

## **RAMIRO JORDAN**

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### **PROFILE**

Twenty five years of experience creating and leading STEM education, R&D and entrepreneurial organizations and activities in Ibero-America and other regions in the world. A leader in international engineering education research. Proven capabilities in fund raising and creating partnerships, regionally and internationally, among academia, industry, government and multilateral organizations. Extensive experience in education, industry and entrepreneurship.

### **PHILOSOPHY**

Research and education go hand-in-hand. I strongly believe in sharing the knowledge learned in research in a simple and clear fashion, and across diverse borders, so people can further the work into the future. This experience should be brought into undergraduate programs to pass the knowledge, challenge students' curiosity and creativity, and to encourage them to pursue graduate work. I also believe that the results produced by research should be reproducible by the community and be made to benefit us globally. Research and education produce what I refer to as social and business entrepreneurs, our future world leaders.

### **PROFESSIONAL PREPARATION**

- Ph.D. Electrical Engineering, Kansas State University, 1987.
- M.S. Electrical Engineering, Kansas State University, 1984.
- B.E. Electrical Engineering, Universidad Nacional de La Plata, Argentina, 1981.

### **APPOINTMENTS**

#### University of New Mexico

- Assistant Professor, ECE Department, University of New Mexico, Albuquerque, NM, August 1987 – July 1993
- Associate Professor, ECE Department, University of New Mexico, Albuquerque, NM, August 1993 – Present
- Associate Chair of ECE-UNM, Undergraduate Programs, August 2001 – December 2003.
- Associate Dean of Engineering, International Programs, UNM, August 2012 – Present.
- Associate Chair of ECE-UNM, Undergraduate Programs, August 2011 – May 2014.
- Interim Chair, ECE-UNM, 2013.

#### ISTEC (Ibero-American Science & Technology Education Consortium)

- Founder & Executive Director/President, ISTEC, 1990-2000
- Board Member, ISTEC, 1990-2000
- VP of Strategy and Planning, ISTEC, 2001-2007
- Executive Vice-President, ISTEC, 2008-2011
- Board Member, ISTEC, 2013-Present

- Director, Los Libertadores Initiative, the ISTE Science and Technology Entrepreneurship for Economic Development Program, 1990-Present

#### GINET (Global Innovation Network for Entrepreneurship and Technology)

- Founder & Board Member, Global Innovation Network for Entrepreneurship and Technology (GINET), 2013-Present.

#### Gridline Communications Holdings, Inc.

- Executive VP & Chief Development Officer, responsible for business development, identification of emerging technologies, R&D, and fund raising, Gridline Communications Holdings, Inc., 2006-2009
- Member of advisory team for Gridline Communications Holdings, Inc., 2011

#### Universidad de Aquino, Bolivia

- President, Universidad de Aquino, Bolivia, 2004

#### Motorola

- Director of University Relations, Motorola Global Software Group, 2000-2002

#### IFEES (International Federation of Engineering Education Societies)

- President 2018 -2020
- Co-Founder 2006
- Executive Committee, International Federation of Engineering Education Societies (IFEES), 2009- 2011
- Special Advisor to IFEES President Elect, 2011

#### ASEE (American Society for Engineering Education)

- International Committee Member, ASEE, [www.asee.org](http://www.asee.org), 2008, 2009, 2010

#### Organization of American States (OAS) EftA

- Co-Founder & Executive Committee Member, Engineering for the Americas (EftA), Organization of American States, [www.efta.oas.org](http://www.efta.oas.org), 2003, 2008, 2009, 2010, 2011

#### United Nations

- IT Advisor to United Nations Latin American Ambassadors, 1999-2000

#### NSF (National Science Foundation)

- Panel Member, National Sciences Foundation (NSF) Division of Research, Evaluation, Dissemination, and Applications of Advanced Technologies Program, 1994-1995

#### Unión Panamericana de Asociaciones de Ingenieros

- Executive Committee, Unión Panamericana de Asociaciones de Ingenieros, 2011-Present

#### GDEC (Global Engineering Deans Council)

- UNM representative for Latin American Chapter of Global Engineering Deans Council (GEDC), 2012-Present
- UNM representative to the Global Engineering Deans Council (GEDC), 2012-Present

#### IADB (Inter-American Development Bank)

- Member of Board of IT Advisors to President of Inter-American Development Bank (IADB), 1999-2000

#### Comisión Sectorial de Investigación Científica

- Panel Member, CSIC - Comisión Sectorial de Investigación Científica (equivalent to USA NSF), Uruguay, 1997

#### COLCIENCIAS

- Panel Member, COLCIENCIAS (equivalent to USA NSF), Colombia, 1995-1997

#### eDoorways International

- Member of Board of Directors, eDoorways International, 2011-Present

## **PROFESSIONAL AND SYNERGESTIC ACCOMPLISHMENTS**

- **ISTEC**

Founder/President/Board member of the Ibero-American Science and Technology Education Consortium (ISTEC) (<http://www.istec.org>). ISTEC, created in 1990, is the outcome of a R&D effort in Engineering Education in Ibero-America funded by Motorola, Inc. which addressed questions related to the effectiveness of engineering education and research in Ibero-America and its socio-economic impact. ISTEC is a non-profit organization composed of more than one hundred member institutions (industrial, academic, multilateral, and governmental) in the Americas and Iberian Peninsula. The Consortium fosters common goals regarding the promotion of education, technology transfer, research and development, culture of quality and entrepreneurship. Our partnership seeks to provide access to the talent available in universities and R&D centers in many countries, to enhance a quality-trained workforce, and to explore new business opportunities. The benefits to the countries that participate in the consortium are enhanced educational levels in science and engineering, investment opportunities, support for existing industries, enriched economic development, access to international scientific communities, access to R&D centers, and self-sufficiency using the latest technology. The ISTEC model is currently being replicated in other regions of the world.

- **Khoros**

Member of the Khoros Group, a highly successful spinoff of ECE-UNM that created Khoros, open source software that integrated multidimensional data analysis, data visualization, visual programming, and automated software development into a system for creating turnkey solutions. Khoros was a standard platform for software development for many years, and outperformed MATLAB and LabView in data processing, data visualization, and graphical programming.

Led development of algorithm libraries that performed N-dimensions DSP operations, N-dimensional linear algebra, the first multidimensional Wavelet transforms, and many novel spectral estimation techniques. Pushed the envelope in distributed and parallel computing, installing Khoros on all Cray supercomputers. In partnership with ISTEC, deployed the first supercomputer (CRAY Y-MP ) in Latin America at the Universidad Nacional Autónoma de Mexico (UNAM) in 1991.

