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MULTINATIONAL PROGRAM FOR RESEARCH IN  
HUMAN REPRODUCTION IN LATIN AMERICA

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MULTINATIONAL PROGRAM FOR RESEARCH IN HUMAN REPRODUCTION  
IN LATIN AMERICA\*

Since 1967 research training activities in human reproduction have been carried out by several university groups in Argentina, Uruguay and Chile. In order to accomplish this, eleven centers from four universities decided to combine their potential in terms of human resources and physical facilities in order to provide Latin American trainees with the necessary knowledge and experience in human reproduction and to introduce them into research by working on original research projects.

The original program, known as the Three-Nations Program could accommodate only eight fellows per year for training. On the other hand, a thorough survey of Latin American medical schools established a figure of 375 trained persons in human reproduction as the minimum necessary for Latin America.

With this in mind, the interested institutes have submitted a proposal aimed at: (1) increasing the number of trainees; (2) diversifying the available human resources by providing different types of training, and (3) by establishing a continental strategy oriented to develop the necessary human resources in reproductive biology for Latin America.

This proposal would establish the Curso Latinoamericano de Biología de la Reproducción - CLABIR - which will focus on basic and applied biomedical aspects of human reproduction. The orientation will be: (1) to improve human reproduction; (2) to regulate human fertility, and (3) to study the biological aspects of contraceptives and to develop new ones.

Attached is a document outlining the proposal and plan for the development of the research and research training activities designed to achieve the proposed objectives.

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\*Prepared by Dr. Richard A. Prindle, Department of Population Dynamics, Pan American Health Organization, Washington, D.C.

# **CURSO LATINOAMERICANO DE BIOLOGIA DE LA REPRODUCCION**

## **COMITE CENTRAL**

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R. MANCINI - ARGENTINA

C. GOMEZ ROGERS - CHILE

M. REQUENA - CHILE

J. ROSNER - ARGENTINA

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PROPOSAL FOR EXPANSION OF THE RESEARCH AND  
TRAINING PROGRAMME OF CENTRO LATINOAMERICANO  
DE BIOLOGIA DE LA REPRODUCCION (CLABIR)



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### I. BACKGROUND;

Since 1967 joined research training activities in Human Reproduction have been started by several university groups of Argentina, Uruguay and Chile. For this purpose, eleven Centres from four Universities decided to combine their potentials in human resources and physical facilities in order to, first provide Latin American trainees with the necessary knowledge and training in Human Reproduction and later, introduce them into research by working in original research projects.

An objective appraisal of the interest and response of Latin America to the necessity of increasing human resources in Human Reproduction is shown by the number of applicants and the wide distribution of their countries of origin ( Fig. 1 & 2; Table 1 ).

Unfortunately, mainly on account of financial reasons, not more than eight fellows per year could be trained, which obviously is a very low figure.

Furthermore, the necessities of human resources in Human Reproduction in Latin American Medical Schools were established through a survey which yielded a minimum figure of 375.

The experience achieved and the prospective studies point out three main tracks of action:

- 1) To increase the number of trainees.
- 2) To diversify the available human resources by giving different types of training.
- 3) To utilize in a more rational basis the human potentials by establishing a continental strategy oriented to achieve rapidly a critical mass.



Fig. 1:

NUMBER OF APPLICANTS TO THE THREE NATIONS PROGRAMME  
IN REPRODUCTIVE BIOLOGY

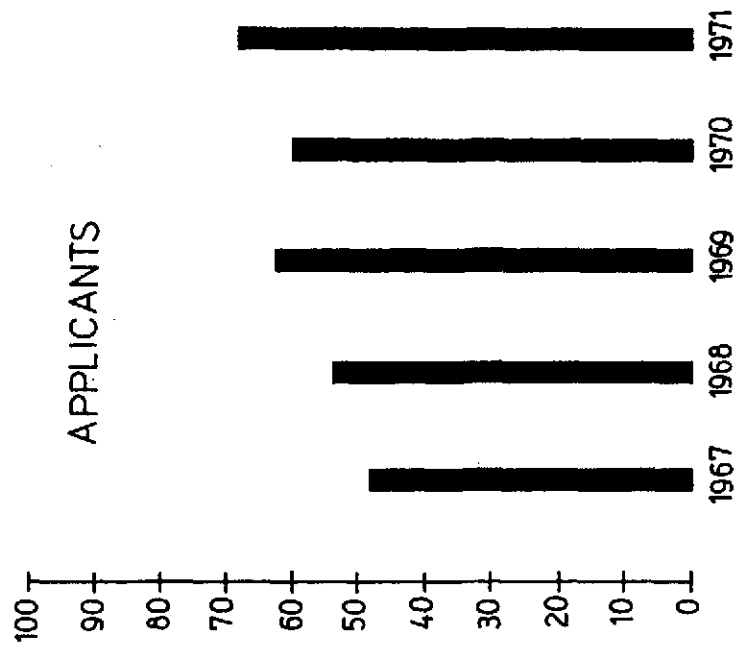
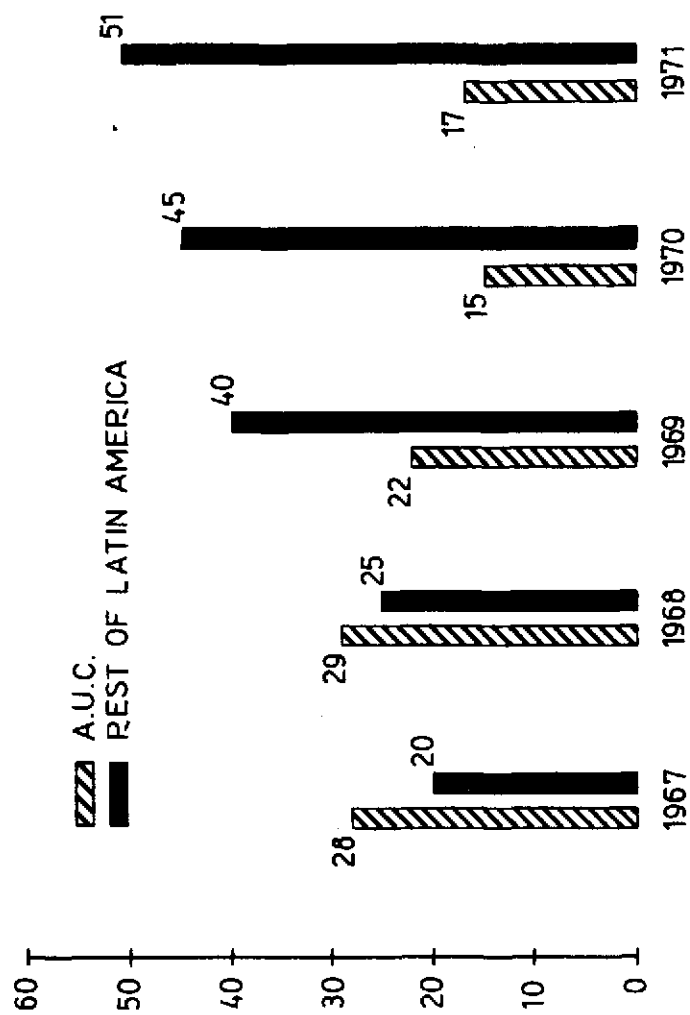


Fig. 2:

REGIONAL DISTRIBUTION OF APPLICANTS (A.U.C.: ARGENTINA, URUGUAY and CHILE)

REGIONAL DISTRIBUTION OF APPLICANTS



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Table I:Applicant's Countries to the Three Nations Programme in Reproductive  
Biology ( 1967-1971 ):

Argentina

Bolivia

Brazil

Chile

Colombia

Costa Rica

Dominican Republic

Ecuador

El Salvador

Guatemala

Haití

Honduras

Mexico

Nicaragua

Panamá

Paraguay

Perú

Uruguay

Venezuela

S.

