PD-AAQ-841

931-1155

ACTION MEMORANDUM

TO : DS/PPU, Mr. Robert Simpson

FROM : DS/AGR, Leon F. Hesser

SUBJECT: Request for Approval of FY78 Funds for DS/AGR Small Activities Special Projects (Inputs)

REF : Proposed Conference/Workshop Entitled: Conference on In-Vitro Cell Culture Techniques to Health and Economy in Developing Countries (Described in Attachment A to enclosed draft PIO/T).

PROBLEM: There is a need to disseminate recently developed techniques and information as related to the preparation of previously identified immunogenic materials against trypanosomiasis in man and animals. LDC scientists and trainees, and worldwide researchers need to be instructed in the details of these new techniques. There is also a need for involved researchers and area scientists to address aspects of new research directions. These directions may make possible the commercial preparation of trypanosomiasis vaccines or suppressants.

DISCUSSION: The proposed conference/workshop is directly supportive of the objectives of the International Laboratory for Research on Animal Diseases (ILRAD). This international agricultural research center, the proposed conference host, was instrumental in the development of these new techniques, and, as a member of the Consultative Group for International Agricultural Research (CGIAR), receives major core and capital budget support from AID through DS/AGR. It is consistent with current policy determinations that AID support for this special activity should also be through DS/AGR.

This proposed conference is to receive partial support from several donors including the Rockefeller Foundation, the National Institutes of Health, the World Health Organi-

zation, and the Federal Republic of Germany. DS/AGR proposes that AID provide partial support in the amount of $30,000, or about one-fifth of the estimated total costs of $152,000.

The proposed conference is described in detail in Attachment A to the draft PIO/T enclosed with this memorandum.

RECOMMENDATION: DS/AGR recommends that you approve the use of FY78 Small Activity (Inputs) funds in the amount of $30,000 in partial support - in combination with other donor funds - of the above titled conference.

APPROVED: Kenneth A. Bulow

DISAPPROVED: _____

DATE: 3/10/78

Clearance:

DS/AGR,	CMcClusky		date 26 Jan 78
	NSRaun		date
	FWilliams		date 1/26/78
	MMozynski		date Feb. 1, 1978
DS/H,	ESmith		date Feb 1 1978

AID 1350-1X (7-71)

PIO/T

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES

1. Cooperating Country: DS/Bureau

Page 1 of 2 Pages

2. PIO/T No.: 931- 1155-3188791

3. ☒ Original or Amendment No. _____

4. Project/Activity No. and Title: Conference of In-Vitro Cell Culture Techniques to Health and Economy in Developing Nations at ILRAD

DISTRIBUTION

5. Appropriation Symbol: 72-1181021.3

6.A. Allotment Symbol and Charge: 843-31-099-00-20-81

6.B. Funds Allotted to: ☒ A.I.D./W ☐ Mission

7. Obligation Status: ☒ Administrative Reservation ☐ Implementing Document

8. Funding Period (Mo., Day, Yr.): From 3/1/78 To 12/31/78

9.A. Start (Mo., Day, Yr.): Be[illegible]78 and 3/15/78

9.B. Completion date of Services (Mo., Day, Yr.): 12/31/78

10. [illegible]ion: ☐ A[illegible]act ☐ Cooperating Country Contract ☐ Participating Agency Service Agreement ☒ Other Grant Agreement

10.B. Authorized Agent

Estimated Financing $1.00=		(1) Previous Total	(2) Increase	(3) Decrease	(4) Total to Date
11. Maximum A.I.D. Financing	A. Dollars		$30,000		$30,000
	B. U.S.-Owned Local Currency		FUNDS RESERVED BY		
12. Cooperating Country Contributions	A. Counterpart		POST 3-10-78		
	B. Other		SER/FM/CSD		

13. Mission References

14. Instructions to Authorized Agent: This PIO/T is to fund a Grant Agreement between AID and the International Laboratory for Research on Animal Diseases (ILRAD) to provide partial support of $30,000 to cover costs of 100 copies of the conference publication, round trip travel and per diem for LDC and other participants to the conference, and round trip travel for conference speakers to attend Conference of In-Vitro Cell Culture Techniques to Health and Econom in Developing Nations to be held at and hosted by ILRAD from August 24-31,197 It is anticipated that, contributions from the Rockefeller Foundation, the National Institutes of Health, the Federal Republic of Germany, and the World Health Organization are expected to cover the other items of the estimated budget.

Attachment A: Program Description - B. Report & Publication Provisions. "Article #____. Voucher Identification. In each instance of voucher(SF1034) submission made by the contractor for payment hereunder, the following identification data will appear on the face of the voucher.
Contract: AID/_____ Project: 931-1155.11 Project Office: DS/AGR/L

15. Clearances – Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate
DS/AGR/L, NKonnerup Date 2/1/78

B. Funds for the services requested are available
DS/PO, Kassbaum Date 6/2/78

C. The scope of work lies within the purview of the initiating and approved Agency Programs
DS/AGR, LHesser Date 2/1/78

D.
DS/PO, JRyan Date 2-6-78

E.
DS/AGR, MMozynski Date 2/1/78

F.