- **Khoral Research Inc. (KRI)**

Founding member of Khoral Research Inc. (KRI). Founded in 1992 by the creators of Khoros, The mission of KRI was to empower the scientific and technological community by improving productivity and facilitating collaboration. KRI accomplished this by establishing the family of Khoros software products and services as the preeminent solution for image processing, data exploration, and visualization and software development.

- **IT Challenge for Ibero-America, 1999-2010**

Via ISTEC and Motorola, sponsored conferences, workshops and forums throughout Ibero-America to catalyze social and economic development for the decade 2000-2010. Invited governments, academia, multilateral organizations, R&D centers and the private sector to

analyze technology needs, strengths and expectations, resulting in an Information Technology (IT) agenda and commitments to implement it.

Direct results of the IT Challenge include:

- Strategic alliances among the public and private sector, academia and international organizations: *Ex: NSF, CONACYT-Mexico, OAS, UN, IADB, CAF, other.*
- New and enhanced policies for science and technology: *co-founded OAS-EftA, IADB -joint actions to implement IT policies and programs; UN collaboration in IT - ECOSOC, innovated S&T policies with governments throughout the region.*
- Creation of networks of excellence for education and R&D: *CEITEC, CoE at Universidad de Monterrey.*
- Investment in education and leadership: *labs, equipment grants & licenses, accreditation – GRANA, student/faculty exchange programs (mobility); educational workshops*
- Creation of favorable environments to foster free trade and competitiveness: *entrepreneurial activities; TECNOPUC and others.*
- Creation of adequate content on the Internet considering social and cultural values
- Creation and enhancement of information technology infrastructure
- Universal access and open standards: *ISTEC-OAS Portal; Digital Library*
- Coordinated several IT hemispheric summits with OAS.
- Replicated the ISTEC model in other parts of the world.

Motorola committed \$500,000 for 2000-2004, with additional grants for equipment and licensing. Many organizations augmented or matched these funds, including the Inter-American Development Bank, Organizations of American States, Corporacion Andina de Fomento, CONACYT, CNPQ, FAPESP, COLCIENCIAS, CSIC, SANDIA National Laboratories, HP, Sun Microsystems, Microsoft, Nortel Networks, CISCO, FreeScale and others.

- **Centers of Excellence**

- **Center for Advanced Electronic Technology (CEITEC), 2002**

Through ISTEC and in collaboration with Motorola and the Brazilian government, created CEITEC, a highly successful Center of Excellence in microelectronics and nanotechnology in Brazil. CEITEC is an initiative of the State of Rio Grande do Sul funded by the Brazilian S&T Ministry. It fosters local development of high technology and expertise in microelectronics. CEITEC became a public-private company in 2008.

CEITEC's charter is to create a solid foundation in semiconductors education, research, development, design, manufacture and sales to meet the high demand of the microelectronics markets in Brazil and South America, while generating local businesses, jobs and revenues. CEITEC built the first submicron CMOS prototyping and production facilities in Latin America, driving and stimulating advanced CMOS capability. CEITEC has R&D partnership with companies worldwide and provides strong support for advanced electronics technology and materials innovation in Latin America. CEITEC serves as an incubator for Electronic Systems and IC Design start-ups.

- **University of Monterrey Center of Excellence, Mexico**

- **TECNOPUC, Brazil**
- **GINET**  
Founding member of the Global Innovation Network for Entrepreneurship and Technology (GINET). The goal of GINET is to create a Global Innovation Network of Entrepreneurial Programs among Academia, Industry, Research & Development Centers, Governments, Investors/Mentors, Multilateral Organizations, and Individuals/Visionaries/Entrepreneurs (serial and first time). The objective is to identify innovative ideas, services, applications, prototypes, and products and through strategic alliances with investors, industry and government agencies, bring these innovations to the marketplace ([www.ginetllc.com](http://www.ginetllc.com)).
- **United Nations Science & Technology bylaws**  
Through ISTECON, worked with United Nations ambassadors from Latin America, Asia, Africa and Europe to incorporate S&T policies in the Socio-Economic Council of the UN. Also, with the assistance of Motorola and other multinational companies, assisted governments in improving their S&T legislation.
- **EftA – Engineering for the Americas, Organization of American States (OAS)**  
Cofounder, Member of Executive Committee. The vision of EftA is to promote economic and social development through quality engineering education for innovation and hemispheric collaboration in job creation; its motto is: “Fostering Growth through Quality Engineering.”
- **IFEES – International Federation of Engineering Education Societies**  
Cofounder, current member of the Executive Committee and VP for the Americas and Africa. IFEES is an international, non-profit, non-governmental federation composed of Engineering Education Societies, Industry and others. The mission of IFEES is to enhance the effectiveness of member organizations and to contribute to the improvement of engineering education around the world.

## EDUCATIONAL INITIATIVES

- **Research and Teaching Labs in Ibero-America**  
Replicated ECE-UNM microprocessor labs and content at over 200 sites, mainly in Ibero-America, training over 500,000 engineers using equipment donated by Motorola. Similar efforts were carried out with HP, Sun Microsystems, Nortel Networks, Microsoft, and many other companies. (UNM-ISTECON)
- **Digital Signal/Imaging Processing Training and Labs in Ibero-America**  
In 1995 partnered with UNICAMP to develop a fully interactive Internet on-line Digital Image Processing (DIP) course based on Khoros. Over two million downloads of the DIP course from USA Khoros site and mirror sites in Japan, Brazil and Germany. Funding from the Organization of American States sponsored deployment of over 500 Khoros labs in Ibero-America. (UNM-ISTECON)

- **GRANA-ISTEC™ Software Environment for Accreditation and Certification 2007-Present**

Co-creator of GRANA-ISTEC™ (Generation of Resources for Accreditation of Academic Programs Nations of America), an evaluation system aligned to the traditions and regional contexts of institutions of higher education that is responsive to the increasing demands for globalization in engineering education. The GRANA-ISTEC™ philosophy promotes an institutional culture of quality, emphasizing the training of individuals who will make social contributions, promoting a vision of development that is regionally and globally relevant. The evaluation system is recommended for institutions that want to enhance academic capacity and competitiveness in the global community and consists of five areas: (1) training of internal and external evaluators, (2) continuous updating of quality indicators and procedures, (3) process and procedures, (4) online assessment system, and (5) system for monitoring continuous improvement of educational programs

The GRANA-ISTEC™ program has had active participation in the OAS EftA initiative that seeks to establish mechanisms for education reform in the Latin America region. EftA and GRANA-ISTEC™ address the needs of various sectors of society by: (a) encouraging the development of engineers with skills that are certifiable by transparent systems, (b) enhancing professional mobility, (c) ensuring adequate levels of investment in engineering curriculum and program development, and (d) supporting regional economic growth. To date, GRANA-ISTEC™ has trained 600 external reviewers and made external assessments in 15 Latin American countries.