**UNIVERSIDAD DEL SALVADOR****INSTITUTO LATINOAMERICANO DE FISILOGIA DE LA REPRODUCCION  
ILAFIR**

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**II. OBJECTIVES:**

To reinforce and expand the Three Nations Programme activities in Research Training and Research in Human Reproduction, contributing in this way to develop these activities in Latin America by the reinforcement of existing centres and the creation of new ones.

As a fundamental objective, the Centro Latinoamericano de Biología de la Reproducción ( CLABIR ) will perform and stimulate Research Training and Research on problems of Human Reproduction, focusing integrally in basic and applied biomedical aspects.

The ultimate orientation will be:

- 1) To improve Human Reproduction.
- 2) To regulate Human Fertility.
- 3) To study the biological aspects of contraceptives and the development of new ones.



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**III. PROPOSED PLAN :**

To achieve the proposed objectives in the most rapid and efficient way, the following strategy should be followed:

- 1.1 To reinforce and expand the Three Nations Programme.
- 1.2 To carry out and keep up-dated a regional inventory of human and material resources.

These two actions are indispensable to permit the Research and Training Centre perform the following functions:

- 2.1 RESEARCH TRAINING.
  - 2.1.1 To increase substantially the number of trainees and diversify the Research Training Programmes.
  - 2.1.2 To identify potentials leading to the development of new Research Training Programmes in other regions of Latin America.
- 2.2 RESEARCH.
  - 2.2.1 To expand and develop new research lines.
  - 2.2.2 To increase interinstitutional collaborative Research projects.
  - 2.2.3 To identify potentials and to help the development of Research in other Latin American Centres.

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- 2.3                    SERVICES.
- 2.3.1                To undertake special scientific problems established by the task force.
- 2.3.2                To be a link between different Collaborating Clinical Centres.
- 2.3.3                To organize regional workshops and symposia.
- 2.3.4                To act as regional documentation centre.
- 2.3.5                To act as advisors to other Latin American Centres.



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### 1.1 To Reinforce and Expand the Three Nations Programme:

It is the principle means through which the before mentioned objectives can be attained, as shown in the following items.

### 1.2 To Carry Out and Keep Up-Dated a Regional Inventory of Human and Material Resources:

The Inventory will cover:

- a) Human Resources.
- b) Physical Facilities.
- c) Major Pieces of Equipment.
- d) Main Lines of Research and Training.
- e) Available Technology.
- f) Administration.
- g) Library Facilities.

It will be started simultaneously in the following areas:

AREA I: VENEZUELA, French Antilles, French Guyanne, Dutch Antilles, Trinidad and Tobago, British Antilles, West Indies.

AREA II: MEXICO, Cuba, Dominican Republic and Haiti.

AREA III: GUATEMALA, British Honduras, Costa Rica, El Salvador, Honduras, Nicaragua and Panama.

AREA IV: PERU, Bolivia, Colombia and Ecuador.

AREA V: BRAZIL.

AREA VI: ARGENTINA, Chile, Paraguay and Uruguay.

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## 2.1 RESEARCH TRAINING.

### 2.1.1 To Increase Substantially the Number of Trainees and Diversify the Research Training Programmes.

According to the present pattern, the Three Nations Programme would train forty trainees in five years. With the present Research Training project, it will be possible to train one hundred and ninety trainees in the same period of time.

The increase in the number of trainees will be part of a strategy resulting from:

- a) our present information about Latin American necessities and potentials,
- b) the conclusions of WHO's site visits, and
- c) the updated information provided by an inventory.

The main strategy of the Research Training will consist in selecting trainees from areas and centres where definite potentials for multiplier effects have been previously identified. Areas where there are no facilities at present will also be considered, in order to build up an effective critical mass.

Not only will the number of trainees be increased in a 375%, but also a diversified approach to training will be followed to cover different academic levels and necessities ( Fig. 3 ).

## PROJECT A - ( Appendix I ).

Twelve fellows will be trained for two years. During the first five months, they will be exposed to a rotatory intensive training consisting of seminars and laboratory work, through the five Institutes that make up CLABIR. After concluding this period, they will work on research during nineteen months in one of the Institutes, under a tutorial basis.



FIG. 3:

# RESEARCH TRAINING PROGRAMME OF C.L.A.B.I.R.

## PROGRAMME

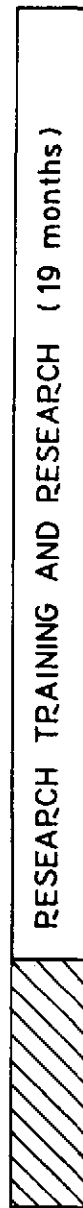
### Basic Course in Biology of Reproduction

(Seminars and Laboratory work)

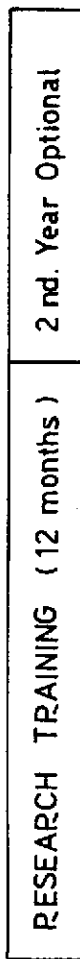
NUMBER OF TRAINEES  
ADMITTED PER YEAR

5 Months

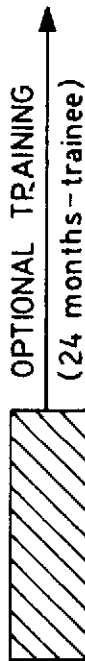
A) 12



B) 18



C) 8



D) 20



0 5 8 17 24 MONTHS

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The best trainees will have the opportunity of applying for a Ph.D. degree in Human Reproduction, granted by the University del Salvador ( Argentina ).

Group A will become the élite of the Research Training Centre's trainees, owing to the intensive training in Human Reproduction plus the experience in original research.

Sixty fellows will be trained in five years, this Programme having the first priority.

### PROJECT B.

In Latin America there is a large number of individuals who either have had previous training in Human Reproduction or need to be trained in one specific research area in relation with the main lines of research being developed in CLABIR. Up to the present time, this specific type of training has not been covered.