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to
DS/AGR, CMcClusky Date: 01FEB78

17. For the Agency for International Development
Signature: Kenneth Milow
Title: Chief, DS/PO/PPA

18. Date of Signature: 3/10/78

GPO 867-266

Program Description ATTACHMENT A

CONFERENCE OF IN-VITRO CELL CULTURE TECHNIQUES TO HEALTH AND ECONOMY IN DEVELOPING NATIONS AT ILRAD

(An Educational Programme Endorsed by The Tissue Culture Association)

INTERNATIONAL LABORATORY FOR RESEARCH ON ANIMAL DISEASES
(ILRAD) P.O. Box 30709, Nairobi, Kenya
24 - 31 August 1978

Director:	Dr. James A. Henson,	ILRAD, P.O. Box 30709, Nairobi
Conference Chairmen:	Dr. Karl Maramorosch,	Waksman Institute of Microbiology, Rutgers University, New Brunswick, N.J. 08903, U.S.A.
	Dr. Hiroyuki Hirumi	ILRAD, P.O. Box 30709, Nairobi Kenya.
Local Committee:	Dr. H. Hirumi (Chairman), Dr. T.J. Kurtti (Secretary), Mr. M. Mitoko (Treasurer), Mr. R. Nelson (Laboratory Preparation), Mr. J.G.R. Ocama (Slide Projection), Mr. K. Nuguli (Lodging & Transportation), Mrs. K. Hirumi (Reception)	

I. OBJECTIVES

1. To establish a strong link between the tissue culture communities in advanced nations and those in developing nations.
2. To transfer well standardized modern tissue culture technology to the developing nations where the applications of such technology are of great potential benefit to their health and economy.
3. To identify the problems which are presently constricting the health and economy in developing nations but which can be improved by the applications of modern tissue culture technology.
4. To initiate a strong effort to develop productive tissue culture communities within developing nations.

5. To develop research and training programmes in solving the problems with the collaboration of leading scientists in advanced nations and scientists from afflicted regions.

II. RATIONALE

In vitro technology has made great advances during the past two decades. Well standardized tissue culture techniques are now available in diverse areas of bioscience and agriculture, and have been successfully applied for the diagnosis of parasitic, viral and hereditary diseases of man, of animals, and of plants, and biological control of insect pests, to mention just a few, in advanced nations.

Scientific communities of many developing nations have not yet been fully exposed to these modern developments and applications of in vitro technology. A number of problems that are presently constricting the health and economy can be greatly and rapidly improved as the modern technology become readily available in these communities.

Although some good laboratories are currently using tissue culture techniques for the diagnosis of human and animal pathogens and the production of vaccines, the number and the geographical distribution of such laboratories are extremely limited.

Overall status of the effective applications of modern tissue culture techniques in developing nations is far, at least 10 years, behind from that in many advanced countries and the situation is very unsatisfactory.

The lack of efficient tissue culture activities in these scientific communities has hindered rapid progress in solving of the major problems existing in the developing nations. This is due to the extreme shortage of well informed, qualified scientists and highly reliable technologists in tissue culture. Adequate facilities and various supplies needed for tissue culture work are also hardly available in most sectors of the scientific communities.

For example, the unavailability of adequate in vitro systems to cultivate pathogens of the six major tropical diseases has been accounted for one of the major factors that have hindered the development of effective control measures against these important diseases in the tropical areas.

Recent success in establishing the in vitro culture system of animal-infective African trypanosomes is of great encouragement and strongly indicates that a certain breakthrough can be made even in a developing nation if the modern technology is efficiently employed. This is, however, a very limited case. In order to overcome the problems in various other fields, it is indispensable to make major efforts and strong campaigns on the effective utilization of well standardized modern tissue culture technology within developing nations.

On the other hand, it is also true that a number of leading scientists who have extensive knowledge and skills in modern tissue culture technology have not been well informed and are possibly unaware of the existence of the problems in various developing nations, particularly in the tropical and semi-tropical areas.

It is, therefore, important to establish a strong link between the scientific communities in which the experts and the technology are presently available and the communities in which the problems are existing but lacking the experts and facilities.

In order to make effective progress, various approaches listed below should be made.

1. To hold an extensive introductory conference on the applications of modern tissue culture technology (as described in this proposal).
2. To hold a series of specific problem-oriented workshops (similar to the workshops on major tropical diseases held by WHO).
3. To conduct a series of extensive technical training courses in developing nations (similar to the WHO immunology training courses.

4. To develop long-term research projects in specific problem areas (i.e. recent establishment of ILRAD).

These efforts will not conflict but will strongly supplement each other. Since the field of tissue culture in the most scientific communities in developing nations is presently very immature, any single effort mentioned above would not achieve its objectives if the efforts were made in a disorganized way. At present it is important to develop strong and efficient tissue culture communities in various disciplines.

We therefore propose here to hold an extensive introductory conference in Nairobi, Kenya as a major initial step and hope that the conference will be followed by a number of workshops, training courses and long-term research projects.

III. DESIGN

1. Participants

1.1 Experts from advanced nations

Forty possible participants have been selected from various disciplines (8 countries) based on suggestions made by a number of internationally leading scientists.

Of the 40 individuals, 14 have indicated to date their interest in participating in the conference. (Official contacts with all suggested participants have not yet been made.)

The final selection (about 26 participants) shall be made based on the individual interest and availability, geographical distribution, and topics relevant to the conference.

The selected participants are expected to be outstanding experts in their own field, to have extensive knowledge and experience in the specific field and the potential for developing future research and/or training programmes with the collaboration of scientists from afflicted regions.

1.2 Participants from Developing Nations

About forty to fifty participants, depending on the funds

available, from afflicted regions in developing nations are expected to attend the conference.

