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ORGANIZATION**

**ADVISORY COMMITTEE  
ON MEDICAL RESEARCH**

**SECOND MEETING**

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Washington, D.C.**

**RESEARCH ACTIVITIES OF THE  
NATIONAL INSTITUTES OF HEALTH, USPHS,  
IN LATIN AMERICA**

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**PAN AMERICAN HEALTH ORGANIZATION**  
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**WASHINGTON, D.C.**

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RESEARCH AND RESEARCH TRAINING ACTIVITIES OF THE  
NIH/USPHS IN LATIN AMERICA DURING 1962 AND FUTURE TRENDS\*

During the first meeting of the PAHO Advisory Committee on Medical Research, June 18-22, 1962, the Chief of the Office of International Research, National Institutes of Health, USPHS, presented the general background, legislation, philosophy and objectives of all the international research activities of the National Institutes of Health (NIH), USPHS, RES 1/10.

Since then, no significant changes in the legislative authority under which NIH operates overseas have taken place. Consequently, NIH objectives continue to be the ones formulated in Section 2, paragraph one, of the International Health Research Act of 1960 (P. L. 86-610):

"To advance the status of the health sciences in the United States and thereby the health of the American people through cooperative endeavors with the other countries in health research, and research training."

It is important to keep this fact in mind in discussing the various activities undertaken by NIH in relation to Latin America.

The great importance NIH is giving to its Latin American activities is evidenced in the establishment a year ago of an Overseas Office in Rio de Janeiro. This is one of the three offices which the NIH Office of International Research has established abroad with resident biomedical science-administrator representatives. These overseas offices have the purpose of facilitating and evaluating NIH's international

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\*Prepared for the Second Meeting of the PAHO Advisory Committee on Medical Research, 17-21 June 1963, by Dr. Dieter Koch-Weser, Chief, Latin American Office, Office of International Research, NIH/USPHS.

activities in relationship to the U. S. scientific development. Specifically, they maintain contact with scientists, research institutions, and U. S. scientific bodies to assure a two-way flow of information on NIH programs and policies on the one hand, and local scientific interests, capabilities and resources on the other.

In the fall and winter of 1961, trips to South America were made by various NIH staff, including Doctors Martin M. Cummings, Ernest Allen, David Price, and Dieter Koch-Weser, and Mr. R. H. Grant. These along with discussions in Washington, led to the choice of Rio de Janeiro, Brazil, as the site for the NIH Latin America Office. The NIH made this choice after discussions with the Department of State, as the space and logistic support of the latter was an important factor. Also taken into consideration was the relative facility of transportation to and from the U. S. as well as to other Latin American countries.

As the operation of the office has developed, it has become clear that the Latin America Office has two primary tasks. First is the accumulation of scientific information and the evaluation of trends and influences in Latin America as they relate to the NIH foreign research activities. As information is developed, it will assist NIH to choose selectively those activities best calculated to advance its mission in the most effective and economical manner.

In addition, but as a secondary responsibility, the overseas office provides administrative and technical information, advice, and assistance to grantees, NIH Study Sections and NIH National Advisory Councils. Clearly, the Institutes retain the responsibility for the grants management of their own extramural program overseas, but the

Latin America Office acts as an auxiliary to supply specific information when requested.

NIH activities supporting research either in Latin America or of Latin Americans in the United States have shown a definite tendency to increase in number and scope. A discussion of each one of these activities, its difficulties and its impact on the scientific community in Latin America follows.

#### Regular Research Grants and Contracts

The financial support of the research project of an individual investigator and his co-workers constitutes the major share of NIH expenditures in Latin America, and shows a definite increase from Fiscal Year 1961 to 1963 (Table I). These foreign grant awards are judged by the same scientific standards as are used for all NIH awards. However, for foreign awards additional criteria were established relating to the quality of the project, the utilization of unusual resources, skills, and talents, and the contribution to the achievement of the program objectives of the NIH. In general, therefore, they will be awarded to the scientists in the best institutions, as long as their research project contributes to the mission of the various Institutes of NIH. The criticism has been made that this contributes to the strengthening of the places which already have attained excellence, but that it does not help those institutions which need it most. However, by facilitating research activities in the good laboratories, the program very significantly contributes to the potential of the country. Furthermore, looking through the listings of active research grants from eight South American

countries (Table II), it is evident that there really is no unusual concentration in any particular institute or department.