Under project B, eighteen fellows will be trained during one year, working in an original research project. The best trainees will be allowed to stay for one additional year.

Ninety fellows will be thus trained in five years, this Programme having second priority.

### PROJECT C.

It will be carried out with people having a more advanced level in their academic and clinical careers, who are aware of the importance of improving substantially their knowledge and training in Human Reproduction, but who cannot abandon their positions for a long period of time.



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They will receive the same intensive training of group A, plus a selective training in some area that might be especially useful to them, with emphasis in acquiring the necessary technology.

Forty fellows will be trained in five years, Programme C having the third priority.

### PROJECT D.

In order to obtain in the immediate future a change in the pattern of thought concerning Reproduction, it is necessary to train the faculties of the Latin American Medical Schools, who make up the top of the pyramid of the medical profession ( Appendix II ).

Through this Programme, twenty professors will be trained during six weeks.

The emphasis of the Programme will lie on the supply of information and on the transmission of new teaching techniques. A programme of continuous education, consisting mainly in scientific advice and exchange, will also be established.

This project, sponsored by the PAHO, covers five years and was launched in 1970.

One hundred professors will go through this Programme in five years.

#### 2.1.2 To Identify Potentials Leading to the Development of New Research Training Programmes in Other Regions of Latin America.

Through the inventory, it will be possible to identify on a permanent basis the potentials that will enable the reinforcement of the existing centres and the development of new ones.

When critical mass of human power and physical facilities is reached, it will be possible to start new Programmes in Human Reproduction with the logical multiplier effect in the number of trained personnel. The emphasis

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of this programme should be established in relation with the data provided by the inventory.

Whenever necessary, an advisor could be sent to help in the organisation and development of a new Programme.

The Research Training Centre will assist, advise and implement these Programmes when so required. It can also accept fellows proposed by these centres to receive a deeper and more specific training.

### 2.2. RESEARCH.

#### 2.2.1 To Expand and Develop New Research Lines ( Appendix III ).

A- Reinforcement of the present lines of research.

B- Development of new lines.

#### 2.2.2 To Increase Interinstitutional Collaborative Research Projects.

Interinstitutional research will be developed at two different levels:

- a) Intramural, by increasing the number of research projects among the CLABIR Institutions, and
- b) Extramural, by the Research Training Centre assistance in the development of collaborative research among institutions outside CLABIR, by means of advice in regard to experimental design, technology, implementation, help in obtaining financial support, etc.

The sponsoring and organisation of lectures, workshops and symposia by the Research Training Centre will contribute in a substantial way to the development of the Collaborative Research Project.





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### 2.2.3 To Identify Potentials to Help the Development of Research in Other Latin American Centres.

By means of the data provided by the inventory, it will be possible to establish a rational basis for the development of new research projects.

There is an intimate relationship between Research Training and Research, for both activities will be carried out by the same people. It is probable that Research should be started earlier, since it generally requires less manpower, space and general coordination. The Research Training Centre will collaborate in selecting the fellows, training and advising them on scientific and financial matters.

### 2.3 SERVICES.

#### 2.3.1 To Undertake Special Scientific Problems Established by the Task Force.

After a specific problem in Human Reproduction has been identified by the task force, and when related to CLABIR research activities, the Research Training Centre will a) carry out a research project concerning the problem and b) assist and coordinate the clinical research performed by the Collaborating Clinical Centre of the area.

The Research Training Centre will evaluate the results and establish a feedback in collaboration with the task force.

#### 2.3.2 To be a Link between the Collaborating Clinical Centre.

The Research Training Centre will be related to the Collaborating Clinical Centres on a two-fold basis:

- a) As a part of the global coordination centralised by the task force, and
- b) As a regional head for basic and/or clinical problems in Human Reproduction in Latin America.

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The assistance will consist mainly of:

- a) Identification of problems.
- b) Experimental design.
- c) Development of research.
- d) Acting as statistical headquarters for the Collaborating Clinical Centres, and
- e) Evaluation of the results obtained.

### 2.3.3 To Organise Regional Workshops and Symposia.

Workshops and symposia complement each other.

- a) Workshops will provide the opportunity of gathering a limited number of specialists from the area and outside it, to discuss informally and intensively a pre-established subject on Human Reproduction.

Three different types of participants will be invited:

- 1) Guest speakers,
- 2) A group that will have limited participation in the debates, and
- 3) A group invited to attend the meetings, not taking part in the discussion

Workshops will achieve some or all of the following goals:

- a) Exchange of scientific information,
- b) Study of regional problems,
- c) Motivation for the development of research in the area,
- d) Updating of special subjects concerning Human Reproduction,
- e) Promotion of the collaborative research projects.

Workshops will be organised yearly. They will take place in areas where qualified research on that subject is performed, basically alternating Northern and Southern Latin American Countries.



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b) Symposia should have a wider audience, with the primary purpose of providing information in new aspects of Human Reproduction.

A few guest speakers will be invited to deliver lectures and to be chairmen of round-table discussions on selected topics. The attendance to the Meetings will be open to all those interested in Human Reproduction.

### 2.3.4 Act as Regional Documentation Centre.

It will complement WHO's International Documentation Centre in biomedical aspects of Human Reproduction and establish a permanent exchange.