The participants should be scientists presently engaged in active research work. The selected participants should have a strong interest in the application of modern tissue culture technology, at least, as a discipline presented at this conference. Preferably they should have the capability to transfer the information obtained from the conference to their colleagues in different disciplines.

The selection shall be made with the consideration of geographical distribution in developing nations. If funds are limited the emphasis shall be focused on African nations.

2. Place and Time

ILRAD, that has been established recently by the Consultative Group on International Agricultural Research, which is in Nairobi, Kenya, will host the conference and is ideally suited for this purpose.

Nairobi is the seat of several international scientific institutes and the local committee, consisting of ILRAD staff members, will actively encourage participation in the sessions by younger scientists, whose participation is very much desirable in this endeavour.

ILRAD's new facilities, including the conference room and fully equiped cell culture laboratories, will be utilized.

The time for the conference has been chosen so as not to conflict with most university schedules and to fall during a period best suited climatically for holding the conference (24-31 August, 1978).

3. Lecture, Laboratory Demonstration and Round Table Discussion

Morning:	09.00 - 12.00	Lectures
Afternoon:	13.30 - 17.00	Laboratory Demonstration and Round Table Discussion
Evening:	20.00 - 21.30	Lecture

All lectures will emphasize the practical applications of well standardized methodology on selected topics in

diverse areas of medical, veterinary and agricultural sciences.

In order to achieve the desired effect, the conference will consist not only of formal lecture periods but also of laboratory demonstration where selected practical methodology will be shown.

The laboratory demonstration will be followed by Round Table Discussion in order to facilitate informal discussion. Two - three different topics will be offered every afternoon for the Laboratory Demonstration and the Round Table Discussion. Participants shall made their own choice on the topic.

Informal discussion on the technical aspects as well as the problem areas existing in the afflicted regions shall be made at the Round Table Discussion.

Further informal discussion can be also made during the lunch time. All participants will have lunch together at the ILRAD dining facilities.

4. Lodging and Transportation

All participants, except residents of Nairobi, will stay at the same hotel (if enough accommodation is available).

Transportation from the airport to the hotel as well as that between the hotel and ILRAD will be provided.

IV. PUBLICATION

The proceedings of this conference will be edited by K. Maramorosch and H. Hirumi, with the assistance of staff members from ILRAD, and published by the camera-ready process shortly after the conference.

The publication will be in the form of a "Handbook of Practical Tissue Culture Applications", providing complete step-by-step methodology.

The camera-ready process will assure prompt publication and lower the cost of the handbook. Academic Press, New York, has expressed strong positive interest in publishing this volume.

V. FUNDINGS

The total cost of the conference will include the cost of

plane tickets, local transportation, hotels and meals (one week for each participant), as well as the cost for the Laboratory Demonstrations, phones, postages, clerical help and printing of programme expenses.

Applications for supporting funds will be made to NIH, NSF, AID-State Department, ODM, Rockefeller Foundation and WHO/FAO. Possible additional sources of support considered at this time include the German, Canadian, Danish and The Netherland government agencies that might be willing to help.

VI. ATTACHED

1. Tentative Programme and Suggested Speakers
2. List of Suggested Conference Speakers
3. Estimated Costs

1. Tentative Programme and Suggested Speakers

CONFERENCE OF IN-VITRO CELL CULTURE TECHNIQUES TO HEALTH AND ECONOMY IN DEVELOPING NATIONS AT ILRAD

TENTATIVE PROGRAMME

I.	Opening Address	J.A. Henson*
II.	Introduction to In Vitro Techniques.	Chairmen: K.R. Porter & P.A**
1.	Plan for Tissue Culture Laboratories	V.P. Perry*
2.	Sterile Techniques and Culture Media	M.K. Patterson and/or S.G. Bradley
3.	Cultivation of Vertebrate Cells	L.R. Murrell* or W.H.J. Douglas
4.	Cultivation of Invertebrate Cells	H. Hirumi*
5.	Cultivation of Plant Cells	T. Murashige*
6.	Cryo-preservation of Cultured Cells	V.P. Perry* and M.W. Vincent*
III.	Applications of In Vitro Techniques	
A.	Vertebrate Cell Systems	Chairmen: L.R. Murrell* & P.B**
1.	Isolation and Identification of Human Viruses	W. Henle
2.	Isolation and Identification of Animal Viruses	H.L. Bachrach or S.S. Breese Jr.

* Speakers who have agreed to participate in the Conference

** Co-Chairmen (P.A - P.F) will be selected from the invited participants from African nations

V. Laboratory Demonstrations (Workshop) Co-ordinator: H. Hirumi*

1. Sterile Techniques and Preparation of Culture Media	M.K. Patterson and/or S.G. Bradley
2. Vertebrate Cell Culture	L.R. Murrell* or W.H.J. Douglas
3. Plant Cell Culture	T. Murashige*
4. Identification and Isolation of Viruses	H.L. Bachrach or S.S. Breese, Jr.
5. Diagnosis of Human and Animal Sex	S. Fedoroff*
6. HL-A Typing	K.W. Sell
7. Immunologic Assays for Antigenic Variants	G. Roelants*
8. In Vitro Propagation of Parasites	W. Trager, H. Hirumi* J.J. Doyle* and/or D. Brown*
9. In Vitro Assays for Drugs	G. Streissle*
10. Cryo-preservation of Cultured Cells	M.W. Vincent* and/or L.P. Perry*

