

# MOBILITY PROGRAMS FOR SCIENTISTS AND ENGINEERS IN LATIN AMERICA

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Although Latin American and Caribbean countries have made systematic efforts to develop a framework for cooperation and integration, few of the existing frameworks have contributed significantly toward financing science and technology (S&T) cooperation. However, there is growing awareness of the need to increase national support for innovation; in addition, multilateral institutions (especially banks) have played a significant role in Latin America in shaping technological development. The Inter-American Development Bank and the World Bank are key players in funding S&T development projects.

Other multilateral organizations have been active, given the resources available to them, in supporting the S&T base in the region as well; these include the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Ibero-American Program of Science and Technology Development (CYTED—described below), the Inter-American Organization for Higher Education based in Quebec City, and the Inter-American Association of Associations for the Advancement of Science (Interciencia). All of these organizations have a program component addressing mobility of scientists and engineers. Additionally, numerous bilateral programs exist among the various Latin American countries, notably through their National Organizations for the Promotion of S&T (ONCYTs).

This brief paper highlights some of the most significant organizations and initiatives involving mobility programs for scientists and engineers in Latin America.

## MULTILATERAL ORGANIZATIONS

**CYTED.** Created in 1984 by an agreement signed by 21 Ibero-American countries, CYTED's main objective is to foster cooperation among research groups at universities, research and development (R&D) centers, and innovative firms in Ibero-American countries to achieve transferable S&T results for productive systems and social policy. It also aims to be a bridge for S&T cooperation between Latin America and the European Union through Spain and Portugal. It is made up of 16 thematic

subprograms that range from aquaculture to S&T management. It also comprises thematic networks; these are associations of research units of public or private organizations in CYTED countries whose S&T interests and activities are related to the particular network's theme. Although the creation and specialization of human resources is not CYTED's primary aim, it does conduct considerable activity in this area. CYTED's human resource creation activities are mainly directed at network and project components and, secondarily, to other collectives of researchers, teachers, and professionals. These formation activities within CYTED are co-funded. Only those oriented to the improvement of capacity building of the groups participating in CYTED projects may be funded entirely through subprogram funds.

Regarding scientific cooperation, one of the most recent and interesting efforts involves the establishment of Latin American Science Networks in several major fields. These networks are sponsored by UNESCO and the International Council of Scientific Unions through the Committee on Science and Technology in Developing Countries/International Biosciences Networks; they also receive support from the Latin American Academy of Sciences. They have formed a coordinating committee for the discussion of policies and problems affecting the entire scientific community in the region, as well as interdisciplinary topics and projects. For their members, the networks have drawn largely on existing scientific societies and a variety of organizations that bring scientists of the region together in the different disciplines, which means that they are highly representative and well-equipped to work with the respective communities. One of their main activities has been to foster interregional exchanges among young scientists. They are also administering government support and seeking to generate regional mechanisms for the integration and financing of joint efforts in S&T.

Examples of these networks of research and exchange follow.

**Latin American Astronomy Network (RELAA).** This network has a long-standing tradition of cooperation with members of the International Astronomi-

cal Union. Following a recent impetus from the International Council of Scientific Unions and UNESCO, more systematic cooperation has been established among the member countries, namely Argentina, Brazil, Chile, Mexico, Uruguay, and Venezuela.

**Latin American Biological Sciences Network (RELAB).** This is the oldest of the S&T networks, launched in 1975 with the sponsorship of the United Nations Development Programme (UNDP) and UNESCO. It currently has 14 national, 6 regional, and 2 associate members. RELAB has integration projects at various stages of implementation, including the Regional Program of Biotechnology. Launched with support from UNDP, UNESCO, and the United Nations Industrial Development Organization in 1987, this program has been operating since 1996 with funds from various donors and countries. From the outset, the program has supported the establishment of the Argentine-Brazilian Center for Biotechnology.

**Latin American Biotechnology Network.** An offshoot of RELAB operating since 1992 with the support of national committees, this network has contributed to policymaking, the establishment of infrastructure, and an increase in investment in biotechnology.

**Latin American Physics Network (RELAFI).** There is a long-standing practice of cooperation in physics through the Latin American School of Physics, a biennial event held since 1959, and the Latin American Center for Physics (CLAF), which has systematically supported regional activities. In 1994, the Latin American Network of Physics Societies (RELASOFI) was created, comprising CLAF and the 16 physics societies or groups that make up the Latin American Federation of Physics Societies (FELASOFI). In 1996, the Ibero-American Union of Physics Societies was created in response to the need for Spanish and Latin American organizations to present a united front in negotiations within international structures.