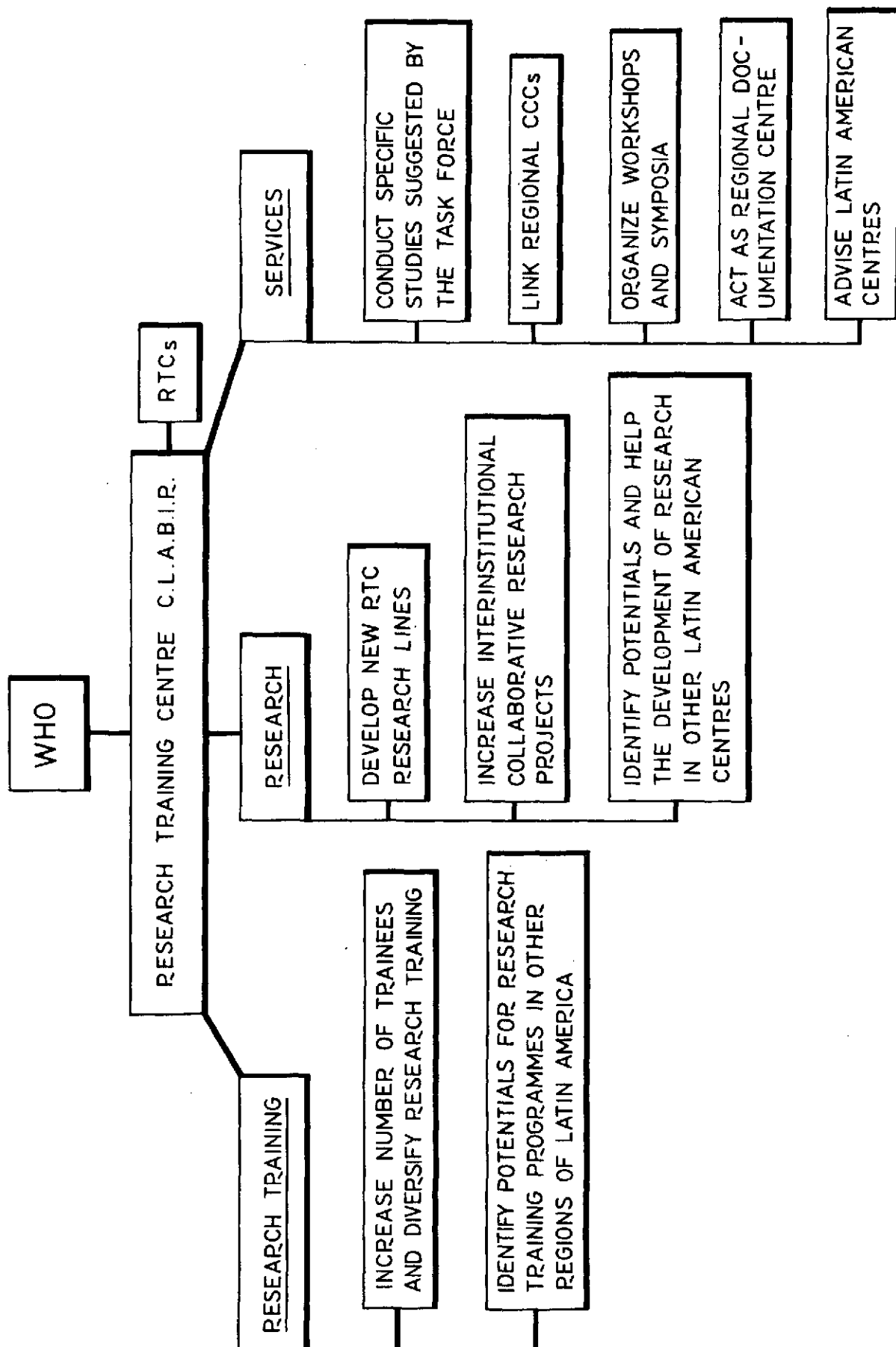
### 2.3.5 To Act as Advisor to Other Latin American Centres.

Apart from the functions described in 2.1.1 ( Research Training ) and in 2.2.1 ( Research ), the Research Training Centre will assist the scientists or institutions in the development of research proposals and participate in the review and recommendation of the applications for WHO support.

## 2.4 RELATIONS WITH WHO AND OTHER RESEARCH TRAINING CENTRES.

WHO : To advise WHO on all matters related to Human Reproduction, apart from the functions previously described.

OTHER RESEARCH TRAINING CENTRES: To participate in Collaborative Research Projects by the exchange of staff personnel, and information and teaching procedures on research training.



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IV. GOVERNMENT, ADVISORY BODIES AND ADMINISTRATION :

CLABIR will be governed by a Central Committee formed by the Director of each of the member Institutions :

Argentina :

<u>Name :</u>	<u>Affiliated with :</u>	<u>Director :</u>	<u>Address :</u>
ILAFIR	University del Salvador	J. M. Rosner.	C. C. 10 - San Miguel - B. A. Rep. Argentina.
CIR	University of Buenos Aires	R. Mancini.	Paraguay 2155 B. A. Rep. Argentina.
INB	Consejo Nacional de Investigaciones Científicas y Técnicas.	J. H. Tramezzani	Obligado 2490 B. A. Rep. Argentina.

Chile :

<u>Name :</u>	<u>Affiliated with :</u>	<u>Director :</u>	<u>Address :</u>
CEBRE	University of Chile.	C. Gómez Rogers	C. C. 6637 Sgo. de Chile.

Uruguay :

<u>Name :</u>	<u>Affiliated with :</u>	<u>Director :</u>	<u>Address :</u>
CLAP	Government of Uruguay	R. Caldeyro-Barcia	Av. Italia s/n Montevideo - Uruguay.



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The Central Committee will undertake the following functions and responsibilities :

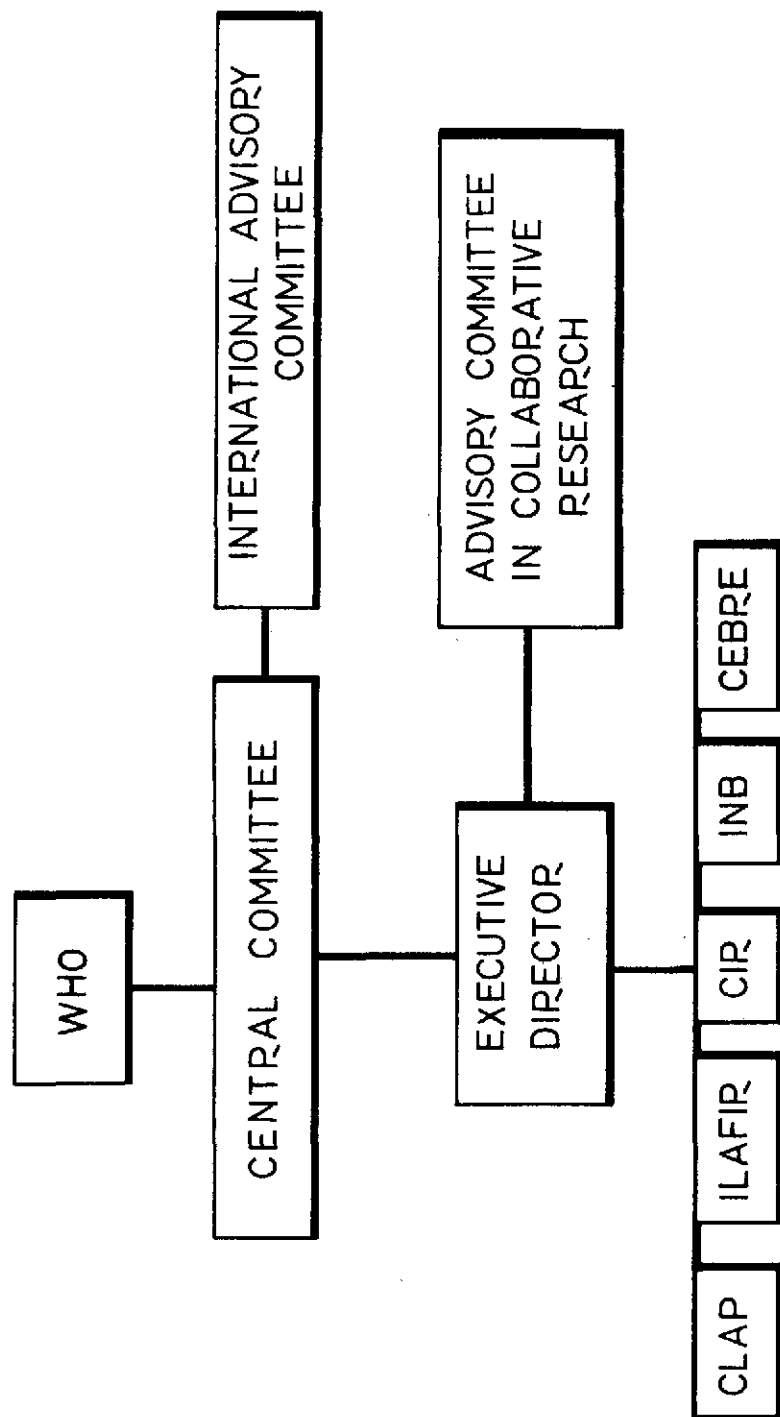
- To establish the General policy for the Research Training Centre in relation to Research Training and Research in accordance with WHO's policies.
- To identify potentials in Research Training and Research.
- To analyze and establish new Research Training Programmes.
- To make the final selection of the trainees.
- To help in the development of other centres in Latin America.
- To develop new research lines in the Research Training Centres and in the rest of Latin America.
- To increase interinstitutional collaborative projects.
- To plan the performance of the projects established by the task force.
- To coordinate the Collaborating Clinical Centres.
- To organize regional workshops and symposia.