VI. Closing Remarks — K. Maramorosch*

2. List of Suggested Conference Speakers

CONFERENCE SPEAKERS

Dr. H.L. BACHRACH	Plum Island Animal Disease Lab., ARS, USDA, Greenport, N.Y. U.S.A.	(IIIA2, V4)
Dr. S.G. BRADLEY	Dept. of Microbiology, Virginia Commonwealth University, Richmond Virginia 23298, U.S.A.	(II2, V1)
Dr. S.S. BREESE, Jr.	Plum Island Animal Disease Lab., ARS, USDA, Greenport, N.Y. U.S.A.	(IIIA2, V4)
Dr. D. BROWN*	East African Veterinary Research Organization, Muguga, Kenya	(IIIB3, V8)
Dr. A.E. BUTTERWORTH*	Wellcome Trust Research Lab., Kenyatta National Hospital, Nairobi, Kenya (1978: Harvard Univ., Combridge, Ma. U.S.A.)	(IIIB4)
Dr. J. CASALS	Dept. of Epidemiology, School of Medicine, Yale Arbovirus Res. Unit, 60 College St., New Haven, Conn. 06510.	(IIID1)
Dr. W.H.J. DOUGLAS	W. Alton Jones Cell Science Center, P.O.Box 631, Lake Placid, N.Y. 12946, U.S.A.	(II3, V2)
Dr. J.J. DOYLE*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(IIIB3, IIIB6, V8)
Dr. S. FEDOROFF*	Dept. of Anatomy, Univ. of Saskatchewan, Saskatoon, S7N OWO, Canada	(IIIA3, V5)
Dr. W. HENLE	The Joseph Stockes Jr. Res. Inst. The Children's Hospital of Philadelphia, 34th St. & Civic Center Blvd., Philadelphia, Pa. 10104, U.S.A.	(IIA1, V4)
Dr. J.A. HENSON*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(I, IV)
Dr. H. HIRUMI*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(II4, IIIB2, V8)
Dr. E.H. LENNETTE	Calif. State Dept. Health Virus Lab., 2151 Berkeley Way, Berkeley, Calif. 94704, U.S.A.	(IV 1)

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* Speakers who have agreed to participate in the Conference

3. Diagnosis of Human Hereditary Diseases - (a) Chromosomal Anomaly — S. Fedoroff*

4. Diagnosis of Human Hereditary Diseases - (b) HL-A Typing — K.W. Sell

5. Immunologic Assays for Malnutrition — R. Steihm*

6. Early Diagnosis of Human and Animal Sex — S. Fedoroff*

7. In Vitro Assays for Drugs — G. Streissle*

B. In Vitro Systems for Parasites. — Chairmen: J.A. Pino & P.C**

1. Propagation of Malaria Parasites — W. Trager and/or V.P. Perry*

2. Propagation of Salivarian Trypanosomes — H. Hirumi* and J.J. Doyle*

3. Propagation of Theileria Parasites — D. Brown* and H. Hirumi*

4. Propagation of Schistosomes — A.E. Butterworth*

5. Possible Applications to Vaccine Production — W. Trager

6. Immunologic Assays for Antigenic Variants — G. Roelants* and J.J. Doyle*

C. Plant Cell Systems. — Chairmen: K. Maramorosch* & P.D**

1. Propagation of Pathogen-Free Crops — T. Murashige*

2. Propagation of New Varieties — L.C. Nickell

3. Applications to Breeders — L.G. Nickell

D. Invertebrate Cell Systems. — Chairmen: J.J. McKelvey & P.E**

1. Isolation and Identification of Mosquito-borne Viruses — J. Casals or C.E. Yunker

2. Isolation and Identification of Tick-borne Viruses and Rickettsiae — C.E. Yunker

3. Biological Control of Insect Pests and Viruses — K. Maramorosch*

IV. Future Prospects. — Chairmen: J.A. Henson* & P.F**

1. Medical Science — K.R. Porter and E.H. Lennette

2. Veterinary Science — J.A. Pino

3. Agricultural Science — K. Maramorosch*

4. Entomological Ramifications — J.J. McKelvey, Jr.

3. Estimated Costs

I Basic Data

(1) Attendance

(a) There will be 26 people attending from Europe, America and other continents. An average air ticket cost $1,606.00 New York/Nairobi return has been used in estimating costs of air ticket for this group of people.

(b) Other African participants are estimated to number 50. Their ticket costs average US $800 each.

(2) Cost Increase provision

It is estimated that cost increases will be as follows:

Year	Cost Index
1976	100
1977	112
1978	129

The indices above have been used for overall costs.

(3) Hotel Costs

The estimates of these costs are based on double occupancy for 76 participants. Added to room and meal costs are service charges and taxes.

Meal costs have been estimated:

7 lunches at $6.00 per person
5 dinners at $9.00 per person
1 Banquet for the group one evening

(4) Other Costs:

(i) Transit Costs:

It has been estimated that the overseas participants will need two days (one day each way). An average rate of $50 per participant transit day is estimated in transit stop.