International Research Fellows from Latin America in the United States

This program, in which local nominating committees can propose up to six candidates per year to NIH for postgraduate research work at any one of the National Institutes or other research laboratories in the U. S. (including Puerto Rico), has evoked increasing interest in the Latin American countries (Table III). Nevertheless, it seems that some of the existing nominating committees do not make full use of this opportunity and also that there is need for the establishment of some more committees in those countries which show evidence of an increasing research potential. The nominating committees should be aware of the fact that these fellowships are not designed to provide advanced clinical training, but research training either in the basic sciences or in clinical investigation. It is also necessary to evaluate and possibly guarantee suitable working conditions for the fellow after his return to the home country. This would have the effect of preventing some of the criticisms leveled against this program, namely, the number of fellows remaining in the United States, the dissatisfaction of some of the returned fellows with local conditions after being "overtrained" in the United States, and the inability of some to continue the same line of research for which they were trained for lack of either facilities or full-time salaries. NIH has also tried to remedy some of these problems by offering the returning fellow a "Research Grant to former International Post-doctoral Fellows," which provides up to \$2,500 per year for three years.

In regard to the activities of the major U. S. private foundations,

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the tendency of the Rockefeller Foundation seems to be in the direction of institutional support rather than individual fellowship programs, and the Kellogg Foundation reportedly has decreased the number of its medical fellowships. We have been advised that consequently there will be a run on NIH fellowships with pressure to increase their number. Before doing so, a careful investigation of the scientific career possibilities after return to the country of origin should be made. This obviously varies from country to country and again general rules and even a fixed number of fellowships for all countries alike seems impractical. Including, however, the approximately one hundred and forty Latin American fellows on U. S.-based training programs, it seems certain that at present more young scientists from Latin America are trained than there are sufficiently renumerationed career opportunities upon their return. This is particularly true for the unapplied basic sciences and it has been argued that more emphasis on training in such areas as public health, epidemiology, and nutrition should be given, since the immediate need for these specialists is great.

#### U. S. Fellows and Trainees Abroad

NIH sends American scientists for research and research training abroad. These are not necessarily NIH staff members, but are mostly investigators from academic and other research institutions, many on sabbatical leaves up to two years (Table IV). It seems that, unfortunately, the unusual and outstanding possibilities and facilities in Latin America to conduct research in a great variety of fields such as nutrition, tropical medicine, microbiology and parasitology, genetics, cardiology, and tuberculosis, are simply not known in the United States. Otherwise, it

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is not understandable why of two hundred and thirty-five NIH-supported U. S. research fellows abroad, only five went to Latin American countries and four of these to Mexico. Perhaps it can be hoped that the founding of the Panamerican Association of Medical Colleges in Viña del Mar in November 1962 will improve this situation. It is, in any case, one of the stated goals of that organization.

#### Visiting Scientists Program

One hundred and ninety foreign scientists were invited to NIH in FY 1962 to collaborate with U. S. scientists there. Of these, eleven were Latin Americans (Table IV). The fact that in contrast to the above described program of "U. S. Fellows and Trainees Abroad" the collaboration is only with NIH and not other U. S. scientific institutions, limits the scope of this program. However, most of the explanations for the relatively small number and arguments for increasing it made in relation to that program also apply here.

#### Special Foreign Currency Program

The use abroad of United States-owned foreign currencies (via Public Law 480) permits the extension overseas of NIH intramural research programs. Such programs, of mutual concern to the NIH and to foreign institutions and investigators, are carried through development of collaborative research agreements with scientists and government agencies of other countries. Since relatively little of this currency was available to NIH in Latin America, only three collaborative projects were started, all of them in Brazil:



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Instituto Butantan and the National Cancer Institute, NIH; study of venoms of snakes, spiders and scorpions for therapeutic activity against cancer. January 1962 - December 1963 Cr\$6.000.000.

Universidade da Bahia and the National Institute of Allergy and Infectious Diseases, NIH; studies on pathophysiology of schistosomiasis in Brazil. January 1962 - December 1963 Cr\$6.900.000.