### Executive Director and Central Office :

The policy established by the Central Committee will be implemented by an Executive Director. A Central Office will be established at ILAFIR, Av. Mitre 3100; C. C. 10; San Miguel, P.B.A. Argentina; Dr. Jorge M. Rosner will be in charge of the Executive Direction.

The Executive Director will have the following responsibilities :





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- To implement decisions of the Central Committee.
- To be a permanent link between the member Institutions.
- To make periodic evaluations of the Research Training Centre in each Institution and report them to the Central Committee.
- To administrate the Research Training Centre and to make an annual Research Training, Research and Financial report to WHO.
- To establish adequate connections with the different groups working in Reproduction in Latin America.
- To keep members of the Central Committee informed of the events and news of the Research Training Centre.
- To deal with all matters related to the previous items that may arise during the Research Training Centre Programme.

### V. EVALUATION.

The International Advisory Committee will be formed by:

- Dr. Alexander Kessler, Chief Human Reproduction Unit, WHO.
- Dr. Richard Prindle, Chief Department of Health and Population Dynamics, PAHO.
- Dr. Egon Dicsfaluzi, Director, WHO Research Training Centre, Stockholm, Sweden.
- Dr. Ann Southam, Scientific Advisor, Ford Foundation, New York, U.S.A.
- Dr. Joseph Zander, Prof. of Obstetrics and Gynecology, Munich, Germany.





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C. GOMEZ ROGERS - CHILE

M. REQUENA - CHILE

J. ROSNER - ARGENTINA

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- Dr. Philip Corfman, PhD, Director, Center of Population Research, National Institute of Child Health and Human Development, Bethesda, U.S.A.

Once a year, the Central Committee and the International Advisory Committee will meet at ILAFIR, Buenos Aires, to evaluate the total Programme and activities performed by CLABIR and report to WHO.

The International Advisory Committee will also cooperate in the planning of future activities of the Research Training Centre.

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The five Institutes that form CLABIR will contribute to the creation of a Research Training Centre as follows:

	Sq. Mts.	Perm. Equip.	Staff	Budget
CLAP	5.360	300.000	23 R 14 T	400.000
ILAFIR	2.100	250.000	16 R 13 T	200.000
CIR	2.400	200.000	27 R 10 T	150.000
INB	650	200.000	16 R 9 T	160.000
CEBRE	1.800	220.000	56 R 27 T	700.000
TOTAL	12.310 m <sup>2</sup>	1.170.000	138 R 73 T (Research)(Technicians)	1.610.000



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**VI. BUDGET :**

The Proposed Budget has been built up on a three-fold basis, which correspond to three different levels of management : Optimal, Medium and Low. Only the Optimal Level has been detailed. The detailed budget is available at the Human Reproduction Unit of the World Health Organization in Geneva, Switzerland.

## CLABIR

BUDGET SUMMARY

	Optimal		Medium		Low	
	1st.	2nd.	1st.	2nd.	1st.	2nd.
Administración	40, 0	40, 0	35, 0	35, 0	28, 0	28, 0
Training Grants	189, 0 (38F)	289, 9 (59F)	117, 0 (21F)	194, 0 (37F)	62, 0 (9F)	111, 0 (18F)
Personnel	153, 6	196, 8	100, 0	150, 0	75, 0	75, 0
Supplies	150, 0	200, 0	75, 0	100, 0	50, 0	50, 0
Permanent Equipment	270, 0	210, 0	280, 0	150, 0	140, 0	160, 0
Documentation	30, 0	30, 0	15, 0	15, 0	15, 0	15, 0
Construction and Renovation	100, 0	20, 0	50, 0	40, 0	-	-
Workshops and Symposia	40, 0	40, 0	35, 0	35, 0	28, 0	28, 0
Staff Travel and Visiting Professors	15, 0	15, 0	-	-	-	-
Inventory	47, 4	29, 4	47, 4	29, 4	47, 4	29, 4
TOTAL	1035, 0	1071, 1	754, 4	748, 4	445, 4	496, 4

Proposed Budget	Optimal			Medium			Low		
	3	4	5	3	4	5	3	4	5
YEAR									
Administración	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0
Training Grants	289, 9 (59F)	289, 9 (59F)	289, 9 (59F)	261, 0 (46F)	282, 1 (59F)	282, 1 (59F)	245, 0 (42F)	282, 1 (59F)	282, 1 (59F)
Personnel	196, 8	196, 8	200, 0	196, 8	200, 0	200, 0	200, 0	200, 0	200, 0
Supplies	200, 0	200, 0	200, 0	200, 0	200, 0	200, 0	200, 0	200, 0	200, 0
Permanent Equipment	80, 0	80, 0	-	130, 0	80, 0	-	260, 0	80, 0	-
Documentation	30, 0	30, 0	30, 0	30, 0	30, 0	30, 0	30, 0	30, 0	30, 0
Construction and Renovation	20, 0	20, 0	-	50, 0	20, 0	-	100, 0	20, 0	-
Workshops and Symposia	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0	40, 0
Staff Travel and Visiting Professors	15, 0	15, 0	15, 0	-	-	-	-	-	-
Inventory	29, 4	29, 4	29, 4	29, 4	29, 4	29, 4	29, 4	29, 4	29, 4
TOTAL	941, 1	941, 1	844, 3	977, 2	921, 5	821, 5	1144, 4	921, 5	821, 5

# FINAL TOTAL SUMMARY

YEAR	Optimal	Medium	Low
1st.	1035, 0	754, 4	445, 4
2nd.	1071, 1	748, 4	496, 4
3rd.	941, 1	977, 2	1144, 4
4th.	941, 1	921, 5	921, 5
5th.	844, 3	821, 5	821, 5
TOTAL	4832, 6	4223, 0	3829, 2

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## APPENDIX I

### Latin American Training Programme in Reproductive Biology.

## CURRICULUM

### 1) Buenos Aires - Argentina.

#### Instituto de Neurobiología.

Director: Dr. J.H. Tramezzani.