II Cost Estimates:

(1) Travel Costs

(a) Tickets

26 overseas participants (New York/Nairobi return) $1606.00 x 26	- 41756.00
50 African participants $800 x 50	- 40000.00
	81756.00

		81,756.00	
Provision for IATA price increase by 1978			
	29%	23,709.24	
Total Cost of air tickets			105,465.24
(b) In transit expenses			
26 at $50 x 2 days		2,600.00	
(c) Local transport			
Transport to and from airport			
75 @ $10		750.00	
			3,350.00
Total Travel Transport Costs			108,815.24

(2) Hotel/Meal Costs

Comparative Hotel Costs:

Hotels	Six Eighty	Norfolk	New Stanley
Rates Single Occupancy	$31.48	$37.18	$30.06
Double "	$34.52	$43.57	$37.48
Costs			
Single Occupancy	$14,184.24	$16,769.34	$13,571.52
Double Occupancy	$ 7,870.56	$ 9,933.96	$ 8,545.44

(a) Room Costs			$13,571.52
(b) Meals			
Lunches	76 x 7 x $6.00	$ 3,192.00	
Dinners	76 x 5 x $9.00	$ 3,420.00	
Banquet for the whole group		$ 2,000.00	
Conference teas 5 days		$ 460.00	
	Meals	$ 9,072.00	
Total Hotel/Meals costs		$22,643.52	
Add Tax and Service charges 20%		$ 4,528.70	
		$27,172.22	
Provision for Price increases 1978 at 29%		$ 7,879.94	
Sub Total for Hotel/Meal Costs			$35,052.16

(3) Other Costs

(a)	Conference Days Transportation @ 200/day		$1,000.00	
(b)	Support Staff			
	2 Secretaries @ 30	$300.00		
	Projectionist @ 20	$100.00		
(c)	Other Support 5 @ 20	$500.00	$ 900.00	
(d)	Clerical Costs (Postage, telephone, printing and copies etc.)		$3,000.00	
			$4,900.00	
(e)	Overhead Costs (to cover utilities and institutional facilities)		$1,200.00	
			$6,100.00	
	Provision for price increases @ 29%		$1,769.00	
	Sub Total for Other Costs			$7,869.00
(f)	Publication Costs		$4,500.00	

SUMMARY

Travel Costs	$108,815.24
Hotel rooms/meals	$ 35,052.16
Other charges	$ 7,869.00
Grand Total	$151,736.40

Say $ 152,000 + Costs for Publication
(Computerized typescipt ca.$4,500. for camera-ready publication)

ATTACHMENT B

The following reports shall be prepared and submitted to AID as started below:

(a) One hundred (100) copies of the conference publication; and

(b) Eight (8) copies of such other conference reports or statements as may be prepared, to be submitted to:

Dr. Nels Konnerup
Office of Agriculture
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

One copy of each report or publication shall be submitted to the Grant Officer whose name appears on the Grant and three (3) copies of each report or publication shall be submitted to:

The Documentation Coordinator
DS/RUI, Development Support Bureau
Agency for International Development
Washington, D.C. 20523

Vouchers: In each instance of voucher (SF 1034) submission made by the Grantee for payment hereunder, the following identification data will appear on the face of the voucher: Grant number, Project number, and Project office (DS/AGR/LV).

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

31 MAR 1978

Dr. James A. Henson
Director
International Laboratory for Research
on Animal Diseases (ILRAD)
P. O. Box 30709
Nairobi, Kenya

Subject: AID/DSAN-G-0012
PIO/T: 931-1155-3188791
Technical Office: DS/AGR/L

Dear Dr. Henson:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." or "Grantor") hereby grants to the International Laboratory for Research on Animal Diseases (hereinafter referred to as "ILRAD" or "Grantee") the sum of Thirty Thousand Dollars ($30,000) to provide partial support for a conference on In-Vitro Cell Culture Techniques to Health and Economy in Developing Nations as more fully described in the attachment to this Grant entitled "Program Description."

This Grant is effective and obligation is made as of March 31, 1978 and shall apply to commitments made by the Grantee in furtherance of the program objectives during the period March 31, 1978 through December 31, 1978.

This Grant is made to ILRAD on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment A entitled "Program Description" and Attachment B entitled "Standard Provisions."

Please sign the original and seven (7) copies of this letter to acknowledge your acceptance of the conditions under which these funds

CERTIFIED A TRUE COPY THIS
1st DAY OF August 78
BY Wanda Hinton

have been granted. Please return the original and six (6) copies of this Grant to the Office of Contract Management.

Sincerely yours,

Morton Darvin
Grant Officer
Agriculture/Nutrition Branch
Central Operations Division
Office of Contract Management

Attachments:

A. Program Description
B. Standard Provisions

ACCEPTED:

INTERNATIONAL LABORATORY FOR RESEARCH
ON ANIMAL DISEASES

BY: James B Kerr
DIRECTOR

TITLE: ILRAD, P. O. Box 30709, NAIROBI, KENYA

DATE: 2/5/78

Attachment A

PROGRAM DESCRIPTION

A. Purpose of Grant:

The purpose of this Grant is to provide partial support for a conference in In-Vitro Cell Culture Techniques to Health and Economy in Developing Nations.

B. Specific Objectives:

The specific objectives of this Grant are listed in Attachment A-1 entitled "Conference of In-Vitro Cell Culture Techniques to Health and Economy in Developing Nations at ILRAD."

C. Implementation:

To achieve the specific objectives, the Grantee shall carry out the activities listed in Attachment A-1 with funds provided by this Grant.

D. Reporting:

The following reports shall be prepared and submitted to AID as stated below:

(a) One hundred (100) copies of the conference publications; and

(b) Eight (8) copies of such other conference reports or statements as may be prepared, to be submitted to:

Dr. Nels Konnerup
Office of Agriculture
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

One copy of each report of publication shall be submitted to the Grant Officer whose name appears on the Grant and three (3) copies of each report or publication shall be submitted to:

The Documentation Coordinator
DS/RUI, Development Support Bureau
Agency for International Development
Washington, D.C. 20523

E. Budget:

The funds herein shall be used to finance only the asterisked line items listed below. AID funds may not be used to finance any other line items.

