



Co -Hemis... update

Working Towards a Hemispherical Center for Cooperation in Technology

CoHemis achieves several important goals in Washington, D.C.

According to Dr. D. Allan Bromley, Scientific Advisor to the President and Director of the White House's Office for Science and Technology Policy (OSTP), the Center for Hemispherical Cooperation in Research and Education in Engineering and Applied Science (CoHemis): "is a great idea that could be in agreement with President Bush's Enterprise for the Americas Initiative". The general tone of welcoming for the CoHemis concept was this enthusiastic in the executive and legislative offices at Washington D.C.

The successful series of activities celebrated in Washington by the Launching Office of Co-Hemis between April 5th and 10th constituted a very significant step for the concretization of the concept, succeeded at creating consciousness of the advantages of the center among the people who will eventually intervene in its approval, and set the foundations and directions for future actions.

These activities included a meeting of the CoHemis Advisory Committee, a presentation of the project to U.S. agencies and ambassadors' representatives, and introductory visits to important federal executive and legislative offices that may become instrumental in the actual execution of the project. This was achieved with the cooperation of the legislative offices of Puerto Rico, the Mayaguez Campus, the President of the University of Puerto Rico and its Resource Center for the

Learning of Science and Engineering.

Other goals that were achieved were: defining a concept that represents the hemispheric point of view; exploring mechanisms for U.S. to contribute the initial costs of establishing the center; and to seek the active support of embassies and *(Continues on page 3)* h e m i -

Decided Venezuelan support for CoHemis

In a message sent from Caracas, Mrs. Dulce Arnao Uzcátegui, Ph.D., Minister of State and President of the National Council for Science and Technology Research (CONICIT), expressed her complacency towards the Center for Hemispherical Cooperation in Research and Education in Engineering and Applied Science (CoHemis) project and showed interest in creating ties between the center and the recently founded Programa Bolívar. Dr. Paul Esqueda, President of the Institute of Engineering Foundation, called the founding of a center like CoHemis a very important event, and offered the institute's cooperation in orchestrating a development plan. Similar sentiments were expressed by Dr. Rubén Bracho, president of the INZIT- *(Continues on page 2)* CICASI of Maracaibo, and Dr.

Guatemala: Challenge and Opportunity for CoHemis

Attorney Magaly Morales, Coordinator of the Secretariat of the recently created National Science and Technology Council (CONCYT) of Guatemala, showed a marked interest in CoHemis and its goals, and offered herself to present the concept in the May meeting of the Central American and Panamanian Technology Commission (CETECAP). Her generous offer came up during the visit made to this country by Dr. Luis Pumarada, Director of the Launching Office of the Center for Hemispherical Cooperation in Research and Education in Engineering and Applied Science (CoHemis).

The purpose of this trip, which took place between March 29 and April 1, was to present to the Guatemalan community of research and development the benefits of CoHemis and receive their suggestions and points of view, become familiar with the situation of research and higher education in technology in a small country of great cultural diversity, and explore the mechanisms by which Guatemala and other countries with scarce economic resources may belong to CoHemis, and search for the active support of the government in its international relations.

The interviews were kindly arranged by Eng. Edgar Bravatti Castro, delegate of Guatemala to CoHemis and Secretary of the *(Continues on page 4)*

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Ignacio Rodríguez Iturbe, who is recognized world-wide as an authority in the field of hydrology.

Their statements came as a result of a series of presentations by Dr. Luis Pumarada, director of the Launching Office of CoHemis, that took place in the homeland of Bolívar between the 23rd and 28th of February. These visits were kindly scheduled by Dr. Graciela Sosa, Venezuelan delegate to CoHemis and Planning Director of CONICIT. This agency and INZIT-CICASI covered the expenses of the stay. The trip's purposes were: to present the advantages of CoHemis to the Venezuelan research and development community and receive their suggestions and point of view; to become familiarized with the situation of research and higher learning in technology in one of the more developed countries of Latin America; to explore the mechanisms through which Venezuela may belong to CoHemis; and to seek the government's active support in its international relations.

