity and the State of Afghanistan, Iran and Pakistan," November 1982.



SYSTEMATIC AND ENVIRONMENTAL BIOLOGY

For much of our history as a nation, we have regarded technology as the key to the betterment of the human condition. It is a concept that once stood virtually unquestioned and which has profoundly influenced changing cultural patterns around the world. Today, however, it is becoming increasingly obvious that technology exacts its price, one that is multiplied by new levels of population. Biological scientists who once concerned themselves with laying the brick-work of the edifice of human knowledge now find themselves with a new responsibility. We now know that it is imperative to establish norms for our environmental systems, to monitor changes, and to predict the consequences of social policies that may have an injurious environmental impact. American scientists are again the leaders in international research efforts in these new fields. Through the long-term collaborative relationships between American and foreign institutions and scholars, research conducted under the Smithsonian Foreign Currency Program serves as a foundation for the intense efforts that will be required to solve the problems of biological science that transcend national boundaries.

	Number	Institution	Investigator	\$ Eqv.
IND	<u>IA</u>			
34.	TX300182 & -183	Illinois State U. Normal, IL	J. Armstrong & B. Drummond	\$7,280

The study of Myristica fragrans, the nutmeg of commerce, is yielding significant results on the role of floral biology in angiosperm evolution.

35. TX300225	Smithsonian	E. Ayensu	\$2,688
	Institution		
	Washington, D.C.		

Development of a workshop and research program on endangered plants of economic value in India.

36. TX300695	U. of Massachusetts	K. Bawa	\$5,657
	Boston, MA		

Development of a long range study to determine the conversion rates of indigenous Indian forests into plantation forests, managed forests, preserved forests and vegetation of other types

37. TX300170 &	Brown U.	G. Conroy	\$5,555
– 171	Providence, RI		

Paleontological studies in the Siwaliks of India will fill in the enormous geographical gap between primate discoveries in Pakistan and China.



	Obligation Number	Institution	Principal Investigator	\$ Eqv.
38.	10832900 Amend. 1 & 301999	Southern Illinois U. Carbondale, IL	R. Corruccini	\$62,071

Study of dental occlusal variation in transitional Indian populations is providing new data for understanding epidemiological changes from rural to urban populations.

Studies on the vegetation in the Bharatpur wetland will be used to develop indices and guidelines for predicting the impact that the changes in water regime will have on vegetation development in semitropical, monsoonal freshwater wetlands.

40. TX300270 Iowa State U. C. Davis \$8,453 & -271 Ames, IA

U.S. participation in the Indian Environmental Congress, New Delhi

41. 30543300 Carnegie Museum C. Gans \$39,735 & TX300452 of Natural History Pittsburgh, PA

A baseline collection of reptiles and amphibians is being made in south India before environmental destruction of the forests destroys the large endemic population of these animals.

42. TX300674 Princeton U. J. Gould & \$4,385
Princeton, N.J. W. Towne

Behavioral studies of three species of Indian bees are providing new materials for comparison with the well-known honey bee.

43. TX300905 U. of Michigan W. Hamilton \$2,600 Ann Arbor, MI

Development of a program of research on reproduction in fig wasps.

44. TX300079 Smithsonian J. Heppner \$4,241
Institution
Washington, D.C.

Systematic studies of Indian moths is providing important comparative data between old and New World species.



Obligation Number	Institution	Principal <u>Investigator</u>	\$ Eqv.
45. 30645800	U. of Oregon Eugene, OR	J. Lukacs	\$30,705

Examination of South Asian human skeletal remains of Late Stone Age (10,000 B.C.) to Iron Age (200 A.D.) for patterns of dental disease will provide information regarding the history of population migration into the Indian sub-continent.

46. TX300070 Indiana U. P. Mahlberg \$6,810 Bloomington, IN

Studies of the plant species <u>Euphorbia</u> in India will be used to interpret the evolutionary origin and relationship of Indian species to those in Africa.

47. TX300302 Smithsonian D. Pawson \$3,535
Institution
Washington, D.C.

Studies of echinoderm collections in India is providing comparative data on Old and New World species.

48. TX300732 Pennsylvania State U. D. Pearson \$4,825 University Park, PA

Observational and manipulative tests on Indian tiger beetles is providing material for comparative studies on New World species.