- **Innovation-Plaza**

In 2011, created and equipped ECE-UNM Innovation-Plaza (Corporate sponsors Quanser & National Instruments). The Innovation-Plaza helps bridge the gap connecting Math, Physics and Chemistry to Engineering at a very early stage by linking theory to real world experience. The Innovation-Plaza realizes the creativity and innovation of students, improves retention and graduation rates and fosters entrepreneurship. Through the Innovation-Plaza, three undergraduate teams have won annual UNM Business Plan Competitions and some student projects have been integrated in commercial products. The intent is to follow the model of the microprocessor and Khoros labs and deploy and connect these labs throughout Ibero-America. (UNM-ISTEC)

- **Student Contests**

Involved for over 10 years in the organization and fund raising for awards and travel costs for regional and final student design contests. Worked with industry and other NGOS in fund raising. (UNM-ISTEC)

- **Business Plan Competitions**

In partnership with the Anderson School of Management (ASM) we are encouraging undergraduate and graduate engineering students to participate in the UNM Business Plan competitions. In the past three years (2011-2014) we had four groups of undergraduate students, junior and senior, win second and third places. Coaching is also being provided by the ASM to engineering students on how to write business plans, how to present, marketing, and accounting.

**Outreach Programs (August 2011 - May 2014)**

Developed outreach program to recruit high-school students into engineering. Through this program, students earn university credit while in high-school. Qualified high school faculty are certified as UNM faculty to facilitate this program. ECE-UNM senior students act as ambassadors, working with disadvantaged middle school students and encouraging them to consider engineering as a career.

- **Recruitment**

The ISTECON Consortium is a great network for recruiting students in exchange program and for graduate study. In addition, through ISTECON we attract faculty and staff for sabbaticals. Thanks to ISTECON UNM has recruited over well over 500 students.

- **Agreements between UNM and International Academia**

- **Graduate Double Degree Programs (MS, PhD)**

Led initiative to establish Graduate Double Degree program (2004) where UNM partners with strategic international universities to offer graduate degrees that provide increased mobility and globalization. Half of the required credits are taken at UNM and half at the partnering university. Credits can transfer to both universities. A joint committee is assigned for thesis and dissertation. Once fulfilled, the student receives the MS or PhD from both institutions.

**Signed Agreements:**

Argentina: UNLP (2013)

Bolivia: UPB (2008)

Brazil: UNICAMP (2005), PUCRS (2013), USP (2013), PUCRIO (2013)

Colombia: UAO (2012), UDFJC (2012)

Chile: UCV (2011), UC (2007)

China: SJTU (2009)

Ecuador: REDU (2013) (Network of top 11 academic institutions in Ecuador)

Egypt: Sinai University (2013)

Germany: U. of Hamburg (2013)

India: AMRITA (2012)

Mexico: ITESM (2012), UdG (2013)

Panama: UTP (2013)

Peru: PUCP (2012), UTEC (2012), UPOCH (2013)

Spain: UPM (2013), Carlos III, U. Complutense (2013), U. de Vigo (2013), U. de Alcala (2013), U. Rey Juan Carlos (2013), U. Autónoma (2013), EOI (2013)

Turkey:

United Kingdom:

Uruguay: UR (2013)

- **Shared Credit (4+1) Program**

Led effort to establish Shared Credit (4+1) program, in which students in Ibero-America work on a BS for 4 years in their home country, then attend UNM the fifth year. There is agreement between partnering institutions that credits will transfer to both universities. When the student earns the BS degree in their home country, they also receive a MS from UNM. This agreement became active 2014, and all institutions listed above have signed or are in process of signing with UNM.

- **Government Agreements**
  - HEC – Pakistani Government (signed 2012)
    - Fall 2013 - Over 6000 applicants to 750 graduate scholarships fully funded by the Pakistani government; UNM is the only US academic institution on the list
  - CAPES – Brazilian Government (on hold)
  - COLCIENCIAS – Colombian Government (in progress)
  - CONACYT – Mexican Government (complete, updates pending)
- **Entrepreneurship and Technology Management Program (ETM)**

Collaborated with UNM business school to create the graduate ETM program (MS, PhD), offered Spring 2015. This program is not an MBA. It is designed to analyze and design ecosystems for entrepreneurship with an international flavor to facilitate the commercialization of technology. Topics include tech parks, tech transfer, IP protection and licensing, incubation of companies, etc. The program is networked across universities and is part of the Graduate Double Degree program.
- **Digital Libraries**

Led effort to provide access to technical information by networking academic university libraries, urging them to share their collections, and negotiated with publishers for access to their content. IFEEES is now replicating this effort world-wide. (UNM-ISTEC)
- **Endowed Chair**

Participated in the creation of the Prince of Asturias Endowed Chair in the UNM School of Engineering.
- **Distance Education**
  - Developed “Portal of the Americas” for the Organization of American States for distance education.
  - Led development of Spanish language UNM engineering courses which were broadcast via HISPASAT Satellite to Ibero-American educational institutions. (UNM-ISTEC)
  - Developed fully interactive online courses using Khoros. (UNM-ISTEC-KRI)
  - Developing online content in multiple languages using Dotsub technology (UNM-ISTEC-GINET)

## **SABBATICALS / LEAVES OF ABSENCE**

- Sabbatical: Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil, 1995
- Leave of Absence: Director of University Relations, Motorola Global Software Group: Worldwide University Relations: training, education, R&D, spinoffs, laboratory setups. 2000-2002
- Leave of Absence: President, Universidad de Aquino, Bolivia, 2004
- Leave of Absence: Executive VP & Chief Development Officer, responsible for business development, identification of emerging technologies, R&D, and fund raising, Gridline Communications Holdings, Inc., 2006 – July 2009



## FOUNDER/Co-FOUNDER

- Founder, Global Innovation Network for Entrepreneurship and Technology (GINET), 2013
- Founder, Ibero-American Science & Technology Education Consortium (ISTEC), 1990
- Co-Founder, The Khoros Group and Khoros Research Inc. (KRI), Albuquerque NM, 1987
- Co-founder, International Federation of Engineering Education Societies (IFEES), [www.ifees.net](http://www.ifees.net), 2011
- Co-founder, Engineering for the Americas (EftA), Organization of American States, 2003
- Founder, Journal of Computer Science and Technology, <http://journal.info.unlp.edu.ar/>, 2005
- Founder, Revista Iberoamericana de Tecnología en Educación y Educación en Tecnología, (Iberoamerican Journal in Technology in Education and Education in Technology), <http://teyet-revista.info.unlp.edu.ar/>, 2006