Dr. César Martínez, Vice-minister of Science and Technology and Vice-president of CONICIT, gave Dr. Pumarada an official welcome on Monday. Later, an exchange of ideas took place with Dr. Antonio Leone, Executive Secretary of the Latin American Scientific and Technological Commission (COLCYT) of the Latin American Economic System (SELA) and organizer of Programa Bolívar.

At the Institute for Advanced Studies (IDEA), Pumarada presented the CoHemis concept to its Director, Francisco Astudillo, and to Drs. Iaccoca and Quintana from the IberoAmerican Institute for Scientific and Technological Policy. The world-renowned hydrologist Dr. Ignacio Rodríguez Iturbe, professor at the Simón Bolívar University and advisor to the Massachusetts Institute of Technology, joined them for lunch and set himself at service of

CoHemis to the point of accepting the position of independent advisor of its Launching Office.

At the Institute of Engineering Foundation, there was a meeting with its President, Dr. Paúl Esqueda, and with Drs. Rafael Padilla and Claudio Bifano and other officers. At the Venezuelan Institute of Scientific Research (IVIC), Mr. Luis Alvarez, manager of the Technological Center, acted as host and guide. At both institutes the CoHemis concept was presented, their facilities were visited, and the research and services which they render were appreciated.

Fundacite Mérida was visited Thursday, and a meeting held with its executive director, Dr. Osmañ Rosell. At the University of the Andes' Center for Technological Innovation (CITEC-ULA), an industrial incubator that is part of the Technological Parks Program, Dr. Pumarada was able to appreciate the development of an entire high-technology industry which promises to be quite competitive and have the potential to positively affect the population.

On Friday, the Zulian Institute of Technological Research (INZIT) of Maracaibo was visited. Pumarada presented CoHemis to its President, Dr. Rubén Bracho, its department directors, and several guests: Mario Leal, of INDESCA, Arnaldo Bracho, from the Ministry of the Environment and Renewable Natural Resources of Zulia, Alicia Soto de León, from the Institute for the Conservation of Lake Maracaibo, Atilio Nava, of Fundacite Zulia, and Mario Herrera, Mercylino Quinto Leudo, Miguel A. Sánchez, Odalis de Rincón and Carmelo Urdaneta, all from the University of Zulia.

The productive week produced valuable suggestions regarding problems which CoHemis may anticipate, contributions which it can make, and possible means and mechanisms of cooperation. It was realized that Venezuela, one of the

more developed Latin American countries, could contribute to CoHemis in such fields as petroleum chemistry, coal, environmental matters, corrosion and biomedicine. On the other hand, the country may benefit from the center with regards to graduate studies, professional growth of its researchers, the opportunity to use equipment that would not be affordable to have in the country, the chance to involve foreign experts in subjects in the country's interest, the reinforcement of possibilities for other cooperation programs, the applications of electronics and pharmacological processes and others.

Dr. Pesquera: a new pursuit

Since Dr. Carlos I. Pesquera is now implementing the new Center for Infrastructure of the Civil Engineering Department, he will vacate his position as CoHemis co-director in May.

In name of all CoHemis personnel, delegates and counselors: **Thanks Carlos for your contributions, and may you continue to have success!**

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spheric organizations.

The members of the Advisory Committee that attended were Dr. Graciela Sosa, CONICIT official from Venezuela, Eng. Keith Crichlow, professor at the University of the West Indies and adviser and delegate of NIHERST of Trinidad & Tobago, Eng. Numa Capiati, technical adviser and delegate of the Argentinian CONACT, Dr. Alberto Pignotti, researcher for the Foundation for Technological Development and individual adviser of CoHemis, and with a similar position, Dr. Jorge Vélez Arocho, former Dean of the Faculty of Business Administration of the Mayaguez Campus. Dr. Vélez presided over the Monday and Tuesday work sessions, which were also attended by Drs. Carlos I. Pesquera and Luis Pumarada, co-directors of the Launching Office. Dr. Robert Kavanagh of Canada and Dr. Manuel Martínez of Mexico were excused, as were advisers Dr. Rafael Bras, of the Massachusetts Institute of Technology and Dr. Ignacio Rodríguez Iturbe, from Simón Bolívar University.