49. TX300950 & Smithsonian S. Ripley & \$11,700 51 Institution B. Beehler Washington, D.C.

An ornithological field survey in Andhra Pradesh, India, examined an area previously studied in the 1930's to assess the faunal changes under the pressure of uncontrolled development.

50. TX300172 Smithsonian M. Robinson \$2,545
Institution
Washington, D.C.

Development of a phenological monitoring program in South India will enhance a similar program being conducted in Panama by providing new comparisons between old and new World tropics.

51. TX300246 Smithsonian C. Wemmer \$2,911
Institution
Washington, D.C.

U.S. participation in the International Workshop on Elephant Management.



PAKISTAN

Obligation Number	Institution	Principal Investigator	\$ Eqv.
52. 30942500	Howard U. Washington, D.C.	S.T. Hussain	\$100,000

Field studies of recently discovered vertebrate fauna from the Miocene lower Siwaliks of Pakistan, includes six families of rodents and two of insectivores some of which are new to South Asian fossil deposits.

53. 30942300 &	Harvard U.	D. Pilbeam	\$101,288
TX300949	Cambridge, MA	•	

In a search for fossils of small and large animals in Pakistan, particularly for primates dating from the time of man's earliest development, a collaborative effort between Harvard Univ. and the Geological Survey of Pakistan is striving toward a better understanding of the evolution of man.

54. TX300546	Southern Methodist U.	A. Woosley &	\$2,039
	Dallas, TX	M. McKean	

Examination of prehistoric and modern pollen samples in Pakistan will provide base data for the reconstruction of the paleo-environment of the Pre-Harappan and Harappan periods.



ASTROPHYSICS AND EARTH SCIENCES

The study of astrophysics and earth sciences is the study of man's available energy and mineral resources. Studies of the stars and their origins reveal much about the origin, composition, behavior and fate of the Earth. The forces governing the stars are the same as those governing the star which is our Sun. The Earth was born of solar minerals, and the Sun remains the source of all energy, fossil or otherwise, available to man today. Uranium, for example, which provides the fuel for atomic power plants, is present in the Sun as well as in the Earth. Coal and oil are fossil remains of plants and animals which once relied on sunshine for life, just as all life does today.

Studies, like those listed below, which received Smithsonian Foreign Currency Program support in FY 1983 are contributing to knowledge essential to meet man's future energy and mineral needs, to understand and predict such natural phenomena as earthquakes, and to foster space age developments. Such projects help host nations, particularly the developing nations, improve their scientific output while providing United States institutions with collaborators, facilities or field research opportunities essential to the conduct of such studies, judged most likely to advance man's knowledge to his available energy and mineral resources.

Obligation <u>Number</u>	Institution	Principal Investigator	\$ Eqv.
INDIA			
55. TX300269	U. of Minnesota Minneapolis, MN	S. Banerjee	\$3,479

Development of a program of paleomagnetic age dating of ancient lake sediments in northern India, which cannot be measured by standard methods because of lack of suitable organized matter.

56. TX300923 &	American Physical	A. Buffington	\$59,965
30715100	Society		
	New York, NY		

U.S. participation in the 18th International Cosmic Ray conference at Bangalore.

57. TX300194	U. of Arizona	T. Gehrels	\$3,077
	Tucson, AZ		

Development of a cooperative program of research in astronomical polarimetry.



Obligation Number	Institution	Principal Investigator	\$ Eqv.
58. TX300936	U. of Maryland College Park, MD	M. Kundu	\$3,730

U.S. participation in the Second Indo-U.S. Workshop on Solar Terrestrial Physics.

59. TX300328 U. of Maryland M. Kundu \$3,520 College Park, MD

Coordinated space and ground-based observations have been designed for an integrated effort for understanding the physics of solar flares and other explosive events in the universe.

60. TX300312,-343, Smithsonian S. Murray \$10,050 & 345 Institution Washington, D.C.

U.S. participation in the Conference on Energetic Extragalactic Sources.

61. TX300826 U. of Chicago D. Schramm \$4,241 Chicago, IL

Collaborative theoretical research in the field of astrophysics has produced a model of an early universe and associated cosmology.

62. Amend. 6 Smithsonian T. Weeks \$2,773
TX200776,-787, Institution
-968 Washington, D.C.

Travel of participants in the Conference on High Energy Gamma Rays.