Duration: 2 weeks.

Biostatistics I.

Animal and experimental surgery.

Stereotaxic procedures.

Hypothalamic hypophyseal axis.

Neuroendocrine control of ovulation.

Neuroendocrine control of the lactation.

Pineal gland physiology.

#### Instituto Latinoamericano de Fisiología de la Reproducción ( ILAFIR ).

Director: Dr. J.M. Rosner

Duration: 4 weeks

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Physiology of the steroid hormones.  
 Mechanism of action of estrogens.  
 Drugs effects on the estradiol uptake by the uterus.  
 Adrenal, testicular and ovarian endocrine physiology.  
 Fetoplacental Unit.  
 Mechanism of Nidation.  
 Gas phase chromatography of steroids.  
 Clinical determination of steroids.  
 Environmental light and reproduction.

## Centro de Investigaciones en Reproducción ( CIR ).

Director: Dr. R. Mancini

Duration: 3 weeks.

Histophysiology of the testis.  
 Metabolism of the testis.  
 Effects of the gonadotrophins on the testis.  
 Histophysiology of the epididymis, seminal vesicles and prostate.  
 Immunology of the testis.  
 Cytogenetics.

## 2) Santiago - Chile.

## Centro de Estudios en Biología de la Reproducción ( CEBRE ).

Director: Dr. C. Gómez Rogers.

Duration: 6 weeks.





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Morphophysiology of the human female reproductive organs.  
 Induced changes in the female reproductive organs by agents that inhibit fertility.  
 IUD Physiology.  
 Oral contraceptives.  
 Intrauterine instillations in the control of fertility.  
 Family planning.  
 Effects of the family planning programmes.

### 3) Montevideo - Uruguay.

Centro Latinoamericano de Perinatología y Desarrollo Humano ( CLAP ).

Director: Dr. R. Caldeyro-Barcia.

Duration: 5 weeks.

Amniotic pressure recording in the human female.  
 Human uterine contractility during pregnancy and labor in normal and pathological conditions.  
 Fetal distress.  
 Blood circulation in human fetuses with special reference to the heart frequency recording.  
 Acid base equilibrium in mother and fetus.  
 Feto-maternal intensive care.  
 Infantile and maternal assistance in Latin America.

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APPENDIX II

LATIN AMERICAN SEMINAR IN HUMAN REPRODUCTION

ADVANCES IN TEACHING AND RESEARCH



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### I- INTRODUCTION :

Family planning and population problems are present in every Latin American Country. To achieve sound results exist the following four main difficulties :

1. - Attitudes.
2. - Information.
3. - Time.
4. - Number of well trained people.

No existing project covers the four above mentioned points with an adequate approach to obtain efficient solutions in a way and a time properly related to the urgency of the problem.

A- There are several training courses to prepare medical and paramedical personnel to practice family planning. These courses are necessary indeed but they are mainly dedicated to a kind of persons that will not make policy and therefore the number of them needed to reach a "critical mass" is very high and the available time too short.

B- The Latin American Training Course in Reproductive Biology ( Three Nations ) whose purpose is to form researchers is indispensable to develop original ideas and proper policies for Latin America but offers no immediate solutions.

C- The top of the pyramid of the medical profession is formed by the Faculty of the Medical Schools. they are the leaders to whom the doctors and general population will follow once they establish a policy.

The objective then is to obtain in an immediate future a change in the patterns of thinking that will bring a different behavior towards the reproduction problems.

To produce this qualitative change it is indispensable to reach the Medical School Professors that teach subjects related to reproduction and who are the real leaders in health problems in their communities.

Most Professors are unable to catch up with the frantic rythm in which new research and techniques are developing in reproduction. This leads to a lack of modern information and obviously the transfer of knowledge to the students is old fashioned and quite frequently obsolete. This vicious circle reflects itself in an inefficient practice that badly hurts the whole subject of reproduction and population dynamics.



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II- OBJECTIVES.

- 1) To give in a short time to the Professors of Latin America Medical Schools the necessary information in Physiology of Reproduction and Population Dynamics, to permit them to teach Reproduction in a correct and modern way.
- 2) To obtain through the Seminars a change in the approach to Reproduction that leads to open discussion of the problems and objective attitudes to population dynamics.
- 3) To introduce them to new techniques in teaching which will result in a more active participation of the staff and students, leading to the process of self-education.
- 4) To establish a system of continuing education that permits to keep the professors up to date in Reproduction, through information and consults furnished by a teaching Center.
- 5) To influence the modifications of the Curricula of the teaching of Reproduction in Medical Schools and the possibility of the creation of a Department of Reproduction and Population Dynamics.



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III- SIGNIFICANCE OF THE PROJECT.

It will:

- 1) reach directly the most influential group of people related to Reproduction and Population Dynamics in a short time.
- 2) reach a sufficient number of important policy makers people to obtain a change in attitudes and action.
- 3) break a dangerous vicious circle, conducting to lack of information, distorted transfer of knowledge and malpractice.
- 4) disseminate information and policies in Reproduction and Population Dynamics to Latin America, established and written by Latin Americans.
- 5) develop a system that will keep professors well informed and interrelated in teaching research and practice in Reproduction.



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IV- RESPONSIBLE INSTITUTION.

Universidad del Salvador, Buenos Aires, Argentina.

The University has been the grantee of the Latin American Course in Biology of Reproduction for the Organization, Coordination and Administration of the Program. An initial grant of U\$S 435,000 was awarded to the University in 1966 and an additional grant of U\$S 315,500 was recently received on March 1969. This Training Program comprises the combined effort of 3 countries, 4 universities and 10 centers.

Individual, Responsible for the Project:

Dr. Jorge M. Rosner, M.D. Director of the Instituto Latinoamericano de Fisiología de la Reproducción ( I. L. A. F. I. R. ) Latin American Institute on Reproductive Physiology, that depends from the Universidad del Salvador.

Location: San Miguel, Pcia. de Bs. As. Casilla de Correo 10 - Argentina

Project.

V- Selection of Candidates.

The most influential Professors of Gynecology, Obstetrics, Urology, Endocrinology and Physiology from the Latin American Medical Schools will be invited to participate in the Seminars. The professors should be invited and not selected after they send an application, because Professor rejected is Professor lost. Previously to the invitation a selection will be done based on the Curricula of the individuals, their leadership in their Medical School and in Reproduction, the urgencies of the countries, and the possibilities of applying the acquired training.