On the first day, the CoHemis people were welcomed by Atty. José R. Martínez, Director of the Federal Affairs Office of Puerto Rico, which spent all week serving CoHemis. On Tuesday morning, Eng. Antonio J. Colorado, Resident Commissioner of Puerto Rico to the House of Representatives, called on the group, backed the project and offered his Washington resources for its success. That same morning the committee met with Dr. Elenora Sabadell, Director of the Natural Disasters Programs of the National Science Foundation.

On Wednesday afternoon, the Launching Office co-directors, it's Advisory Committee and Dr. Alejandro Ruiz Acevedo, Chancellor of the Mayaguez Campus, presented the concept of CoHemis to a

group of representatives of U.S. agencies, including N.S.F., N.I.S.T., U.S.G.S., Department of Energy the State Department, the directors of the OAS' Scientific Division, and representatives of the Mexican, Chilean, Argentinian, Paraguayan, Venezuelan and U.S. embassies (before OAS). The Interamerican Development Bank (IDB) was celebrating an important activity in Santo Domingo that week and excused itself via Mr. Romano. After the presentation, there were supportive reactions and suggestions. Some of these were: establishing more direct contacts with existing cooperation efforts; keeping in perspective the great differences in degree of development of the Latin American countries; and using to capacity the major research strengths of the Mayaguez Campus in the developing stage of the center. The Chancellor, inspired by the warm welcome of the concept, promised to try to include a building for CoHemis in the University's building programs.

The co-directors of the office stayed until Friday to visit legislative assistants and committees of the House of Representatives and the Senate, the Chief of the Engineering division of NSF and Dr. D. Allan Bromley, Scientific Adviser to President Bush. Interviews in legislative offices were accomplished despite their having been requested for the last two days of the congressional session, in the middle of voting, committee meetings and with legislators and assistants in election campaigns. Legislative advisers of Puerto Rico, who will follow-up these initial contacts, attended all these meetings.

There is a total consensus in Washington as to the desirability of technological and scientific cooperation with Latin America. In spite of this, funds are limited by the legislation that aims to balance the U.S. national budget. In this context, programs of foreign aid find

much opposition because they reduce the funds for fighting poverty and crime within the United States. CoHemis was introduced to the Americans as an effective way of helping to improve technology and economical development in Latin America which is also feasible in the political and budgetary reality of the United States. In contrast to more traditional forms of technological cooperation, CoHemis would provide a showcase to North-South cooperation, use funds efficiently and find less opposition from taxpayers who increasingly refuse to send money out of the country.

The congressional offices that were visited were those of Hon. José Serrano, Puerto Rican representative of the Bronx, Hon. Robert Torricelli, representative of New Jersey and President of the Subcommittee on Western Hemisphere Affairs, and Hon. Jeff Bingaman, Senator of New Mexico, who belongs to the Senate Committee on Science and Technology. The committee offices visited were those of the Senate Subcommittee on Science, Technology and Space, Senate Committee on Commerce, Science and Transportation, Subcommittee on Veterans Administration, HUD and Independent Agencies of the Senate Appropriations Committee, and the Science, Space and Technology Committee of the House. The welcome given to CoHemis in all these offices was extremely positive.

Dr. Joseph Bordogna, NSF's Associate Director of Engineering, knew well the Campus and its School of Engineering and was very enthusiastic about the CoHemis initiative.