Instituto de Quimica Agricola and the National Cancer Institute/ National Heart Institute, NIH; chemical and pharmacological evaluation of Brazilian botanicals January 1962 - December 1963 Cr\$7.503.000.

The major problems encountered by the investigators under this program are the total unavailability of dollars for equipment purchases and the rapid devaluation of the cruzeiro, resulting in inadequate funds by the end of the project.

International Centers for Medical Research and Training (ICMRT)

This program envisages the development of a series of international centers for medical research and training based in U. S. universities with an overseas extension in the form of a research laboratory and training facility.

These centers provide field experience and research opportunities for U. S. postgraduate physicians and scientists and encourage physicians and other health personnel of collaborating non-U. S. institutions to participate in the development of health research and training resources in their national environment.

Each of these centers consists of (1) a professional, school-based organizational entity in the U. S. which provides a stable,

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continuing framework in which programs of medical research, research planning and research training may be conducted, and which is associated with (2) a research and training establishment overseas where these activities may be pursued under environmental, ethnic, and medical conditions which do not prevail in the United States. Two such ICMRT's have been established in Latin America out of a total of five currently operating:

Tulane University and Universidad del Valle, Cali, Colombia  
Louisiana State University and Universidad de Costa Rica,  
San José, Costa Rica

Though it seems too early to make a valid judgment of the favorable impact they have on U.S. science and on scientific development in the respective Latin American countries, there is no question that in this relatively short period of time both Latin American universities have benefited, staff members of the U.S. universities are gaining experience in settings not available in the United States, and in general, significant contributions to medicine in the tropics are being made. It has been stated that this type of U.S.-Latin American cooperation on a broad basis has engendered more enthusiasm and its impact is being felt more than that caused by a number of individual awards.

#### Grants to PAHO

Emphasis in this review has been placed on direct NIH operations in Latin America with special reference to the responsibilities of the NIH Regional Office in Rio de Janeiro. To make the Latin America picture complete, however, the NIH grants to PAHO must also be considered. These grants are included in Table I and amounted to \$743,359 in 1962 and

\$553,960 in 1963. A complete listing of the active grants is found in Table X with the total support (awarded and approved) for each grant noted.

#### Comments

It has been said that certain countries in Latin America, particularly the larger ones, obtain proportionally a major share of NIH support. In listing, however, the total NIH expenditures in each country (Table V) per 100,000 inhabitants (Table VI), this does not seem to be the case. Panama, due to the grants to the Gorgas Memorial Laboratory, occupies in all these tables a somewhat misleading position. Also, calculating the NIH expenditures either per medical graduate (Table VII) or per physician (Table VIII) demonstrates that certainly the countries with the larger number of medical schools and graduates do not receive a proportionately larger share.

Unfortunately, it has not yet been possible to obtain data to calculate the most significant correlation, that is, between NIH expenditures and the total research expenditures of the individual countries. This information would be particularly important and we hope to obtain it despite some difficulties in order to meet the occasionally expressed criticism that the NIH activities might disturb the domestic research program of a particular country, mostly by attracting scientists into projects which otherwise would not have high priority from the point of view of that country. In Latin America this danger seems remote, since nationally "directed research" is an exception and since any good research activities cannot fail to increase the pool of well trained biomedical research personnel. And nobody will argue that this is not only desirable, but necessary in a developing society.

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An important effort recently undertaken attempted to ascertain which one of the various NIH programs was believed to be the most useful one from the point of view of the Latin American scientific community. As said before, we consider this one of the main tasks of the Overseas Offices of NIH. In a preliminary "survey", which we do not claim to have been executed with faultless techniques of sampling and interrogation, and which therefore should not be considered as final, we asked two hundred and eleven scientists, both clinical investigators and basic laboratory workers, all of them somewhat advanced in their career and considered leaders in their field, which of three NIH programs they would prefer, if they had to make a choice of one:

1. Financial assistance for research (Research Grants)
2. Fellowships for Latin Americans in the U.S.
3. Collaboration with U.S. scientists, who would for that purpose spend some time in Latin America.