Regional Distribution,

To obtain results in an immediate future it is necessary to reach a sufficient number of professors in a short time.

To assure a maximal assistance of professors and profiting from the seasonal difference between the northern and southern hemisphere the course will be given twice a year during the vacation period for each hemisphere ( July and January respectively ).

Countries will be grouped in two sections following the division established by the Equator.



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Number of Candidates.

Twenty five professors will be selected. This number is considered the ideal that can be handled effectively through the techniques of seminars, and group discussions and obtain an active participation of the professors.

VI- Participating Centers.

In Argentina the Course will be concentrated in the I.L.A.F.I.R. in order to obtain maximal efficiency and communication.

Will participate in the Course:

- The Institute of Neurobiology ( Dr. Juan H. Tramezzani )
- Department of Histology. School of Medicine of the Universidad de Buenos Aires ( Dr. Roberto Mancini )
- Service of Obstetric Physiology of Uruguay ( Dr. Roberto Caldeyro Barcia )
- Hospital Pereyra Rossel ( Dr. H. Alvarez )

In Chile the University Obstetric Clinic, the Barros Luco Hospital, CELADE and the School of Public Health will share the teaching responsibility.

Organization

The Program will be coordinated by a Central Committee formed by representatives of Argentina, Chile and Uruguay. An Executive Director will put into action the decisions of the Central Committee.

Central Committe Members:

Argentina	J.H. Tramezzani
Uruguay	R. Caldeyro Barcia
Chile	C. Gómez Rogers
Executive Director	J.M. Rosner

A Central Office will function under the Direction of the Executive Director and the Administrator of the Program.

The University of El Salvador from Buenos Aires, Argentina, will be the grantee and responsible administrator for the Program.

Evaluation

The Central Committe will meet after each Course to evaluate it. The evaluation will be based on the information provided by a questionnaire answered by the trainees and the staff.



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Once a year the Central Committee will meet with out-side advisors in order to evaluate the Course with maximal objectivity.

Long Term Training.

The most brilliant and interested trainees could apply to the Course for further training in some of the areas to which they have been exposed. This additional training could be taken for periods varying from 6 to 12 months, it should be clearly justified and no more than 3 trainees per Course would be accepted.

X- Duration of the Program.

The total duration of the Program will be five years. In that number of years a total of 10 Courses can be given, 250 professors will be reached; a number considered sufficient to produce a modification of the attitudes and policy towards reproduction.

The duration of each course will be 6 weeks. Four weeks in Argentina and two in Chile.





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XI - CONTINUING EDUCATION

The necessity to:

- 1) keep ex- trainees up to date in Reproductive Physiology and Population Dynamics once they left the Course. -
- 2) reach a larger number of professors that will probably never take the Course. -
- 3) attract prospective trainees. -
- 4) to solve questions and problems in Reproduction and Population Dynamics presented by the trainees. -

Justifies the creation of a Centre in Continuing Education that will:

- 1) send a bulletin every two months to all the Professors of disciplines related to Physiology of Reproduction and Population Dynamics in Latin America containing pertinent information in teaching, practice and research.
- 2) send reports and reprints to Professors that require them.
- 3) send important reports and reprints to ex-trainees spontaneously.
- 4) furnish "a propos" information and orientation in teaching, practice and research.
- 5) furnish ex-trainees periodically with teaching material.
- 6) furnish with bibliographical searches the professors that require them. -



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XII - CONTENT

- Argentina -

Genetics, Neuroendocrinology and Hypophysis

- Genetics and Cytogenetics
- Histophysiology and Physiology of the hypothalamus and hypophysis - Feed-back-
- Adenohypophysis - Lactation
- Gonadotrophins - determination and mechanism of action.

Gonadal male physiology and physiopathology.

- Neuroendocrine control of the testis.
- Histophysiology and Physiology of the testis.
- Physiopathology of the male genital tract.
- Biodynamics of the spermatogenesis.
- Physiology of Spermatozoa-
- Male sterility - Its treatment.
- Immunology.

Gonadal female physiology and physiopathology

- Neuroendocrine Regulation of the ovary.
- Histophysiology and Physiology of the ovary.
- Mechanism of action of estrogens and progesterone.
- Physiopathology of the female genital tract.
- Female sterility - Its treatment.
- Functional evaluation of the ovary.
- Steroids determination - Steroidogenesis - Colpocytology.
- Ovulation Detection.
- Abortion. Its endocrine causes.



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- Uruguay -

Physiology of fertilization, pregnancy and newborn

- Egg transport. Factors affecting it.
- Fallopian tube physiology
- Sperm capacitation
- Fertilization and Implantation.
- Embryogenesis.
- Uterine Physiology and pharmacology
- Placenta. Physiology and functional evaluation
- Foetal and newborn physiology and physiopathology.

Experimental contraception

- Contraception.
- Experimental study of the different methods - Their mechanisms of action.

- Chile -

Demography

- Its field of action
- Statistics in health and demography
- Source of data - Comparative demographic study of the world and Latin America.
- Regional demographic study of Latin America.
- Introduction to population dynamics.
- Fertility, mortality, migration. Their effects.
- Theories and policies of population
- Design of a family planning program, effects of contraception on the level of fertility.
- Evaluation and efficiency of the programs in family planning.

Demography and Public Health

- Planning and evaluation in Public Health. Health problems related to human reproduction.



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- Interrelation between health, demographic, sociologic and economic Factors, its relationship with health programs specially maternal and child programs.
- Abortion. Its epidemiology.
- Abortion and contraception.

Family Planning and Clinical Practice.

- Medical approach.
- Methods for fertility control. History, aims and principles.
- Gestagens. Mechanism of action. Clinical use. Effectiveness
- Intrauterine devices. Mechanism of action. Effects on users.
- Clinical record for evaluation of fertility control.
- Comparative study of contraceptive methodology in family planning.
- Effects of antifertility agents in the morphology of female genital tract.
- Cancer detection.

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M. REQUENA - CHILE

J. ROSNER - ARGENTINA

J. TRAMEZZANI - ARGENTINA

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### APPENDIX III :

#### MAIN RESEARCH LINES - CLABIR

#### MECHANISM OF ACTION OF ESTROGENS

- Effects of Histamine on the Estradiol Uptake by the Rat Uterus.
- Catecholamines - Estradiol Interrelations on the Uterine Metabolism.
- Biological Effects of the Rabbit Antiserum to Rat Uteri.
- The Distribution of Labeled Estradiol in Different Segments of the Human Uterus.
- Action of Estradiol on Hypothalamic Organ Cultures.

#### MECHANISM OF ACTION OF PROGESTAGENS

- Effects of Oral Contraceptives on Labeled Estradiol Distribution.
- Effect of Oral Contraceptives on the "in vivo" Production of Steroids by the Perfused Dog Gonads.
- Effects of Progestagens on Human Uterine Endometrium Organ Culture.

