



New Board of Directors Installed

The Bi-National Sustainability Laboratory has installed a new bi-national Board. The new BNSL Board consists of twelve individuals who represent a wide spectrum of expertise in the business, government and public sectors, and bring a wealth of experience to the border region. Board membership is equally divided between the United States and Mexico.

The first meeting of the new Board of Directors was held on March 27 & 28 in Santa Teresa, NM and El Paso, TX.. At that meeting, the existing Board consisting of Rick Homans, Secretary of NM Economic Development Dept., Jessica Glicken Turnley, President Galisteo Consulting Group, Inc., and Paul Shirley, Chairman of the Board and Chief Executive Officer Qynergy Corporation officially stepped down and handed over authority to the new Board. The outgoing Board guided the BNSL from just a concept to where it is today. Appreciation for their contribution in making the BNSL a success was voiced by the newly installed Board as well as Paul Maxwell, BNSL



Back from left: Julio Martínez, Antonio Zárate, Gabriel Ortiz, Ricardo Valenzuela, Richard Ewing. Front from left: Jennifer Sue Bond, Rolando Gonzalez, Lucinda Vargas, Mary Walshok Missing: Alfredo Román González, Jorge de los Santos, Gerry Yonas, Al Zapanta

Executive Director.

This next phase of the BNSL is an exciting time and the new Board is committed to guiding the organization into the future. Board President, Gabriel Ortiz, stated that “all Board members are enthusiastic about the inception of the BNSL. We want to take it to the next level and make it operational, thereby generating economic development through technological

innovation in all ten U.S.-Mexico Border States.”

The Board officers are: President - **Gabriel Ortiz Hernan** President and CEO of D’Informatica21, S.A. de C.V.; Vice President **Al Zapanta** President & CEO of the U.S.-Mexico Chamber of Commerce; and Treasurer/Secretary **Lucinda Vargas** CEO of Plan Estratégico de Juarez, A.C..

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“We want to take the BNSL to the next level... thereby generating economic development through technological innovation in all ten U.S.-Mexico Border States.”

“Building

Border

Businesses”

BNSL Moves to New Offices

In May the BNSL moved from its offices on Avenida Creel to a new location in Santa Teresa at 401 Avenida Ascension, Suite 100-3. This positive move for the BNSL provides connected lab and bay space conducive to the incubation of high tech businesses.

In the designated lab space there are four cubicle spaces for start-ups, which include desks, file cabinets and access to wireless internet. The high bay area space (3,000 sq. ft.) is fenced to provide controlled

access for BNSL staff and clients. High bay area and lab space are joined to facilitate access between the two.

Two projects are currently scheduled to move into the high bay and lab spaces.

Refinery Science will move a petroleum refining pilot plant into the high bay space. The plant is designed to test their patented technology. They will also occupy a portion of the lab space. Refinery Science is working on a nano-catalyst oil refining technology product line. David Rendina, co-founder and CEO of Refinery Sciences Corporation said the BNSL will not only provide incubation space to his company but will also serve as a bridge to technology development groups and investors in Mexico.



Lab space ready for occupation.



Fenced high bay space with direct access to the lab area.

Team Technology, a start-up company that designs and manufactures MEMS devices for the telecom industry, will incubate its U.S. operations at the BNSL Santa Teresa facility. They currently have manufacturing facilities in Ciudad Juarez, Chihuahua. The owner and President Lorenzo Rodriguez has already opened an office at the BNSL.

Economic Development America, national magazine of the U.S. Department of Commerce, Economic Development Administration, this May published a feature article on the BNSL. It can be viewed at <http://www.eda.gov/EDAmerica/spring2006/border.html>

Board (cont.)