Almost everyone stated quickly that all programs were necessary and desirable. They expressed the view that the stay of the U.S. scientist in Latin America should be somewhat prolonged, not less than six months if possible (which does not rule out the short visit of special lecturers), and if such a prolonged intensive collaboration in Latin America with visiting U.S. scientists of all levels is feasible, it would be the program of choice for the majority of scientists in various Latin America countries (Table IX). It seems very desirable that such scientific interchange be stimulated by making the many excellent research possibilities in Latin America better known to the U.S. scientific community. As said before, there is hope that this

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task can be accomplished by the Panamerican Association of Medical Schools, to which essentially all medical schools of this Hemisphere belong. The cooperation of all individual scientists with knowledge of resources and personnel in the various countries is also needed.

Finally, it would be difficult to forecast future trends in NIH activities in Latin America. One would guess, however, that as the scientific centers of excellence continue to increase in Latin America, NIH under its present legislative authority will be able to increase significantly its support for research in these places. We hope that this NIH assistance to excellence, mostly for individual research projects, will be complemented by support of medical and para-medical education, public health measures, etc., which could be given by other government agencies so authorized and also by private foundations.

Public Health Service - NATIONAL INSTITUTES OF HEALTH

TABLE I

NIH RESEARCH GRANTS TO LATIN AMERICA

	<u>FY 1961</u>		<u>FY 1962</u>		<u>FY 1963<sup>a/</sup></u>	
	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>Amount</u>
TOTAL	<u>70</u>	<u>1,499,253</u>	<u>108</u>	<u>2,192,306</u>	<u>95</u>	<u>1,865,631</u>
<u>Country</u>						
ARGENTINA	8	54,795	16	202,368	13	227,842
BRAZIL	9	103,495	13	123,478	15	170,304
CHILE	8	64,935	10	105,195	8	59,860
COLOMBIA	2	8,703	4	32,763	3	86,815
COSTA RICA	1	9,545	1	7,475	-	-
ECUADOR	-	-	-	-	-	-
EL SALVADOR	1	31,604	1	14,795	2	38,710
GUATEMALA	1	7,000	1	7,500	-	-
JAMAICA	1	10,520	-	-	1	9,331
MEXICO	10	168,436	15	205,808	14	171,499
PANAMA	5	141,754	6	175,512	5	181,350
PERU	7	230,544	12	359,672	10	180,359
URUGUAY	4	46,265	6	107,441	6	109,695
VENEZUELA	-	-	3	106,940	3	75,906
<u>International Organizations</u>						
PAHO	8	379,759	8	365,110	7	190,617
INCAP	5	241,908	12	378,249	8	363,343

a/ Awards through April 30, 1963

Office of International Research  
Program Analysis Section  
May 15, 1963

TABLE II

Active Research Grants from  
8 South American Countries

(May 1963)

# ARGENTINA - Active Grants

<u>Institution</u>	<u>No. of Grants</u>
<u>BUENOS AIRES</u>	
NATIONAL UNIVERSITY OF BUENOS AIRES	11
Facultad de Ciencias Exactas y Naturales	
Department of Biochemistry (1)	
Instituto de Investigaciones Médicas	
Hospital Tornu (1)	
School of Pharmacy and Biochemistry (1)	
Facultad de Ciencias Médicas	
Laboratorio de Patología y Cirugía Experimental (1)	
Department of Microbiology (1)	
Institute for General Anatomy (3)	
Cátedra de Física Biológica (1)	
Centro de Investigaciones Cardíacas (2)	
INSTITUTO DE BIOLOGIA Y MEDICINA EXPERIMENTAL	1
INSTITUTO DE INVESTIGACIONES BIOQUÍMICAS "FUNDACION CANTONAR"	1
INSTITUTO MODELO LUIS AGOTE	1
Hospital Rawson	
HOSPITAL RAJOS MEJÍA	1
Departamento de Patología	
CONSEJO NACIONAL DE INVESTIGACIONES CINETÍFICAS Y TÉCNICAS	1
NUCLEO LATINO-AMERICANO PARA EL ESTUDIO DE LA AUDICION Y EQUILIBRIO	1
<u>CÓRDOBA</u>	
UNIVERSIDAD NACIONAL DE CÓRDOBA	2
Institute of Cell Biology (1)	
Institute of Pharmacology (1)	
<u>MENDOZA</u>	
UNIVERSIDAD NACIONAL DE CUYO	1
Facultad de Ciencias Médicas	
Instituto de Histología y Embriología	
<u>ROSARIO</u>	
LABORATORIO DE INVESTIGACIONES LEPROLOGICAS	1
<u>AZUL</u>	
PAN AMERICAN ZOONOSES CENTER	1