## AWARDS AND HONORS

- Bestowed with the *Order of Rio Branco, in the rank of Officer*, by the Brazilian Federal Congress and President, April 24, 1997.
- *Motorola Inc. Silver Quilt Award - Award for Technical Articles*, "A Microcoded Neural Net System and System Interface" – Hardware Design Winner, 1994.
- *Motorola Inc. Silver Quilt Award - Award for Technical Articles*, "A SIMD Neural Network Computer and DSP Engine for Compute Intensive Algorithms," – Hardware Design Winner, 1994.
- *Meritorious Work in Engineering and Computer Education Award*, presented at the 1999 International Conference on Engineering and Computer Education, August 11, 1999.
- *Contributions in Higher Education and Science and Technology Award*, Organization of American States, 2000.
- *International Excellence Award*, University of New Mexico, 2000.
- *International Excellence Award*, University of New Mexico, 2001.
- *Professional Progress Award in Recognition for Significant Success and Accomplishment Midway Through Professional Career*, Kansas State University, 2002.
- *Honorary PhD for contributions to Engineering Education*, Universidad de Aquino, Bolivia, 2002.
- *Achievement Award for Innovations and Accomplishments in Multilingual IT Infrastructure in Engineering Education*, 2003, iNEER-ICEE.
- *Growing with Technology Award*, Cisco Systems, 2004.
- *Harrison Faculty Recognition Award for Innovation, Education and Community Services*, University of New Mexico School of Engineering, 2007.
- *ECE-UNM Lawton-Ellis Award in Recognition for Exemplary Teaching and Research with a Record of Involvement with Student Organizations and Community*, University of New Mexico, 2014.

## PROFESSIONAL MEMBERSHIPS & ACTIVITIES

### Memberships

- Member, Senior IEEE
- Member, ASEE
- Member, IEEE Digital Signal Processing Society
- Member, IEEE Communications Society
- Member, HKN

- Member, Executive Committee, IFEEES
- Member, National Academy of Sciences of Bolivia, Since 1999
- Member, Latin American and Iberian Institute on Engineering Education
- Member, Latin American and Caribbean Consortium of Engineering Institutions (LACCEI)
- Member, EftA

#### Advisory Activities

- Advisor to the IEEE, Latin America Region
- Advisor/Collaborator to Student Platform for Engineering Education (SPEED)

#### Publication Activities

- Reviewer, IEEE Transactions on Circuits and Systems
- Reviewer, IEEE Transactions on Acoustics, Speech, and Signal Processing
- Reviewer, IEEE Transactions on Instrumentation and Measurement
- Reviewer, IEEE Transactions on Education Computers and Electrical Engineering
- Reviewer, IEEE Transactions on Vehicular Technology
- Reviewer, IEEE Communication Letters
- Reviewer, CCCT – Computing, Communications and Control Technologies
- Editor & Reviewer, Journal of Computer Science and Technology, 2005-Present
- Editorial Committee Member & Reviewer, Revista Iberoamericana de Tecnología en Educación y Educación en Tecnología, 2006-Present

#### Conference Activities

- Reviewer, World Engineering Education Forum
- Reviewer, ISTECE General Assembly, 1990-Present
- Reviewer, ICECE (International Conference on Engineering and Computer Education), Rio de Janeiro, August 11-14, 1999
- Reviewer, LACCEI
- Reviewer, CACIC (Congreso Argentino de Ciencias de la Computación)
- Reviewer, CLEI (Latin-American Center for Informatics Studies)
- Co-Chairman for Publications, IEEE International Conference on Acoustics, Speech & Signal Processing, 1990
- Technical Committee, IEEE/ACM International Conference on Engineering and Computer Education, August 11-14, Rio de Janeiro, Brazil, 1999.
- Organizing Committee, World Engineering Education Forum, 2012 - Present
- Organizing Committee Chair, Global Student Design Challenges , 2011 - Present
- General Chair & Member of the Organizing Committee of the ISTECE General Assemblies, 1990-Present
- Organizing Committee, IEEE Seventh thru Ninth International Caribbean Conference on Devices, Circuits and Systems
- Advisory Committee, XII Congreso Internacional en Innovación Tecnología Informática, Buenos Aires, Argentina, 2012, 2013, 2014
- Organizing Committee, LACCEI
- Organizing Committee, IFEEES

- Member of Executive Office of ICEE 2000, International Conference on Engineering Education, Taipei, Taiwan, August 14-16, 2000
- Program Committee, ICEE

#### Motorola-ISTEC IT Challenge Events Organized

- 1st ISTEC-Motorola IT Challenge, S&T Policies for Mexico, Cuernavaca, Morelos Mexico, November 28-29, 2000
- 2nd. ISTEC-Motorola IT Challenge, Albuquerque, NM, USA, First Annual Research and Development Summit (AIRDS), May 7-9, 2001
- 3rd ISTEC-Motorola IT Challenge, II Encuentro: Sociedad y Tecnologías de la Información, Santiago de Chile, Chile, December 13-14, 2001
- Annual Iberoamerican Research & Development Summit (AIRDS), Albuquerque, NM, USA, May 29-30, 2002
- “Ibero-American Summit on Engineering Education”, a priority of all Heads of State of the Latin and Caribbean Region, ([www.efta.oas.org](http://www.efta.oas.org)), March 24-27, 2003
- Engineering for the Americas Symposium, Lima, Peru, November 29 – December 2, 2005
- Discussion Forum on Policies for Scientific and Technological Development in Bolivia, La Paz, Bolivia, October 10-11, 2002
- Discussion of Scientific and Technological Development in Colombia, Corporación Universitaria Autónoma de Occidente (CUAO), Cali, Colombia, November 8, 2002
- Panamá as a Scientific / Technological platform and Digital Crossroads for the Americas; Accepting the Challenge of Information Technologies, Panama, November 19, 2002
- Panamá as a Scientific / Technological platform and Digital Crossroads for the Americas; Accepting the Challenge of Information Technologies”, Panamá City, Panamá, November 19, 2002
- Uruguay IT Challenge – June 2001
- Spain IT Challenge – March 2003
- Ecuador IT Challenge – June 2003
- Annual Ibero-American Research and Development Summit, UNM, New Mexico, USA, May 29-30, 2002
- III Encuentro Sociedad y Tecnologías de la Información, IT Challenge, “Education and the Digital Divide”, Universidad de Chile, December 12-13, 2002
- 10th ISTEC-Motorola IT Challenge, Engineering Education for the Americas, San Jose dos Campos, Brazil, March 24-26, 2003
- Extension to IT Challenges: Science and Technology Entrepreneurship for Economic Development, Campinas, Brazil, Dec 5-6, 2005

#### **UNM COMMITTEES**

- Member of UNM Faculty Senate and Operations Committee of the Faculty Senate, 2010-2012
- ECE Computer Use Committee
- ECE Computer Use and Teaching Labs Committee
- ECE Laboratories Committee
- ECE IT Committee
- Graduate Committee for Minority Students
- UNM Undergraduate Education Committee