Other members of the Board are **Jennifer Sue Bond** Senior Advisor on International Policy Studies for the Council on Competitiveness, **Richard Ewing** Vice President for Research of Texas A&M University, **Rolando Gonzalez Barron** President and CEO of Gobar Systems Inc., **Alfredo Roman Gonzalez** Secretary of Economic Development for the State of Tamaulipas, **Jorge de los Santos** Director of Pan American Initiatives at Arizona State University, **Ricardo Valenzuela** Representative of the Governor of Sonora to the United States, **Mary Walshok** Associate Vice Chancellor of the University of California San Diego, **Gerry Yonas** Principal Scientist and Vice President at Sandia Na-

tional Laboratories, and **Antonio R. Zarate Negrón** Executive Director of the Nuevo Leon International City of Knowledge.

Executive Director Paul Maxwell said the Board will help the BNSL fulfill its mission, which is to serve as an engine of research excellence for sustained economic development by partnering with business experts, scientists, border-community leaders, social scientists, civil servants, and engineers from Mexico and the United States to focus their expertise on turning emerging technologies into economic opportunities.



Board meeting attendees March 27, 2006

Industrial Partnership Program (IPP) Initiated

The BNSL has initiated a new membership program called the **INDUSTRIAL PARTNERSHIP PROGRAM** or **PROGRAMA DE COLABORACION INDUSTRIAL**

The BNSL's Industrial Partnership Program (IPP) creates strategic, collaborative partnerships with private sector companies utilizing advanced technologies. The IPP network crosses borders and links companies with the necessary resources to help them develop their technologies and enhance their business strategies.

Through this program the BNSL provides the following basic services to its members:

- **Technical and Business Consulting** - consultation for technical evaluation and business planning, including business plan drafting and review, market profiles, and feasibility studies.
- **Access to Legal Services** - access to leading law firms specializing in intellectual property, corporate and business formation, technology commercialization, international law, biotechnology, nanotechnology, energy, environmental, taxation, immigration, contracts, and licensing.
- **Patent Mining** - assistance in patent

mining and creating a patent portfolio for a specific technological interest from its access to over 7,000 university patents.

- **Contacts and Linkages** - all members have access to the BNSL's wide network of service providers. Specific links to applied research resources such as labs, facilities, equipment, information, and personnel. In addition, the BNSL can link members to commercial real estate providers for office space, warehouse, and distribution needs.
- **Financing Assistance** - links to appropriate investment entities, such as Angel investors and VC's, as well as assistance with SBIR/STTR grant consultation and evaluation.

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Office Opens at EPCC

The BNSL opened a new office at the Advanced Technology Center (ATC) of the El Paso Community College (EPCC) this June. EPCC is the fastest growing community college in the state of Texas, with five campus and more than 29,000 students.

The office, which serves as a satellite of the BNSL, works with the ATC on manufacturing commercialization projects. The ATC has the equipment, space, and personnel to offer training in Industrial Maintenance, Computer Numerical Control, Precision Machining, Mold Making,

BNSL serves as a bridge to technology development groups and investors in Mexico

Quality Control, Plastics Technology, and Electrical Journeyman. This expertise meshes well with the BNSL's ability to provide links to commercial and technology expertise in the border region and to develop appropriate strategies for tech development and commercialization.

News

Partnering agreements signed:

- February 13 - New Mexico State University, College of Engineering,
- March 29 - Team Technology, a Mexico based MEMS packaging company.
- March 31 - Texas A&M University, Office of Technology Transfer and Commercialization
- May 22 - Kemp Smith, an El Paso law firm.
- July 21 - Refinery Science Corporation, a U.S. based company developing a nano-catalyst oil refining technology product line

Upcoming Events:

- August 27 to 31 - COMS 2006, Commercialization of Micro and Nano Systems Conference, St. Petersburg, FL, US. Information: www.mancef-coms2006.org
- September 22 to 24 - "Juárez Avanza" Centro Comercial Las Misiones, Cd. Juárez, Chihuahua, Mexico. Hosted by Plan Estratégico de Juárez, A.C. Information: www.planjuarez.org
- September 28 - SBIR Workshop, El Paso TX, US. Information: call Irene Richardson at 915-831-7730
- Oct. 1 to 4 - 3rd Ibero-American MEMS Congress, Puebla, Mexico. Hosted by the US-Mexico Foundation for Science (FUMEC). Information: www.fumec-iberomems.org
- October 17 to 19 - Annual Iberoamerican Research and Development Summit (AIRDS) 2006 Nanoscience, Microsystems, & Materials. Albuquerque, NM, US. Information: www.irdsummit.org

A Message from the Director

“Plenty of Room at the Bottom”

In 1959, well known physicist, Richard Feynman, presented his now seminal talk—“There’s Plenty of Room at the Bottom”¹—where he described a world of miniature manufacturing machines able to construct smaller and smaller versions of themselves until we were talking of truly small devices and/or materials even at molecular and atomistic levels.

Feynman’s talk 47 years ago presaged the introduction of MEMS—Micro-Electronic Mechanical Systems—“machines” or devices that are only on the order of hundreds of microns (10^{-6} meters) in size. These “teeny, tiny” machines stand poised to revolutionize our world very much like integrated circuits in 1970 completely changed our ability to compute and communicate through smaller and smaller memory chips that took us to manufacturing resolutions on the submicron level.

It is in fact this chip manufacturing capability that is opening new doors in the world of MEMS and MEMS devices. Whether we realize it or not, MEMS devices/machines are already a large part of our lives. They are used as accelerometer sen-

sors in air bag deployment systems found in modern automobiles—hundreds of millions of sensors now on our busy freeways and interstates. Texas Instruments introduced Digital Mirroring Devices—DMD technology made up of MEMS mirroring devices—to create high resolution flat display screens to compete with plasma TV monitors.

These are only a few of the potential applications one can imagine for these devices. Scientists and engineers worldwide are busily looking at evermore complicated and critical MEMS devices and applications as they imagine a revolution in how we monitor health (“laboratories on a chip”), communicate, drive automobiles and aircraft, or otherwise look to revolutionize our society through this technology.

The BNSL, as well as the US-Mexico Foundation for Science (FUMEC), the University of Texas at El Paso, Sandia National Lab, New Mexico State University, the Autonomous University of the City of Juarez, the National Advanced Materials Laboratory of Chihuahua, are among more than 20 institutions and organizations, participating in the *Paso del Norte MEMS Packaging Cluster*. Rather than focusing on MEMS devices themselves, the Cluster is looking closely at the equally complicated issues of packaging or encapsulating these tiny

and obviously fragile devices. One quickly understands the importance of this line of research and technology development when one considers the particularly daunting task of creating devices that can withstand the extreme environments they are required to function in—automobile engines, aircraft exhaust systems, or even the human body.

The Cluster is already counting as a commercial success the creation this past spring of a new MEMS device company, *TeaM Technology*, which is opening its manufacturing facilities in Ciudad Juarez and incubating its U.S. operations at the BNSL Santa Teresa facility. It is anticipated that TeaM Technology will be only the first of many commercial ventures that will evolve from the MEMS Packaging Cluster activity as its research endeavors create new knowledge and intellectual capital. While, as Feynman said there is “plenty of room at the bottom,” there is also plenty of room for economic expansion based on this exciting new technology.

¹<http://www.zyvex.com/nanotech/feynman.html>

By Paul Maxwell

Board of Directors

Gabriel Ortiz Hernan, Chihuahua, *President*

Al Zapanta, Texas, *Vice President*

Lucinda Vargas, Chihuahua, *Treasurer/Secretary*

Jennifer Sue Bond, Arizona

Richard Ewing, Texas

Rolando Gonzalez Barron, Tamaulipas

Alfredo Roman Gonzalez, Tamaulipas

Jorge de los Santos, Arizona

Ricardo Valenzuela, Sonora

Mary Walshok, California

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