MUSEUM PROGRAMS

The scope of museum activities is growing and changing. The traditional museum role has been the care and preservation of scientific specimens and cultural objects for study and reevaluation as new techniques and data become available. Today museums also have a growing role belonging traditionally to universities. They also play a growing role in communication between present-day cultures, drawing together peoples of different lands when language barriers prevent exchange of basic information. Museums are now making more use of their skilled personnel and their collections for popular education. Increasingly, museums are broadening the interpretation of museum collections to include living cultural traditions such as crafts and the performing arts.

Projects like those listed below, which received Smithsonian Foreign Currency Program support in FY 1983, support both the traditional and the newer roles of museums. These projects respond to those needs of the museum profession not met within the natural sciences and cultural history areas of the Smithsonian Foreign Currency Program.

	Obligation Number	Institution	Principal Investigator	\$ Eqv.
IND	<u>LA</u>			
63.	20854300 Amend.1,	The Asia Society (As Agent for Indo- U.S. Subcommission on Education & Culture) New York. NY	T. Tanen	\$91,126

Continuation of museum-related programs and exchanges under the Indo-U.S. Subcommission on Education and Culture.

64. TX300953	Smithsonian	W. Boyne	\$4,000
	Institution		
-	Washington, D.C.		

Two students, essay contest winners from India, spent two weeks at the National Air and Space Museum preparing presentations on man and space.

65. TX300296	Smithsonian	L. Herman	\$2,871
	Institution		
	Washington, D.C.		

Development of an Indian crafts exhibition.



	Obligation Number	Institution	Principal Investigator	\$ Eqv.
66.	TX300334	Smithsonian Institution Washington, D.C.	J. Majewski	\$1,646

Consultation with specialists at the National Museum of Natural History, New Delhi, on the development of a program for handicapped museum visitors.

67. TX300433 Smithsonian E. Miles \$2,831 Institution Washington, D.C.

Consultation on the design of an exhibition celebrating the 100-year history of the Bombay Natural History Society.

68. TX300740 Carnegie Museum of T. Parks \$1,780
Natural History
Pittsburgh, PA

Continuation of an ongoing exchange of museum and scientific personnel of the National Museum of Natural History, New Delhi, and the Carnegie Museum of Natural History, Pittsburgh.

69. TX300463 . Smithsonian R. Rinzler \$6,934
Institution
Washington, D.C.

Development of a program of international cultural exchanges of traditional performers and artisians.

70. 30725700 & Carnegie Museum of D. Schlitter \$73,728 TX300077,-78 Natural History H. Genoways Pittsburgh, PA

U.S. participation in a zoological collections management workshop at Calcutta.

PAKISTAN

71. TX300464 Smithsonian R. Rinzler \$1,932
Institution
Washington, D.C.

Development of a program of international cultural exchanges of traditional performers and artisians



SFCP GRANTS ADMINISTRATION

Obligation Number	Institution	Principal Investigator	\$ Eqv.
INDIA			
72. Transfer	Smithsonian Institution Washington, D.C.		\$17,942

Indian rupees were transferred to the State Department for Foreign Affairs Administrative Support, the costs incurred by the State Department in providing administrative support to Foreign Currency Program grantees in the excess currency countries.

73. TX300156	Smithsonian	\$3,090
	Institution	
	Washington, D.C.	

This obligation supported inspection and audit of research projects and liaison with host country governments by Smithsonian staff and advisors.

74. 30942400	Smithsonian	\$85,000
	Institution	
	Washington, D.C.	

This obligation is for the development, conduct, and administration of Smithsonian/SFCP projects in India.

PAKISTAN

75.	Transfer	Smithsonian	\$104
		Institution	
		Washington. D.C.	

Pakistan rupees were transferred to the State Department for Foreign Affairs Administrative Support, the costs incurred by the State Department in providing administrative support to Foreign Currency Program grantees in the excess currency countries.

76. TX300275 &	Smithsonian	\$3,786
TX301005	Institution	
	Washington, D.C.	

This obligation supported inspection and audit of research projects and liaison with host country governments by Smithsonian staff and advisors.



SCIENCE INFORMATION PROGRAM FOR TRANSLATIONS

	Obligation Number	Institution	Principal Investigator	\$ Eqv.
77 - 3	ST302742	Science Information Program		\$62,500

Indian rupees were obligated for translations of publications of priority interest to scholars conducting research in the natural sciences and cultural history.