- ECE Graduate and Undergraduate Program Committees
- UNM International Affairs Council member
- Faculty Concilium on Latin America and Iberia, 1999-Present
- GEO Advisory Board
- Vice-Provost's Committee for International Programs
- SOE Dean's Advisory Committee
- ECE CompE and EE Search Committees
  - Microelectronics Search Committee
  - Telecom/DSP Search Committee
- ECE Strategic Planning
- ECE Awards Committee
- Extended University Committee, liaison to SOE

### **VISITING PROFFORSHIPS (Incomplete List)**

- Universidad Nacional de La Plata, Argentina
- Universidad Abierta Interamericana, Argentina
- Universidad Católica de Bolivia, Bolivia
- Universidad Privada Boliviana, Bolivia
- Universidad Privada Santa Cruz de la Sierra, Bolivia
- Universidade Estadual de Campinas, Brazil
- Pontificia Universidade do Rio Grande do Sul, Brazil
- Universidad Javeriana, Colombia
- Universidad del Valle, Colombia
- Universidad Autónoma de Occidente, Colombia
- Particular de Loja, Ecuador
- Escuela Politécnica Nacional, Ecuador
- Universidad Tecnológica Equinoccial, Ecuador
- Universidad de Guadalajara, Mexico
- Universidad Nacional Autónoma de México, México
- Pontificia Universidad Católica de Peru, Peru
- Universidad de Ingeniería y Tecnología, Perú
- Universidad de Vigo, Spain
- Universidad Carlos Tercero, Spain
- Universidad Simón Bolívar, Venezuela

### **UNM COURSES TAUGHT (Undergraduate and Graduate levels)**

- Introduction to C programming (in-class, on-line)
- Intermediate Programming and Engineering Problem Solving (in-class, on-line)
- Computer Logic Design (in-class, on-line)
- Signals and Systems (in-class, on-line)
- Introduction to Computer Architecture and Organization (in-class)
- Intermediate Logic Design (in-class)
- Probabilistic Methods in Engineering [Probabilistic Methods in Electrical Engineering] (in-class)
- Microprocessors (*created*) (in-class)

- Computer Engineering Design Project (in-class)
- Introduction to Digital Signal Processing (in-class, on-line)
- Introduction to Computer Networks (*created*) (in-class, on-line)
- Introduction to Communication Systems (in-class)
- Wireless Communications (*created*) (in-class, on-line)
- Undergraduate Problems (in-class)
- Engineering Honors Seminar (in-class)
- Pattern Recognition (in-class)
- Digital Image Processing (in-class, on-line)
- Digital Signal Processing (in-class, on-line)
- Advanced Networking Topics (*created*) (in-class, on-line)
- Probability Theory and Stochastic Processes (Random Signal Processing) (in-class)
- Digital Communication Theory (in-class)
- Signal Detection and Estimation (in-class)
- Spread Spectrum Communications (in-class)
- Information Theory and Coding (in-class)
- Adaptive Filtering (in-class)
- Advanced Topics in DSP (*created*) (in-class)

## **LABORATORY DEVELOPMENT AT UNM**

- Microprocessor/Microcontroller Lab
- Chips & Salsa Gateway, 2001-2003
  - Video and Audio Streaming
  - Course Content Development, Administration and Maintenance
  - Microsoft, Sun Microsystems, Hewlett-Packard
- Motorola Benchmark, 2001
  - M-CORE
  - DSP 586XX
- Multi-Dimensional Signal Processing Lab
  - Khoros
  - Sun Microsystems, DEC, Hewlett-Packard
- Digital Signal Processing Lab, 2002
  - Texas Instruments
- Software Defined Radio Lab, 2014
  - National Instruments

## **GRADUATE STUDENTS**

### **Graduated MS Students, Committee Chair**

- Ram Attaluri
- Sandilya Birudavolu Ulises
- Hung Nguyen
- Vinod Ramdas
- Michael Thurgood
- Fabricio Ourique
- Daniel Vargas

- Victor Vergara
- Murad Hijazi
- Ulises Lay de Gracia
- I'naki Gasteluiturri
- Alexandre Franco
- Noe Mendivil
- Jason Krein
- Luis Martinez
- Steven Aragon
- Ian Wilcox
- Alma Linan Rodriguez
- Carlos Adrian Martinez Yero
- Scott Watson
- Glen Abousleman
- Larry Canady
- Ali Asgharzadeh
- Luay Shawwa
- Arun Tirumalai
- Jon King
- Vijayakumar Raghavendran
- David Modl
- Vinicius Licks
- Beiqi Gu
- Jorge Perez
- Olajide Durosinmi
- Shaibal Shovon Saha
- Jeremy Worley
- Irteza Rana

**Graduated MS Students, Committee Member (Incomplete List)**

- Cesar Carranza
- Bai Hao, MS
- Uday Kadaboina
- Ding Li, MS
- Cherish Franco
- Miguel Gallegos
- David Manzaneres
- Ruifu Zhou
- Bokai Zu
- Abdul-Jelili O.Ade-Bello
- Ismail Guvenc

**Graduated PhD Students, Committee Chair**

- Vinicius Licks

- Henry Jerez, PhD
- Fabricio Ourique
- Patrick Valdez, PhD
- Jose Ricardo Otazo Torres
- Jim Andrews
- Willie Kiser
- Rene Arechiga
- Chris Keiser

#### **Graduated PhD Students, Committee Member (Incomplete List)**

- Soraya Abad-Mota
- Victor Vergara
- Simon Barriga
- Alonzo Vera
- Jorge Parra
- Renato Borges
- Jorge Crichigno
- Feng Xu
- Quach Tu-Toan
- Renato Borges, PhD, (UNICAMP-UNM Double Degree Program), 2009
- Carla Agurto
- Paul Rodriguez
- Victor Manuel Murray Herrera
- Simon Barriga
- Sergio Murillo
- Paulo Franco
- Jonio Cavelcanti, PhD Candidate

#### **Current MS Students, Committee Chair**

- Vicente Leyba, MS
- Edgar Chavez, MS
- Brian Brahms, MS

#### **Current PhD Students, Committee Chair**

- Zhiwu Xei, PhD
- Claudio Silva, PhD, (UNM-UNICAMP double degree)
- Eric Ehrhardt Hamke, PhD
- Anees Abrol, PhD

#### **SHORT COURSES (Incomplete List)**

##### Digital Signal Processing,

- Interactive On-line Course, over 2 million downloads

##### Signal Processing in Medical Applications: Hardware/Software Issues

- Universidad de Vigo, Vigo, España, 1991.

Digital Signal Processing (DSP): Theory to Hardware Implementation (Hands-on experiments on Texas Instruments TMS320C25 and TMS320C30)

- University of New Mexico, USA, 1991.