#### ENVIRONMENTAL LIGHTING AND REPRODUCTION

- Circadian Rhythms in the Pineal Gland Activity.
- Regulation by the Pineal Gland on the Gonadal Activity in Birds and Mammals.
- The Retina as a Neuroendocrine Transducer in the Control of the Gonadal Activity.

#### STEROID BIOCHEMISTRY AND PHYSIOLOGY

- New Methods in the Determination of Steroids Regarding the Clinical Use.
- Production of Steroids by the Submaxillary Glands.

#### DIABETES AND REPRODUCTION

- Early Effects of Maternal Diabetes on the Rat Fetus.
- The Distribution of Testosterone and Estradiol in Female and Male Diabetic Rats.



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### OXYTOCIC DRUGS ( Oxytocin, prostaglandins )

- Effects on Uterine Contractility on Mother and Fetus.
- Influence of Gestational Age on the Mechanism of Labour.
- Influence of Pathological Pregnancy on Maternal Diseases.

### UTERINE INHIBITORY DRUGS

- Effects of  $\beta$  - Stimulating Agents on Uterine Contractility and Side Effects on Mother and Fetus.

### EVALUATION OF FETAL GROWTH AND MATURATION DURING PREGNANCY'

### EVALUATION OF FETAL HEALTH DURING PREGNANCY AND LABOUR

- Diagnostic and Prognostic Value of Signs Indicating Fetal Distress.

### INTRAUTERINE TREATMENT OF FETAL DISTRESS

- Administration of Drugs to the Mother, or Directly to the Fetus.

### STUDY OF LABOUR WITHOUT IATROGENIA

- Labour without Artificial Rupture of Membranes.
- Labour without Oxytocics, Anesthetics, " Spasmalytics ".
- Labour without Unphysiological Maternal Position ( Supine ).

### CHILD DEVELOPMENT

- Neuropsychologic and Somatic Evaluation.



## CURSO LATINOAMERICANO DE BIOLOGIA DE LA REPRODUCCION

### COMITE CENTRAL

R. CALDEYRO BARCIA - URUGUAY  
 R. MANCINI - ARGENTINA  
 C. GOMEZ ROGERS - CHILE  
 M. REQUENA - CHILE  
 J. ROSNER - ARGENTINA  
 J. TRAMEZZANI - ARGENTINA

CASILLA DE CORREO 10 - SAN MIGUEL  
 PCIA. DE BUENOS AIRES - ARGENTINA  
 DIRECCION CABLEGRAFICA:  
 REPROBIOL. - SAN MIGUEL - BAIRE

### PHYSIOLOGY AND PHYSIOPATHOLOGY OF THE TESTIS

- Effects of Purified Preparations of Human Gonadotrophins on the Rat Spermatogenesis.
- Effect of Human Urinary FSH and LH on the Recovery of Human Spermatogenesis After Hypophysectomy.
- Action of Ovine FSH and LH on Glycogen Content of Intact and Hypophysectomized Rats.
- Immunohistochemical Demonstration of the Localization of Ovine FSH in the Rat Testis.
- Effects of Anti-LH and Anti-FSH Sera on the Maturation of Rat Gonads.
- Antagonizing Effect of HCG on the Action of Melatonin on the Rat Testis and Adnexal Glands.
- Electron Microscopical Studies on Normal and Pathological Human Pituitaries.
- Content of Biogenic Amines in the Rat Testis at Different Ages.
- Mechanism of Action of Leucoblastin on the Testis.
- Effect of Antispermatic Antiserum on Rat Seminiferous Tubules "in vitro".
- Antigenic Potency of Denatured Testicular Proteins.
- Action of Mitomycin on the Ultrastructure of Germinal Cells.
- Immunochemical Characterization of Insoluble Fractions of Human Spermatozoa.

### CYTOGENETICS

- Ultrastructure of Meiotic Chromosomes.
- Composition and Ultrastructure of Repressed Chromatin.
- Histochemistry and Behaviour of the XY Pair in Mammals.

### PITUITARY GLAND PHYSIOLOGY

- Electron Microscopical Studies on Normal and Pathological Human Pituitaries.
- Neurohypophyseal Morphology.
- Determination of the Oxytocin Concentration in Blood by Biological and Radioimmunoassay Methods.



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### PLACENTAL PHYSIOLOGY

- Morphological and Biochemical Studies of the Normal and Pathologic Placenta.
- Human Chorionic Somatomamotrofin : Extraction, Purification, Structure and Biological Actions.

### NEUROENDOCRINOLOGY OF LACTATION

- Milk Secretion and Ejection.
- Intrahypothalamic Neural Paths of Milk Ejection.

### SEXUAL MATURATION

- Fetal and Neonatal Distribution of Gonadal Hormones.
- Metabolism of Testosterone by Target Tissues during the Ontogenic Development.

### OVARIAN PHYSIOLOGY AND PHYSIOPATHOLOGY

- Morphology and Physiology of the Human Oocyte.
- Immunological Properties of the Ovarian Follicular Fluid.
- Morphological and Biochemical Effects of the Gonadotrophins on the Human Ovary.
- Effects of Oral Contraceptives on the Human Ovary.

### CONTROL OF REPRODUCTION

- Mechanism of Action of the I. U. D. s.
- Clinical Evaluation of I. U. D. s.
- Oral Contraceptives : Short and Long-Term Effects.

### FUTURE RESEARCH LINES

- Effects of Different Cations on the Estrogenic and Progestational Action in the Uterus.





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**DIRECCION CABLEGRAFICA:**

REPROBIOL. - SAN MIGUEL - BAIRE

- Action of  $\alpha$  and  $\beta$  Blocking Agents on the Mechanism of Action of Estrogens and Progestagens.
- Biochemical Mechanisms of Nidation.
- Early Effects of Estrogens and Progestagens on the Central Nervous System.
- Biochemical Effects of Early Diabetes on the Fetus.
- Regulation of the Pituitary Production of Gonadotrophins by the Retinal Melatonin.
- Effects of Human Urinary FSH and LH on the Induction of Spermatogenesis in Eunuchoid Patients.
- Effects of Ovine FSH and LH on Glycolysis and Carbohydrate Enzymes of Rat Testis.
- Mechanisms of Action of Glucorticoids on Pituitary FSH and LH Content and Spermatogenesis of the Rat.
- Electron Microscopy Studies on the Localization of FSH and LH in the Rat Testis.
- Early Signs of Fetal Distress : the Study of Nucleic Acids Metabolism in Human Placenta.
- Effects of Anti-LH and Anti-FSH Sera on the Rat Pituitary and Hypothalamus.
- Histochemical Study of Glycogen and Related Enzymes on the Human Testes at Different Ages.
- Neuroendocrine Effects of High Altitude on Reproduction.
- New Methods in Human Contraception.
- New Developments and Approaches in Diagnosis and Treatment of Fetal Distress.

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