Bordogna as well as his Acting Assistant Director, Dr. William Hakala, and Dr. John B. Scalzi, director of the program which sponsored the November hemispheric conference, warmly embraced the prompt submittal of a preproposal for a more detailed plan for launching CoHemis and for holding a tech-

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nical conference to delineate areas of possible cooperation. This would permit pushing on preparations for the definite launching of CoHemis.

Guatemala...

Faculty of Engineering of the University of San Carlos. Eng. Bravatti is campaigning for the office of Dean of Engineering in elections which will take place this June. Attorney Cesar Martinez, Head of the Science and Technology Unit of the General Secretariat of the National Economic Planning Council (Segeplan), the agency that named Eng. Bravatti as Guatemala's delegate to CoHemis, officially welcomed by Dr. Pumarada.

In the University of San Carlos, the two-century old national university, site of most of the research projects conducted in the country, a meeting was held with Dr. Marco Quezada, Secretary of the University Council and the Chancellor, and with Eng. Edgar Franco, General Director of Research. Dr. Pumarada also met with Eng. Jorge Mario Morales González, Dean of the Engineering Faculty, and visited the Engineering Research Center and its dependencies, including the Office of Information and Publications.

The Guatemalan CONCYT was created by law as recently as September 1991, and its Secretariat is still in a developing stage. It's Coordinator, Atty. Magaly Morales, mentioned in her meeting with Dr. Pumarada the possibility that CETECAP represent all its member countries in CoHemis and payed their respective quotas. The other CETECAP countries are Costa Rica, Honduras, Nicaragua, Salvador and Panama. Atty. Morales belongs to the CETECAP board and promised to present our project to the other

delegates this May. The possibility of collaboration between CoHemis and the Central American Institute of Research in Industrial Technology (ICAITI), a CETECAP regional entity located in Guatemala, was also mentioned. In this trip, Dr. Pumarada was unable to visit ICAITI, but this will be done in the future.

In contrast with other more developed and culturally uniform countries, Guatemala presents great challenges to development as a function of technological progress. It has necessities that are basic. Alphabetization, agricultural productivity and manageable rural technologies are top priorities. The country's progressive academic community and a government that is ready to offer support are valuable assets. Its large indigenous population is not integrated to general social production, but at the same time it shows a cultural diversity that combines with the rich Guatemalan natural and archeological resources to generate an enormous potential for tourism. The technological and social development of the country constitutes very complex challenge: how to develop competitive industries that increase wealth while preserving the natural resources threatened by the needs and wastes of a growing population and its urbanization patterns and at the same time implement rural systems and technologies for immediate application to improve the situation of the indigenous population without altering their basic culture and way of life.

CoHemis can collaborate in all of these areas. The Mayagüez Campus has had effective service programs for the rural population which have approximately a century of existence. This experience could serve as framework for the development of socio-technical systems directed at the rural population and its problems. The wide distribution

of this type of situation in the hemisphere creates an enormous potential market for an industry of simple machines and products that can have an impact in its solution. The presence in CoHemis of people of different disciplines and countries would help such products and systems to be more wide-reaching and effective. The positive and negative experiences of tropical Puerto Rico with its intensive tourism and industrial development would be advantageous in the design of systems that creatively attack problems related to similar developments in other tropical regions while at the same time controlling their environmental effects.

CoHemis Helps NIST and Small Caribbean Nations

Gisela González, Coordinator of CoHemis Founding Office, collaborated with a seminar of laboratory metrology sponsored by the US National Institute of Standards and Technology (NIST) and the Department of the Consumer's Affairs of Puerto Rico that took place in Mayagüez Campus between February 10th and 14th. CoHemis also sought financial support for some of the visitors, that came from the Virgin Islands, Mexico, St. Lucia, Jamaica, Barbados, Grenada, and Puerto Rico.

The seminar was given in English and Spanish and included basic concepts and procedures of mass and volume measurements, statistics, and measurement control programs. NIST is planning another seminar for interlaboratory measurements in mass calibration and a future meeting with the purpose of creating a Regional Measurement Program.