**Latin American Chemical Sciences Network (RELACQ).** Since 1959, the best promoter of academic exchanges in chemistry has been the Latin American Federation of Chemistry Associations. In 1995, it was decided to create RELACQ to give fresh impetus to cooperation; this network has yielded its first tangible products and has good prospects for growth. RELACQ has a

counterpart, the Latin American Electronic Network for Chemistry, supported by the Organization for American States (OAS).

**Mathematical Union of Latin America and the Caribbean (UMALCA).** This union was created at the same time as RELACQ; its predecessor was a regional program supported by the French government. UMALCA carries out and supports a series of activities at the regional level, including the Latin American School of Mathematics and the Regional Mathematics Network, which aims to foster cooperation in research and advanced education.

**Latin American Association for Space Geophysics (ALAGE).** This network is very young—it was created in 1993—but very active. There is also an embryonic Latin American Network for Earth Sciences (RELACT), which aims to encompass surveys of geology, mineral resources, and water supply being carried out in the basin of the La Plata River in the context of the Southern Cone Common Market (MERCOSUR).

**Network for the Popularization of Science and Technology in Latin America and the Caribbean (RED-POP).** This network was established with UNESCO support and involves most centers in the region in an exchange of information and experience.

**Planning and Management of Science & Technology in Latin America Graduate Programs Network (RED-POST).** This network was created in 1989 under UNESCO auspices by formally established Latin American university graduate programs granting master's and doctoral degrees; its purpose is to explicitly promote and channel cooperation and exchange among programs in this field.

**UNESCO-UNITWIN.** UNESCO has implemented a worldwide system of chairs for the introduction of new themes and subjects in different countries and regions, often through the pairing of universities, whereby both teachers and students circulate and are concentrated in particular sites. In Latin America, the number of UNESCO and UNITWIN chairs has been growing considerably, and the International Latin American and Caribbean Institute for Higher Education in Caracas is firmly committed to expanding these as a mechanism.

**LATINDEX.** The purpose of this regional cooperation project in the field of scientific information and documentation is to create a computerized system based on a regional network of information centers in order to keep up to date a catalogue and index of the scientific journals published in Latin America and the Caribbean.

## BILATERAL PROGRAMS

**Inter-American University Organization (OIU).** Since its foundation in 1980, OIU has fostered exchange activities between educational institutions in the Americas. In 1983, it created the Institute for University Management and Leadership (IGLU) with the aim of developing training activities, career development activities, etc., for the university and other higher education leaders belonging to this organization.

**Organization of Ibero-American States for Education, Science and Culture (OEI).** This intergovernmental organization was created in 1955, with of aim of strengthening cultural identity in the integration process, through the promotion of capabilities linked to the social, cultural, and economic development of Ibero-America. The target group for 1999-2002 will be the 14- to 19-year-old age group, although interventions might also be planned for other populations. Emphasis will be placed on supporting policy design and management; as an Ibero-American organization, OEI will try to reinforce its role as an agent between the European Union and Latin America. Its funding is covered by obligatory quotas from the governments of the member states, as well as from contributions for particular projects made by institutions, foundations, and other interested organizations.

**Collaboration on University Management: A Bridge Between Universities and Scholars in Europe and Latin America (COLUMBUS).** Since its creation in 1987, this nongovernmental organization made up of affiliated public and private universities from both Latin America and Europe has supported the modernization of higher education and institutional development in Latin America, facilitating the exchange of successful experiences, systematically exploring critical areas of institutional management, training senior university officials, and organizing support services and specific management projects. It has greatly enhanced international and intra-regional mobility of university authorities and has effectively contributed to the introduction of an evaluatory culture in higher education institutions in the region.

**Academic and Professional Programs for the Americas (LASPAU).** This nonprofit organization affiliated with Harvard University designs, develops, and implements academic and professional exchange programs on behalf of individuals and institutions in the United States, Canada, Latin America, and the Caribbean. LASPAU places a high value on the role of exchange in institutional development and on access to exchange programs by all individuals, regardless of socioeconomic level, geographical location, sex, or race. The organization offers a strong regional focus, administrative expertise, and a foundation in the Harvard community. Drawing on extensive knowledge of the Latin American and Caribbean academic communities, LASPAU has collaborated with the United States Information Agency since 1975 in the administration of a Faculty Development Program which brings more than 150 educators each year from Latin America and the Caribbean to the United States.

**Fulbright-LASPAU Partnership.** The success of the LASPAU Faculty Development Program has encouraged other associations between the Fulbright Program and LASPAU, including the Central American Program of Undergraduate Scholarships (CAMPUS), the Amazon Basin Scholarship Program, the Caribbean and Central American Ecology Program, cost-sharing initiatives by Fulbright commissions and United States Information Science (USIS) offices, and a series of workshops and seminars offered to Fulbright grantees and alumni both in the United States and abroad. Today, LASPAU actively partners with U.S. and Latin American universities, Fulbright commissions, and USIS offices to design flexible programs that meet the needs of countries, institutions, and the grantees themselves.