BRASIL - Active Grants

<u>University, Institute/Dept.</u>	<u>No. of Grants</u>
INSTITUTO OSWALDO CRUZ, Rio de Janeiro	2
CATHOLIC UNIVERSITY, U. of Rio de Janeiro Institute of Post Graduate Medicine	1
UNIVERSITY OF BAHIA, Salvador Hospital das Clinicas (Dept. of Internal Medicine)	1
UNIVERSITY OF BRAZIL, Rio Instituto de Biofisica (5) Dept. of Tropical Medicine and Infectious Diseases (2)	7
UNIVERSITY OF MINAS GERAIS, Belo Horizonte Instituto de Biologia (Fac. de Filosofia)	1
UNIVERSITY OF RECIFE, Recife Instituto de Higiene (Fac. de Medicina)	1
UNIVERSITY OF RIO GRANDE DO SUL, Porto Alegre Secção de Genetica	2
UNIVERSITY OF SÃO PAULO, Ribeirão Preto Dept. of Microbiology and Immunology (1) Hospital das Clinicas (1) Dept. of Parasitology (1) Dept. of Pharmacology (2)	5
UNIVERSITY OF SÃO PAULO, São Paulo Dept. of Anat. Pathology (1) Lab. of Cell Physiology (2) Dept. of Histology (1)	4

CHILE - Active Grants

<u>University, Institute/Dept.</u>	<u>No. of Grants</u>
FUNDACION ARTURO LOPEZ PEREZ, Santiago	1
UNIVERSIDAD CATOLICA DE CHILE, Santiago	1
UNIVERSIDAD DE CHILE	11
Dept. of Parasitology (2)	
Dept. of Oncology (1)	
Center of Exper. Psychiatry (1)	
Insto. de Neurocirugia e Invest. Cerebrales (1)	
Insto. de Fisiologia (1)	
Dept. of Pediatrics (1)	
Inst. of Pharmacology (1)	
Dept. of Physiol. Chemistry (1)	
Preventive Medicine (1)	
Insto. de Fisica y Matematica (1)	

COLOMBIA - Active Grants

<u>I n s t i t u t i o n</u>	<u>No. of Grants</u>
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BORNEO

UNIVERSIDAD DE LOS ANDES . Departamento de Biologia	1
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UNIVERSIDAD NACIONAL DE COLOMBIA School of Public Health (1) Hospital San Juan de Dios Department of Pathology (2)	3
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MOBELLIN

UNIVERSIDAD DE ANTIOQUIA Facultad de Odontologia (1) School of Medicine Department of Physiology (1)	2
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ECUADOR - Active Grants

<u>University, Institute/Dept.</u>	<u>No. of Grants</u>
ESCUELA POLITECNICA NACIONAL Dept. of Radioisotopes	1

PERU- Active Grants

<u>University, Institute/Dept.</u>	<u>No. of Grants</u>
UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS, Lima Dept. of Animal Pathology (1) Institute of Andean Biology (3)	4
HOSPITAL DEL NIÑO, Lima	1
BRITISH-AMERICAN HOSPITAL, Lima Dept. of Pediatrics	1
UNIVERSIDAD PERUANA DE CIENCIAS MEDICAS Y BIOLOGICAS, Lima High Altitude Research Lab	1
LABORATORIO DE INVEST. DE CANCER, Lima	1
SOCIEDAD DE BENEFICENCIA PUBLICA DE LIMA, Lima	3

U R U G U A Y - Active Grants

<u>I n s t i t u t i o n</u>	<u>No. of Grants</u>
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MONTEVIDEO

UNIVERSITY OF THE REPUBLIC OF URUGUAY

7

Faculty of Medicine

Instituto de Neurologia (3)