Digital Image Processing

- Universidad Politécnica de Madrid, Electrical Engineering Department, Madrid, Spain, March 1991.
- Universidad Nacional Autónoma de México, Electrical Engineering Department, Mexico City, Mexico, March 1992.

Digital Signal Processing (DSP): Theory to Hardware Implementation (Hands-on experiments on Texas Instruments TMS320C30)

- UNM, Albuquerque NM, USA, 1992.

Khoros: A Software Development Environment, Applications in Image Processing

- Universidad Autónoma Metropolitana, México DF, México, 1992.

Microprocessors, Microcontrollers and DSP

- Universidad Autónoma Metropolitana, Electrical Engineering Department, Mexico City, Mexico, November 1993.

Multidimensional Signal Processing

- Escuela Politécnica Nacional, Electrical Engineering Department, Quito, Ecuador, April 1995.

Digital Image Processing with Khoros 2

- Universidad de La Plata, La Plata, Argentina, 1995.
- Short Course at the Simposio Nacional de Reconocimiento de Formas y Análisis de Imágenes”, Universidad de Córdoba, Córdoba, Spain, March 1995.
- Universidad de Córdoba, Córdoba, España, 1995.
- Universidad de Campinas, Campinas, Brazil, 1995 y 1996.
- Universidad Carlos III, Madrid, Spain, July 1996.
- Universidad de la Republica, Montevideo, Uruguay, October 1996.
- Universidad Carlos III, Madrid, España, 1996.
- Universidad de la República, Montevideo, Uruguay, 1996.
- Universidad Católica del Perú, Lima, Peru, February 1997.

Digital Image Processing with Khoros 2 and Software Development

- Broadcast to IberoAmerica via HISPASAT, 1999
- Khoros Research Inc., Albuquerque, NM, USA. Training and short courses delivered 1995-2002.

Computer Networks

- Broadcast to IberoAmerica via HISPASAT, 1999
- Various on site courses, 1999-2005

Computer Networks, 1999

- Various on site training 1999-2005

Wireless Communications, 2002

- Various on site training 2002-Present

Digital Signal Processing

- Universidad Privada Boliviana, Cochabamba, Bolivia, May 2014

Digital Image Processing

- Universidad Privada Boliviana, Cochabamba, Bolivia, May 2014



## RESEARCH ACTIVITIES

- Extensive research in Engineering education
- Designed a highly scalable and adaptable Neural Network computer, first of its kind. Awarded two Motorola Inc. Silver Quilt Awards in 1994.
- Designed educational microprocessor and microcontroller boards for Motorola
- Distributed and parallel computing, CRAY research
- Developed DSP and DIP algorithms for MRI imaging and spectroscopy.
- Developed the first multidimensional Wavelet transform algorithms and many novel spectral estimation techniques
- Developed water marking algorithms
- Extensive DSP/Communication algorithm development for cognitive radio
- Redesigned campus-wide network
- Development of the Chips and Salsa Ibero-American Gateway in Science & Technology Education
- Developed QUEJESE.NET Web Services Portal at Universidad Privada de Santa Cruz de la Sierra (UPSA), Bolivia, 2004
- Research in Cognitive Radio, Software Defined Network, Machine Learning and Embedded Systems

## SOURCES OF FUNDING (incomplete list)

### ISTEC, Inc.:

- Membership Fees, 1990 – 2014, \$3,960,000

### ISTEC, Inc. to UNM-ECE:

- Development of the Chips and Salsa Ibero-American Portal in Science & Technology Education: ISTEC lab at ECE, 2001-2003, \$180,000

### State of New Mexico:

- ISTEC@UNM Funding from 1993 to 2014, \$3,628,885

### K&A Wireless:

- 4G-LTE Chip Design SBIR, 2012, \$15,000

### Raytheon:

- TransparentSky, 2012, \$25,000

### Texas Instruments:

- DSP Laboratory donation, 2002, \$40,000

### Digital Equipment Corporation:

- An Interactive image Processing System and a Knowledge-based Image Processing/Computer Vision System (XVisin/Xpert)", Principal Investigators: J. Rasure, and R. Jordan, Digital Equipment\_Corporation equipment grant, 1988-89, \$220,000

#### Motorola:

- “Computer Board Design”, Co-Principal Investigators: R. Jordan, H. Pollard, and C.T. Abdallah, Funded by Motorola, Phoenix, AZ, 1990. \$59,540
- “Science and Technology Hemispheric Survey”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1990, \$15,000
- “Development of a Neural Net processor board”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1991-92. \$60,000
- “Addendum to Development of a Neural Net processor board”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1991-92. \$26,360
- “Development of a Power PC board and training”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1995-96. \$35,000
- “Real-time Signal Processing Laboratory”, Principal Investigators: H. Pollard, and R. Jordan, equipment grant by Motorola Inc., 1996. \$15,000
- “Microprocessor Laboratory”, Principal Investigators: H. Pollard, and R. Jordan, equipment grant by Motorola Inc., 1996. \$30,000
- “Development of educational materials”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1996. \$7,500
- “ASIA training”, Principal Investigators: H. Pollard, and R. Jordan, Funded by Motorola Inc., 1996. \$14,500
- “Motorola Microcontrollers and DSP technology for R&D Laboratories”, Principal Investigators: R. Jordan and H. Pollard, Equipment Grant by Motorola Inc. for ISTEC R&D Laboratory Initiative for ISTEC, 1999, \$350,000
- “M-CORE Technology Licensing to ISTEC” Principal Investigators: R. Jordan and H. Pollard, Technology Grant by Motorola Inc. for ISTEC R&D Laboratory Initiative, 1999. (\$1M per academic institution), granted over \$25,000,000
- Motorola Inc., Microcontroller (68HC11,12,05, 07) DSP (56307, 56303, 56811) and Microprocessor (M-CORE) Equipment for ECE Laboratories, 1999, \$50,000.
- “Motorola IT Challenge Events for Ibero-America”, Principal Investigators: R. Jordan and H. Pollard, Motorola Inc., 2000 – 2004, \$500,000 (matching funds from IADB and other)
- DSP laboratory donated by Motorola, 2001-2002, \$80,000

#### Inter-American Development Bank (IADB):

- Matching funds for ISTEC IT Challenges project, 2000-2004. \$500,000

#### Hewlett Packard:

- HP Mobility Grant, Principal Investigators: R. Jordan, C. Cristodoulou, C. Abdallah, M. Pattichis, 2002, \$127,000
- “Hewlett-Packard Instrumentation”, Principal Investigator: R. Jordan, equipment grant by Hewlett-Packard, 1989-90. \$60,000

#### Mentor Graphics/VeriBest Inc.:

- “Software Tools for Electronic Design Automation”, Principal Investigators: H. Pollard and R. Jordan, Software Grant from Mentor Graphics for ISTEC R&D Laboratory Initiative, 1999 - 2004, \$5,000,000