*Travel	$108,815.24
Per Diem	35,052.16
*Local Travel	1,000.00
*Salaries	900.00
Other Direct Costs	4,769.00
Overhead	1,200.00
*Publication Costs	4,500.00
Total	$156,236.40

The Grantee's expenditures charged against AID's contribution may not exceed $30,000. However, adjustments within that total amount may be made among asterisked line items without restriction. It is understood and agreed that the remaining $126,236.40 is expected to be provided by other donors.

F. Special Provisions:

1. The following provisions of Attachment B to the Grant are not applicable:

5A and 5B-Negotiated Overhead Rates
6 - Limitation of Funds
7A - Payment - Federal Reserve Letter of Credit
7C - Payment - Reimbursement
9 - Ocean Shipment of Goods
11 - Government Furnished Excess Personal Property
12A, 12B, 12C - Title To and Care of Property

2. Vouchers

In each instance of voucher (SF 1034) submission made by the Grantee for payment hereunder, the following identification data will appear on the face of the voucher: Grant number, Project number, and Project office (DS/AGR/LV).

Program Description — ATTACHMENT A 1

CONFERENCE OF IN-VITRO CELL CULTURE TECHNIQUES TO HEALTH AND ECONOMY IN DEVELOPING NATIONS AT ILRAD

(An Educational Programme Endorsed by The Tissue Culture Association)

INTERNATIONAL LABORATORY FOR RESEARCH ON ANIMAL DISEASES
(ILRAD) P.O. Box 30709, Nairobi, Kenya
24 - 31 August 1978

Director:	Dr. James A. Henson,	ILRAD, P.O. Box 30709, Nairobi
Conference Chairmen:	Dr. Karl Maramorosch,	Waksman Institute of Microbiology, Rutgers University, New Brunswick, N.J. 08903, U.S.A.
	Dr. Hiroyuki Hirumi	ILRAD, P.O. Box 30709, Nairobi Kenya.

Local Committee: Dr. H. Hirumi (Chairman), Dr. T.J. Kurtti (Secretary), Mr. M. Mitoko (Treasurer), Mr. R. Nelson (Laboratory Preparation), Mr. J.G.R. Ocama (Slide Projection), Mr. K. Nuguli (Lodging & Transportation), Mrs. K. Hirumi (Reception)

I. OBJECTIVES

1. To establish a strong link between the tissue culture communities in advanced nations and those in developing nations.
2. To transfer well standardized modern tissue culture technology to the developing nations where the applications of such technology are of great potential benefit to their health and economy.
3. To identify the problems which are presently constricting the health and economy in developing nations but which can be improved by the applications of modern tissue culture technology.
4. To initiate a strong effort to develop productive tissue culture communities within developing nations.

5. To develop research and training programmes in solving the problems with the collaboration of leading scientists in advanced nations and scientists from afflicted regions.

II. RATIONALE

In vitro technology has made great advances during the past two decades. Well standardized tissue culture techniques are now available in diverse areas of bioscience and agriculture, and have been successfully applied for the diagnosis of parasitic, viral and hereditary diseases of man, of animals, and of plants, and biological control of insect pests, to mention just a few, in advanced nations.

Scientific communities of many developing nations have not yet been fully exposed to these modern developments and applications of in vitro technology. A number of problems that are presently constricting the health and economy can be greatly and rapidly improved as the modern technology become readily available in these communities.

Although some good laboratories are currently using tissue culture techniques for the diagnosis of human and animal pathogens and the production of vaccines, the number and the geographical distribution of such laboratories are extremely limited.

Overall status of the effective applications of modern tissue culture techniques in developing nations is far, at least 10 years, behind from that in many advanced countries and the situation is very unsatisfactory.

The lack of efficient tissue culture activities in these scientific communities has hindered rapid progress in solving of the major problems existing in the developing nations. This is due to the extreme shortage of well informed, qualified scientists and highly reliable technologists in tissue culture. Adequate facilities and various supplies needed for tissue culture work are also hardly available in most sectors of the scientific communities.

For example, the unavailability of adequate in vitro systems to cultivate pathogens of the six major tropical diseases has been accounted for one of the major factors that have hindered the development of effective control measures against these important diseases in the tropical areas.

Recent success in establishing the in vitro culture system of animal-infective African trypanosomes is of great encouragement and strongly indicates that a certain breakthrough can be made even in a developing nation if the modern technology is efficiently employed. This is, however, a very limited case. In order to overcome the problems in various other fields, it is indispensable to make major efforts and strong campaigns on the effective utiliza ion of well standardized modern tissue culture technology within developing nations.

On the other hand, it is also true that a number of leading scientists who have extensive knowledge and skills in modern tissue culture technology have not been well informed and are possibly unaware of the existence of the problems in various developing nations, particularly in the tropical and semi-tropical areas.

It is, therefore, important to establish a strong link between the scientific communities in which the experts and the technology are presently available and the communities in which the problems are existing but lacking the experts and facilities.

In order to make effective progress, various approaches listed below should be made.

1. To hold an extensive Introductory conference on the applications of modern tissue culture technology (as described in this proposal).
2. To hold a series of specific problem-oriented workshops (similar to the workshops on major tropical diseases held by WHO).
3. To conduct a series of extensive technical training courses in developing nations (similar to the WHO immunology training courses.