**International Development Research Center (IDRC).** In addition to its important cooperation program with Latin America for the development of a scientific base in the region, IDRC has supported close to 200 Latin American and Caribbean scholars in the past 10 years. Chile, Peru, and Colombia have the largest percentages of students currently funded.

**Montevideo Group (AUGM).** The association of universities in the Montevideo Group has accumulated cooperation and exchange experiences since 1991, and has developed the Common Academic Space Program (ESCALA) to promote the creation of a kind of subregional virtual university. The mobility of teachers and researchers in an early phase and the later widening of the

program to cover student mobility within the southern sub-region is playing a crucial role in the development of a “subregional integrating dimension” of higher education, supported and stimulated by MERCOSUR. Higher institutions linked to the program have begun to take this mobility into account in establishing their structures and aims.

**OAS Common Market for Scientific and Technological Knowledge Program (MERCOCYT).** Modeled in part on the European Union Framework Program for R&D, this program is a mechanism to promote S&T capacity building in the region and has been in operation since the beginning of the 1990s. Among its main components are projects of scientific and technological integration (such as exchanges and training of highly qualified personnel, research and management of technology and networks of centers of excellence, and data intercommunication).

**Latin American Faculty of Social Sciences (FLACSO).** Established in 1957 with headquarters in Santiago, Chile, and UNESCO support, FLACSO is an autonomous cooperative initiative of UNESCO and the governments of the region aimed at promoting education, research, and technical cooperation in the social science field throughout the subcontinent. The organization’s autonomy and regional character are ensured by the participation of all member countries and eminent intellectuals in its governing bodies and by the Latin American origins of its academic, student, and administrative body, which carries out activities in its 10 academic units and in the general secretariat. Its Latin American nature is also strengthened by the content and scope of its teaching and research programs, which are geared to the region’s scientific and social needs. Assistance comes from financial contributions by member country governments and from an extensive network of cooperation agreements with various institutions in the public and private sectors of this and other continents. FLACSO’s basic functions are to provide training in the social sciences through postgraduate and specialization courses; perform research in the social science field on Latin American problems; disseminate

by all available means, and with the support of governments and appropriate institutions, advances in the social sciences, particularly its own research results; promote the interchange of social science teaching materials in and for Latin America; and, by means of extension and cooperation work, collaborate with university institutions and similar international, regional, and national bodies, both governmental and private, to encourage development in the social sciences.

**Latin American Social Sciences Council (CLACSO).** Since its creation in 1966, CLACSO has formed the most extensive coordination body for social science research centers in Latin America and the Caribbean, and currently includes 117 member centers. Its executive secretariat has always operated in Buenos Aires. CLACSO has developed a basic work program that strengthens interchange mechanisms in order to bring about a greater integration of Latin American social sciences. It protects the working conditions of social scientists at member centers and other institutions in the region whose academic activities and/or personnel were marred by years of authoritarian repression. Its postgraduate program deals with two major areas: the Southern Cone Research Program, which, with financial support from CLACSO, provided aid in the countries of the subregion to researchers experiencing work difficulties because of their political and/or theoretical views; and, in cooperation with UNDP and UNESCO, the Young Researchers Training Program, since it had become apparent that the main problems in the region were a lack of funds for research and the difficulties experienced by young university graduates in obtaining funds from international agencies.

In recent years, the council’s academic activity has been directed at its own medium- and long-term planning against a background of institutional reorganization, rethinking the Commissions and Groups Program to counteract the effects of thematic/organizational dispersion, and continuing action in subject matter areas of particular importance for the analysis of democratization and ad-

justment processes in the region. CLACSO's 26 working groups and commissions have a membership of some 3,000 researchers in a program of academic exchange, debate, and publication. In 1994, special attention was devoted to nine central themes (commissions) involving the working groups. In view of the increasing development of various Latin American information networks, the Network of Networks (Red de Redes) project was established with IDRC support to improve end user access to existing information resources by linking up 18 regional information networks. During the 1992-95 period, CLACSO was responsible for general coordination of the International Development Information Network for the social sciences, Phase II. That project encouraged the coordinators of each association to develop mechanisms and strategies for new forms of telecommuting. IDRC in Ottawa pro-

vided financial support; additional technical support came from the Organisation for Economic Co-operation and Development.

## OTHER

No listing of mobility mechanisms for scientists and engineers in Latin America would be complete without mentioning the fellowship and other collaborating programs set up by several developed countries through their embassies: the United States, the United Kingdom, France, Germany, the Netherlands, Japan, Italy, and Spain, among others. Another important recent initiative is that of the European Union, through its Alfa-Program of collaboration with Latin America.