Service of Obstetrical Physiology (2)

Department of Cardiology (Hospital de Clínicas) (1)

Instituto de Pediatría (Hospital Paredy-Rossell) (1)

INSTITUTO DE INVESTIGACIONES DE CIENCIAS BIOLOGICAS

1

Departamento de Ultraestructura Celular

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VENEZUELA - Active Grants

<u>University, Institute/Dept.</u>	<u>No. of Grants</u>
INSTITUTO VENEZOLANO DE INVESTIGACIONES CIENTIFICAS, Caracas	4
Dept. of Virology (1)	
Leprosy Research Lab (1)	
Dept. of Physiopathology (1)	
Dept. of Physiology (1)	
ASSOC. OF INVESTIGATIVE DERMATOLOGY, Caracas	1

## Public Health Service - NATIONAL INSTITUTES OF HEALTH

TABLE IIIINTERNATIONAL RESEARCH FELLOWS FROM LATIN AMERICA IN THE UNITED STATES

Country	FY1961		FY1962		FY1963**	
	No.	Amount	No.	Amount	No.	Amount
TOTAL	<u>18</u>	<u>\$123,765</u>	<u>25</u>	<u>\$185,244</u>	<u>28</u>	<u>\$225,331</u>
ARGENTINA *	2	13,613	1	9,120	4	34,447
BOLIVIA*	-	-	-	-	-	-
BRAZIL*	4	24,036	4	26,981	7	54,014
CHILE*	1	8,100	2	17,587	4	34,767
COLOMBIA*	2	12,409	4	30,659	1	8,640
ECUADOR	-	-	-	-	-	-
PARAGUAY	-	-	-	-	-	-
PERU*	3	19,663	4	30,106	6	43,940
URUGUAY*	3	25,118	3	20,487	2	21,109
VENEZUELA*	-	-	2	13,930	1	6,280
COSTA RICA*	-	-	2	13,910	-	-
EL SALVADOR*	-	-	-	-	-	-
GUATEMALA	-	-	-	-	-	-
HONDURAS	-	-	-	-	-	-
JAMAICA*	-	-	1	6,264	-	-
MEXICO*	3	20,826	2	16,200	3	22,134
NICARAGUA	-	-	-	-	-	-
PANAMA	-	-	-	-	-	-

Data from Public Health Service Grants and Awards Fiscal Year 1961 (Publication No. 883) Part II and Fiscal Year 1962 (Publication No. 964) Part II.

\*Countries with nominating committees March 1, 1963.

\*\* As of May 15, 1963

Office of International Research  
Program Analysis Section  
May 15, 1963



TABLE IV

EXCHANGE OF SCIENTISTS BETWEEN UNITED STATES AND LATIN  
AMERICAN COUNTRIES

Country	FY1961		FY1962		FY1963*	
	Foreign in US	US in L.A.	Foreign in US	US in L.A.	Foreign in US	US in L.A.
ARGENTINA	1	-	1	-		
BOLIVIA	-	-	-	-		
BRAZIL	1	-	4	-		
CHILE	-	-	1	-		
COLOMBIA	2	-	1	-		
ECUADOR	-	-	-	-		
PARAGUAY	-	-	-	-		
PERU	-	1	-	-		
URUGUAY	-	-	3	-		
VENEZUELA	-	-	-	1		
COSTA RICA	-	-	-	-		
EL SALVADOR	-	-	-	-		
GUATEMALA	-	-	-	-		
HONDURAS	-	-	-	-		
JAMAICA	1	-	1	-		
MEXICO	-	1	-	4		
NICARAGUA	-	-	-	-		
PANAMA	-	-	-	-		

Data from Basic Data Relating to NIH 1961 and 1962.

Includes US Fellows and Trainees Abroad and Visiting Scientist Programs.

Excludes International Postdoctoral Research Fellowship Program (see Table II).

\*Not available.