4. To develop long-term research projects in specific problem areas (i.e. recent establishment of ILRAD).

These efforts will not conflict but will strongly supplement each other. Since the field of tissue culture in the most scientific communities in developing nations is presently very immature, any single effort mentioned above would not achieve its objectives if the efforts were made in a disorganized way. At present it is important to develop strong and efficient tissue culture communities in various disciplines.

We therefore propose here to hold an extensive introductory conference in Nairobi, Kenya as a major initial step and hope that the conference will be followed by a number of workshops, training courses and long-term research projects.

III. DESIGN

1. Participants

1.1 Experts from advanced nations

Forty possible participants have been selected from various disciplines (8 countries) based on suggestions made by a number of internationally leading scientists.

Of the 40 individuals, 14 have indicated to date their interest in participating in the conference. (Official contacts with all suggested participants have not yet been made.)

The final selection (about 26 participants) shall be made based on the individual interest and availability, geographical distribution, and topics relevant to the conference.

The selected participants are expected to be outstanding experts in their own field, to have extensive knowledge and experience in the specific field and the potential for developing future research and/or training programmes with the collaboration of scientists from afflicted regions.

1.2 Participants from Developing Nations

About forty to fifty participants, depending on the funds

available, from afflicted regions in developing nations are expected to attend the conference.

The participants should be scientists presently engaged in active research work. The selected participants should have a strong interest in the application of modern tissue culture technology, at least, as a discipline presented at this conference. Preferably they should have the capability to transfer the information obtained from the conference to their colleagues in different disciplines.

The selection shall be made with the consideration of geographical distribution in developing nations. If funds are limited the emphasis shall be focused on African nations.

2. Place and Time

ILRAD, that has been established recently by the Consultative Group on International Agricultural Research, which is in Nairobi, Kenya, will host the conference and is ideally suited for this purpose.

Nairobi is the seat of several international scientific institutes and the local committee, consisting of ILRAD staff members, will actively encourage participation in the sessions by younger scientists, whose participation is very much desirable in this endeavour.

ILRAD's new facilities, including the conference room and fully equiped cell culture laboratories, will be utilized.

The time for the conference has been chosen so as not to conflict with most university schedules and to fall during a period best suited climatically for holding the conference (24-31 August, 1978).

3. Lecture, Laboratory Demonstration and Round Table Discussion

Morning:	09.00 - 12.00	Lectures
Afternoon:	13.30 - 17.00	Laboratory Demonstration and Round Table Discussion
Evening:	20.00 - 21.30	Lecture

All lectures will emphasize the practical applications of well standardized methodology on selected topics in

diverse areas of medical, veterinary and agricultural sciences.

In order to achieve the desired effect, the conference will consist not only of formal lecture periods but also of laboratory demonstration where selected practical methodology will be shown.

The laboratory demonstration will be followed by Round Table Discussion in order to facilitate informal discussion. Two - three different topics will be offered every afternoon for the Laboratory Demonstration and the Round Table Discussion. Participants shall made their own choice on the topic.

Informal discussion on the technical aspects as well as the problem areas existing in the afflicted regions shall be made at the Round Table Discussion.

Further informal discussion can be also made during the lunch time. All participants will have lunch together at the ILRAD dining facilities.

4. Lodging and Transportation

All participants, except residents of Nairobi, will stay at the same hotel (if enough accommodation is available).

Transportation from the airport to the hotel as well as that between the hotel and ILRAD will be provided.

IV. PUBLICATION

The proceedings of this conference will be edited by K. Maramorosch and H. Hirumi, with the assistance of staff members from ILRAD, and published by the camera-ready process shortly after the conference.

The publication will be in the form of a "Handbook of Practical Tissue Culture Applications", providing complete step-by-step methodology.

The camera-ready process will assure prompt publication and lower the cost of the handbook. Academic Press, New York, has expressed strong positive interest in publishing this volume.

V. FUNDINGS

The total cost of the conference will include the cost of

plane tickets, local transportation, hotels and meals (one week for each participant), as well as the cost for the Laboratory Demonstrations, phones, postages, clerical help and printing of programme expenses.

Applications for supporting funds will be made to NIH, NSF, AID-State Department, ODM, Rockefeller Foundation and WHO/FAO. Possible additional sources of support considered at this time include the German, Canadian, Danish and The Netherland government agencies that might be willing to help.

VI. ATTACHED

1. Tentative Programme and Suggested Speakers
2. List of Suggested Conference Speakers

1. Tentative Programme and Suggested Speakers

CONFERENCE OF IN-VITRO CELL CULTURE TECHNIQUES TO HEALTH AND ECONOMY IN DEVELOPING NATIONS AT ILRAD

TENTATIVE PROGRAMME

I.	Opening Address	J.A. Henson*
II.	Introduction to In Vitro Techniques.	Chairmen: K.R. Porter & P.A**
	1. Plan for Tissue Culture Laboratories	V.P. Perry*
	2. Sterile Techniques and Culture Media	M.K. Patterson and/or S.G. Bradley
	3. Cultivation of Vertebrate Cells	L.R. Murrell* or W.H.J. Douglas
	4. Cultivation of Invertebrate Cells	H. Hirumi*
	5. Cultivation of Plant Cells	T. Murashige*
	6. Cryo-preservation of Cultured Cells	V.P. Perry* and M.W. Vincent*
III.	Applications of In Vitro Techniques	
	A. Vertebrate Cell Systems	Chairmen: L.R. Murrell* & P.B**
	1. Isolation and Identification of Human Viruses	W. Henle
	2. Isolation and Identification of Animal Viruses	H.L. Bachrach or S.S. Breese Jr.