#### Sun Microsystems:

- “IT&T Infrastructure in Ibero-America”, Principal Investigators: R. Jordan and H. Pollard, Equipment Grant by Sun Microsystems, 1999, \$188,299
- Sun Microsystems Equipment Grant for ECE labs, 1999, \$190,000
- Sun Microsystems Equipment Grant, 2002, \$100,000

#### National Science Foundation:

- “Virtual Library Workshop”, Principal Investigators: Johann van Reenen and R. Jordan, Funded by the National Science Foundation, 1999, \$20,000
- NSF PASI, Reconfigurable Systems and Sensor Networks, Cochabamba, Bolivia. June 7-18, 2004, \$50,000

#### 3B Graphic Computersysteme (GMBH):

- “Extension of XVISION to Medical Imaging”, Principal Investigator: R. Jordan, Funded by 3B Graphic Computersysteme (GMBH), Frankfurt, Germany, 1988-89. \$13,486

#### Sandia National Laboratories:

- “Satellite Data Signal Processing”, Principal Investigator: R. Jordan, , 1988-89, \$55,000
- “AT Bus Arbitration Scheme for a Multiprocessor Environment”, Principal Investigator: R. Jordan, Funded by Sandia National Laboratories, Albuquerque, NM, 1988-89. \$49,000
- “Addendum to AT Bus Arbitration Scheme for a Multiprocessor Environment”, Principal Investigator: R. Jordan, Funded by Sandia National Laboratories, Albuquerque, NM, 1989-90. -\$127,368

#### UNM Center for Non-invasive Diagnosis:

- “Design, implementation and conversion to Khoros of multidimensional signal processing routines”, Principal Investigator: R. Jordan, Funded by UNM Center for Non-invasive Diagnosis, 1990-94. \$100,000

#### John Fluke Corp.:

- “John Fluke Instrumentation”, Principal Investigator: R. Jordan, equipment grant by John Fluke Corp., 1993. \$15,923

#### New Mexico State University:

- “Environmental Courses/ISTEC”, Principal Investigators: M. Glasston, and R. Jordan, Funded by New Mexico State University, 1993, \$17,400

#### Northern Telecom Inc./Nortel Networks:

- ``Real-time information exchange program/ISTEC", Principal Investigators: M. Glasston, and R. Jordan, Funded by Northern Telecom Inc., 1994-95. \$15,000

Office of Naval Research:

- `` Enhancement of Khoros to better support FOA component of ATR", Principal Investigator: R. Jordan, Funded by Office of Naval Research, 1995-97. \$169,238

Organization of American States:

- ``ISTEC-OAS Initiatives", Principal Investigator: R. Jordan, Funded by the Organization of American States, 1999. \$30,000

Synopsys:

- “Software Tools for Electronic Design Automation”, Principal Investigators: H. Pollard and R. Jordan, Software Grant from Synopsys for ISTEC R&D Laboratory Initiative, 1999 –2004 and 2012-2015, \$5,000,000

Dotsub:

- Language translation for online video content for GINET and ISTEC members 2014-present, Dollar amount undetermined at this point.

Silterra:

- Design Contests for ISTEC R&D for chip fabrication, 2011-2015, Dollar amount undetermined at this point.

City of Albuquerque:

- GINET Conference, 2014, \$5,000

Hispanic Chamber of Commerce:

- Business trips to Spain, Brazil, Argentina, 2000-2002, \$15,000

Cadence:

- Student support for Cadence Software Suite, 2005, \$10,000

Universidad Privada de Santa Cruz de la Sierra (UPSA):

- QUEJESE.NET Web Services Portal at Universidad Privada de Santa Cruz de la Sierra (UPSA), Bolivia, 2004, \$5,000

Cray Research:

Xilinx:

National Instruments:

Microsoft:

Quanser:

Free Scale:

Intel:

Cisco:

#### CONACYT-Mexico

- 1 MW Pilot “Green” Ammonia Project I. In collaboration with Universidad Autonoma de Nuevo Leon, Monterrey, Nuevo Leon, Mexico, and GINET-USA and GINET-Mexico. Total amount \$22, 174,801 (\$17,057,539 GINET-USA, \$5,117,262 GINET-Mexico).

## **PUBLICATIONS**

### **Book Chapters and References:**

- [1] Johann Van Reenen, Editor, “Digital Libraries and Virtual Workplaces: Important Initiatives for Latin America in the Information Age,” R. Jordan, Chapter 2, “E-business, E-ideas, E-government, E-policies, and E-education,” Inter-American Agency for Cooperation and Development, Organization of American States, 2002, ISBN 0-8270-4377-5.
- [2] “Kernel Methods for Smart Antennas”, M. Martínez, Ramón, A. Navia, Vázquez, R. Jordán and C. G. Christodoulou, in Intelligent Systems: Techniques and Applications, Chapter 16, Shaker Publishing, Netherlands, 2008.
- [3] A Wavelet Tour of Signal Processing, Stéphane Mallat, Academic Press 1998 ISBN 0-12-466605-1, p. 556: recommends Wavelet Software Toolbox in Khoros developed by Jonio Cavalanti and Ramiro Jordan.

### **Books:**

- [1] Khoros Pro 2000 and Digital Image Processing: A Hands-On Guide, Addison Wesley, 1998.
- [2] Introduction to Communication Systems Using National Instruments Universal Software Peripheral Radio - Lab Manual 2014, Authors: Anees Abrol and Eric Hamke  
Contributors: Carlos Adrian Martinez Yero , Olajide Durosini, Jeffery Love  
Editor: Dr. Ramiro Jordan

### **Technical Reports:**

- [4] Strategic Study in Scientific Data Base Access in Latin America and the Caribbean, Prepared for the United Nations Educational, Scientific and Cultural Organization (UNESCO), August 2001.
- [5] The Reinhardt Turbine and the Fuel Scenario: Clean and Affordable Energy When and Where it is Needed!, T. Reinhardt, R. Jordan, D. Koechner, F. Del Carpio, VV-TEC GmbH, 2011.

## **REVIEWED CONFERENCE PAPERS (Incomplete List)**

- [6] C.T. Abdallah, M. Akbarzadeh, and R. Jordan, “On the Design and Control of Dynamically Decoupled Robots,” Proceedings 1st CRAMS Symposium, Arlington, TX, pp. 26-29, 1990.
- [7] C.T. Abdallah and R. Jordan, “A Positive-real Design for Robotic Manipulators,” Proceedings of the American Control Conference, San Diego, CA, pp. 991-992, 1990.