NIH - CIR: Rio May 1963

TABLE V

TOTAL NIH EXPENDITURE IN LATIN AMERICA\*

Country	FY 1961		FY 1962		FY 1963 **	
	Total Awards	Amount \$	Total Awards	Amount \$	Total Awards	Amount \$
ARGENTINA	11	70,074	18	218,488		
BOLIVIA	-	-	-	-		
BRAZIL	14	145,681	22	197,947		
CHILE	8	73,035	13	130,602		
COLOMBIA	6	40,922	9	74,577		
ECUADOR	-	-	-	-		
PARAGUAY	-	-	-	-		
PERU	10	257,569	16	389,788		
URUGUAY	7	71,453	12	139,188		
VENEZUELA	-	-	6	126,500		
COSTA RICA	1	9,545	4	42,385		
EL SALVADOR	1	31,604	1	14,795		
GUATEMALA	1	7,000	1	7,500		
HONDURAS	-	-	-	-		
JAMAICA	2	20,515	2	10,429		
MEXICO	16	348,562	23	417,651		
NICARAGUA	-	-	-	-		
PANAMA	5	141,754(κ)	6	175,513 (κ)		
TOTAL	82	1,217,714	133	1,945,563		

(κ) Includes Gorgas Memorial Laboratory

Data from Public Health Service Grants and Awards Fiscal Year 1961 (Publication No. 883) and Fiscal Year 1962 (Publication No. 964).

Includes Research Grants, Fellowship programs, Visiting Scientist Program and Training Grants. Excludes ICMRT and P.L. 480 Programs.

\* Excluding Grants to PAHO and INCAP.

\*\* Not available.

NIH-OIR: Rio May 1963

TABLE VI

TOTAL NIH EXPENDITURES PER 100,000 INHABITANTS\*  
(Ranked in FY 1962 Order)

Country	Population 00,000	FY 1961 \$	FY 1962 \$	FY 1963** \$
PANAMA	1.1	12,886	15,955	
URUGUAY	2.8	2,551	4,971	
COSTA RICA	1.1	867	3,853	
PERU	10.9	2,363	3,575	
CHILE	7.3	1,000	1,789	
VENEZUELA	7.4	NONE	1,709	
MEXICO	36.1	965	1,156	
ARGENTINA	20.0	350	1,092	
JAMAICA	1.6	1,282	651	
EL SALVADOR	2.5	1,264	591	
COLOMBIA	14.1	290	528	
BRAZIL	65.7	221	301	
GUATEMALA	3.8	184	197	
AVERAGE (Less Panama)		1,030	1,701	

Population data from The Economist Diary, London, 1962. Totals for El Salvador, Mexico, and Venezuela are for 1961, others are for 1960. Expenditure totals taken from Table I.

\* Excluding grants to PAHO and INCAP.

\*\* Not Available.

NIH-OIR: Rio May 1963

TABLE VII

TOTAL NIH EXPENDITURES PER MEDICAL GRADUATES  
(Ranked in FY 1962 Order)

Country	No. Medical Schools	No. Medical Graduates	Dollar Expenditure per Graduate			**
			FY1961	FY1962	FY1963	
PANAMA	1	13	10,904	13,500		
PERU	3	67	3,844	5,813		
URUGUAY	1	60	1,190	2,319		
ARGENTIAN	8	281	249	777		
MEXICO	21	368 (x)	613	735		
CHILE	3	218	335	599		
EL SALVADOR	1	26	1,215	569		
VENEZUELA	4	255	-	496		
JAMAICA	1	24	854	434		
COLOMBIA	7	408	100	182		
GUATEMALA	1	59	118	127		
BRAZIL	28	1578	92	125		
BOLIVIA	3	24 (x)	-	-		
ECUADOR	3	-	-	-		
PARAGUAY	1	51	-	-		
COSTA RICA	1	-	-	-		
HONDURAS	1	-	-	-		
NICARAGUA	1	23	-	-		

(x) Incomplete.

NIH Expenditures from Table I.

Data on Medical Schools and Graduates from Summary of Health Conditions in the Americas, 1957-60, PAHO, Publication No. 64, July, 1962, Washington.

\* Excluding grants to PAHO and INCAP.

\*\* Not available.