* Speakers who have agreed to participate in the Conference

** Co-Chairmen (P.A - P.F) will be selected from the invited participants from African nations

V. Laboratory Demonstrations (Workshop) Co-ordinator: H. Hirumi*

1. Sterile Techniques and Preparation of Culture Media	M.K. Patterson and/or S.G. Bradley
2. Vertebrate Cell Culture	L.R. Murrell* or W.H.J. Douglas
3. Plant Cell Culture	T. Murashige*
4. Identification and Isolation of Viruses	H.L. Bachrach or S.S. Breese, Jr.
5. Diagnosis of Human and Animal Sex	S. Fedoroff*
6. ZL-A Typing	K.W. Sell
7. Immunologic Assays for Antigenic Variants	G. Roelants*
8. In Vitro Propagation of Parasites	W. Trager, H. Hirumi* J.J. Doyle* and/or D. Brown*
9. In Vitro Assays for Drugs	G. Streissle*
10. Cryo-preservation of Cultured Cells	M.W. Vincent* and/or L.P. Perry*

VI. Closing Remarks — K. Maramorosch*

2. List of Suggested Conference Speakers

CONFERENCE SPEAKERS

Dr. H.L. BACHRACH	Plum Island Animal Disease Lab., ARS, USDA, Greenport, N.Y. U.S.A.	(IIIA2, V4)
Dr. S.G. BRADLEY	Dept. of Microbiology, Virginia Commonwealth University, Richmond Virginia 23298, U.S.A.	(II2, V1)
Dr. S.S. BREESE, Jr.	Plum Island Animal Disease Lab., ARS, USDA, Greenport, N.Y. U.S.A.	(IIIA2, V4)
Dr. D. BROWN*	East African Veterinary Research Organization, Muguga, Kenya	(IIIB3, V8)
Dr. A.E. BUTTERWORTH*	Wellcome Trust Research Lab., Kenyatta National Hospital, Nairobi, Kenya (1978: Harvard Univ., Combridge, Ma. U.S.A.)	(IIIB4)
Dr. J. CASALS	Dept. of Epidemiology, School of Medicine, Yale Arbovirus Res. Unit, 60 College St., New Haven, Conn. 06510.	(IIID1)
Dr. W.H.J. DOUGLAS	W. Alton Jones Cell Science Center, P.O.Box 631, Lake Placid, N.Y. 12946, U.S.A.	(II3, V2)
Dr. J.J. DOYLE*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(IIIB3, IIIB6, V8)
Dr. S. FEDOROFF*	Dept. of Anatomy, Univ. of Saskatchewan, Saskatoon, S7N OWO, Canada	(IIIA3, V5)
Dr. W. HENLE	The Joseph Stockes Jr. Res. Inst. The Children's Hospital of Philadelphia, 34th St. & Civic Center Blvd., Philadelphia, Pa. 10104, U.S.A.	(IIA1, V4)
Dr. J.A. HENSON*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(I, IV)
Dr. H. HIRUMI*	ILRAD, P.O. Box 30709, Nairobi, Kenya	(II4, IIIB2, V8)
Dr. E.H. LENNETTE	Calif. State Dept. Health Virus Lab., 2151 Berkeley Way, Berkeley, Calif. 94704, U.S.A.	(IV 1)

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* Speakers who have agreed to participate in the Conference

3.	Diagnosis of Human Hereditary Diseases - (a) Chromosomal Anomaly	S. Fedoroff*
4.	Diagnosis of Human Hereditary Diseases - (b) HL-A Typing	K.W. Sell
5.	Immunologic Assays for Malnutrition	E. Stelhm*
6.	Early Diagnosis of Human and Animal Sex	S. Fedoroff*
7.	In Vitro Assays for Drugs	G. Streissle*

B. In Vitro Systems for Parasites. Chairmen: J.A. Pino & P.C**

1.	Propagation of Malaria Parasites	W. Trager and/or V.P. Perry*
2.	Propagation of Salivarian Trypanosomes	H. Hirumi* and J.J. Doyle*
3.	Propagation of Theileria Parasites	D. Brown* and H. Hirumi*
4.	Propagation of Schistosomes	A.E. Butterworth*
5.	Possible Applications to Vaccine Production	W. Trager
6.	Immunologic Assays for Antigenic Variants	G. Roelants* and J.J. Doyle*

C. Plant Cell Systems. Chairmen: K. Maramorosch* & P.D**

1.	Propagation of Pathogen-Free Crops	T. Murashige*
2.	Propagation of New Varieties	L.G. Nickell
3.	Applications to Breeders	L.G. Nickell

D. Invertebrate Cell Systems. Chairmen: J.J.McKelvey & P.E**

1.	Isolation and Identification of Mosquito-borne Viruses	J. Casals or C.E. Yunker
2.	Isolation and Identification of Tick-borne Viruses and Rickettsiae	C.E. Yunker
3.	Biological Control of Insect Pests and Viruses	K. Maramorosch*

IV. Future Prospects. Chairmen: J.A. Henson* & P.F**

1.	Medical Science	K.R. Porter and E.H. Lennette
2.	Veterinary Science	J.A. Pino
3.	Agricultural Science	K. Maramorosch*
4.	Entomological Ramifications	J.J. McKelvey, Jr.