NIH - OIR : Rio May 1963

TABLE VIII

TOTAL NIH EXPENDITURE PER PHYSICIAN\*  
(Ranked in FY 1962 Order)

Country	Number of Physicians	Physicians per 10,000 population	Dollar Expenditure per Physician		
			FY 1961	FY 1962	FY 1963**
PANAMA	401	3.8	353	437	
COSTA RICA	458	3.9	20	92	
PERU	5,061	4.7	50	77	
URUGUAY	3,116	11.3	22	44	
EL SALVADOR	483	1.8	65	30	
JAMAICA	342	2.2	59	30	
CHILE	4,726	6.2	15	27	
VENEZUELA	5,045	7.0	-	25	
MEXICO	20,227	5.8	17	20	
COLOMBIA	6,042	4.3	6	12	
GUATEMALA	730	2.1	9	10	
ARGENTINA	26,898	13.0	3	8	
BRAZIL	27,111	4.0	5	6	
BOLIVIA	657	1.9	-	-	
ECUADOR	1,325	3.4	-	-	
PARAGUAY	889	5.3	-	-	
HONDURAS	365	2.1	-	-	
NICARAGUA	524	3.5	-	-	

NIH Expenditure from Table I. Data on Physicians from Summary of Health Conditions in the Americas, 1957-60, PAHO, Washington, 1962, pag. 89. Publication No. 64.

\* Excluding grants to PAHO and INCAP.

\*\* Not available.

NIH-OIR: Rio May 1963

TABLE IX

Preference of Latin American Leaders  
in Biomedical Science for

	Financial Assistance for Research (Research Grants)	Fellowships for Latin Americans in the United States	Collaboration with U.S. Scientists in Latin America	Undecided	Number of Scien- tists asked
Argentina	7	2	20	2	31
Brazil	8	2	50	1	61
Chile	4	2	27	---	33
Colombia	5	1	23	---	29
Peru	2	1	21	---	24
Venezuela	1	1	12	---	14
Panama	1	1	7	1	10
Costa Rica	1	2	6	---	9
TOTAL	29	12	166	4	211

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TABLE X.

## Public Health Service - NATIONAL INSTITUTES OF HEALTH

Active NIH Grants to Pan American Health Organization  
and Institute of Nutrition of Central America and Panama  
as of May 31, 1963

PAN AMERICAN HEALTH ORGANIZATION

<u>Grant No.</u>	<u>Investigator</u>	<u>Title of Project</u>	<u>Amount</u>
AI-04224-02	Blood, Benjamin Donald	Studies on methods of treating canine echinococcosis	\$ 4,600
CA-07171-01	Burke, Mary H.	Epidemiological research on cancer in Latin America	10,920
AM-07510-01	Chopra, Joginder E.	Pathogenesis and prevention of anemia in Trinidad	21,713
AM-04635-03	Graham, George G.	Infantile diarrhea and malnutrition in Peru	49,190
GM-08957-02	Horwitz, Abraham	International research planning congress	92,500
AM-03992-03	Kevany, John Joseph	Evaluation of clinical signs of nutritional status	6,849
HE-04152-04	McGill, Henry C.	Atherosclerosis in Latin America	48,300
GM-10967-01	Puffer, Ruth R.	Exogenous causes of congenital malformations planning conference	19,510
GM-08682-02	Puffer, Ruth R.	Regional development of epidemiological studies	231,358
MH-07526-01	Velasco-Alzaga, Jorge M.	Mental health information center for Latin America	36,384
<u>INSTITUTION OF NUTRITION OF CENTRAL AMERICA AND PANAMA</u>			
AM-04731-03	Arroyave, Guillermo	Biochemical evaluation of nutritional status	46,148
GM-06112-05	Ascoli, Werner	Interrelations between malnutrition and diarrhea	79,274
AM-00981-08	Behar, Moises	Metabolic factors in protein malnutrition	57,526
AM-03811-04	Bressani, Ricardo	Amino acid metabolism in human subjects	44,523
AM-05582-02	De la Vega, Jose Mendez	Nutrition research	54,250
AI-05405-01	Mata, Leonardo	Interrelation of viruses, diarrhea and nutrition	33,607
HE-02653-07	Tejada, Carlos	Relation of atherosclerosis to environmental factors	57,614
AM-04827-03	Wilson, Dorothy L.	Infection and human nutritional status in the tropics	44,651