- [8] C.T. Abdallah, R. Jordan, and B. Horne, "A Positive-Real Hybrid Impedance Design for Robotic Manipulators," Proceedings Robotics and Manufacturing Symposium, Vancouver, Canada, pp. 323-327, 1990.
- [9] Cerda, C.T. Abdallah, and R. Jordan, "Experimental Implementation of MRAC for a DC Servo Motor," Proceedings of the Conference on Decision and Control, Tucson, AZ, pp. 3542--3543, 1992.
- [10] G. Abousleman, R. Jordan, L. Canady, A. Asgharzadeh, D. Koechner and R. Griffey, "A Novel Eigenvector-Based Technique for Spectral Estimation of Time-Domain Data in Medical Imaging," IEEE Symposium on Computer-Based Medical Systems, pp 426-431, University of North Carolina, NC. June 1990.
- [11] L. Canady, R. Jordan, G. Abousleman, A. Asgharzadeh, D. Koechner and R. Griffey, "Time-Domain Analysis of Magnetic Resonance Spectra and Chemical Shift Images," IEEE Symposium on Computer-Based Medical Systems, pp 432-437, University of North Carolina, NC. June 1990.
- [12] A. Asgharzadeh, R. Jordan, G. Abousleman, L. Canady, D. Koechner and R. Griffey, "Applications of Adaptive Analysis in Magnetic Resonance Imaging," IEEE Symposium on Computer-Based Medical Systems, pp 75-80, University of North Carolina, NC. June 1990.
- [13] H. Pollard and R. Jordan, "A New 68030 Based Educational Computer Board," 21st Annual Pittsburgh Conference on Modeling and Simulation, pp 1165-1169, University of Pittsburgh, PA. May 1990.
- [14] J. Worley, R. Jordan and D. Koechner, "Application of DSP Techniques to Nuclear Magnetic Resonance Spectroscopy," Medical Imaging Conference 91, 1991 Nuclear Science Symposium, Santa Fe, New Mexico. November 5-9, 1992.
- [15] L. H. Pollard, R. Jordan, J. King, Jack Bieker "A Microcoded Neural Net System and System Interface," Adaptive Methods and Emergent Techniques for Signal Processing and Communications Conference, Bayona (Vigo), Spain, pp 303-310. June 16-18, 1993.
- [16] J. King, R. Jordan, L. H. Pollard, Jack Bieker "A SIMD Neural Network Computer and DSP Engine for Compute Intensive Algorithms," Adaptive Methods and Emergent Techniques for Signal Processing and Communications Conference, Bayona (Vigo), Spain, June 16-18, 1993, pp 295-302.
- [17] J. Cavalcanti, N. Gonzales, R. Jordan, D. Arantes, et al, "A Multidimensional Wavelet Toolbox for Khoros 2.0" Proceedings of the COST 229 Workshop on Adaptive Systems, Intelligent Approaches, Massively Parallel Computing and Emergent Techniques in Signal Processing and Communications, Bayona (Vigo), Spain, pp 299-304, October 1994.
- [18] L. H. Pollard and R. Jordan, "A Hardware Neural Net System using a Motorola Neural Network Chip and Its Applications," Proceedings of the COST 229 Workshop on Adaptive Systems, Intelligent Approaches, Massively Parallel Computing and Emergent Techniques in Signal Processing and Communications, Bayona (Vigo), Spain, pp 305-309, October 1994.

- [19] J. Rasure, R. Jordan and R. Lotufo, "Teaching Image Processing with Khoros," Invited paper to the First IEEE International Conference on Image Processing, ICIP-94 pp 506-510, Volume I, Nov. 13-16, 1994.
- [20] R. Lotufo and R. Jordan, "WWW Khorosware on Digital Image Processing", Proceedings of SIBGRAPI VIII (Simposio Brasileiro de Computacao Grafica e Processamento de Imagens), Sao Carlos - SP, Brazil, pp. 295-296, October 1995.
- [21] H. Pollard, R. Jordan, M. Glasston, J. Pitkin, D. Docampo, A. Figueras, and M. Miskulin, "Dualism in Distance Education: ISTECS University-Level Initiatives", VI International Conference on Technology and Distance Education: Sharing Experiences around the World, San Jose, Costa Rica, October 1995.
- [22] R. Jordan, H. Pollard, A. Figueiras, D. Docampo and M. Miskulin "The Initiative Approach for Science and Technology Education: Applications of Technology to Disseminate Information", Abstracts of the JISTEC'96, Jerusalem, Israel, pp. S2 71-72, January 1996.
- [23] H. Pollard, R. Jordan, M. Miskulin, D. Docampo and A. Figueiras, "The Ibero-American Science and Technology Education Consortium (ISTEC): A Unified Approach to Scientific Education, Research and Development", Abstracts of the JISTEC'96, Jerusalem, Israel, pp. CP 51-52, January 1996.
- [24] R. Jordan and R. Lotufo, "Interactive Digital Image Processing Course on the World Wide Web, "EEE International Conference on Image Processing, ICIP-96 pp 433-436, Volume II, Sept. 16-19, 1996.
- [25] R. Lotufo and R. Jordan, "Hands-on Digital Image Processing," IEEE Frontiers in Education - 26th Annual Conference, FIE-96 pp 1199-1202, Volume 3, Nov. 6-9, 1996.
- [26] C.T. Abdallah, D. Arantes, G.L. Heileman, D.R. Hush. R. Jordan, R. Lotufo, N. Magotra, H. Pollard, E. Schamiloglu, and R. Whitman, "Interactive DSP Course Development/Teaching Environment," Proceedings of the 1997 IEEE International Conference on Acoustics, Speech, and Signal Processing, Vol. III pp. 2249-2252, Munich, April 1997.
- [27] L. Howard Pollard, Ramiro Jordan, Chaouki Abdallah, Paulo Franco, Mauro Miskulin and Domingo Docampo, "The Ibero-American Science and Technology Education Consortium (ISTEC): A Partnership for Education, Research and Development," Proceedings of the 1998 International Conference on Engineering Education, document 185, Rio de Janeiro, Brazil, August 1998.
- [28] Ramiro Jordan, L. Howard Pollard, Roberto Lotufo, Marisa De Giusti, Domingo Docampo and Francisco Viveros, "The Ibero-American Science and Technology Education Consortium (ISTEC): The Initiative Approach for Science and Technology Education, Research and Development," Proceedings of the 1998 International Conference on Engineering Education, document 186, Rio de Janeiro, Brazil, August 1998.

- [29] Chaouki Abdallah, G. L. Heileman, L. Howard Pollard and Ramiro Jordan, "The Ibero-American Science and Technology Education Consortium (ISTEC): Lessons of Seven Years of Project Oriented Partnership," Proceedings of the 1998 International Conference on Engineering Education, document 187, Rio de Janeiro, Brazil, August 1998.
- [30] Erik L. Ellis and Ramiro Jordan, "Image Registration Extension to the Khorosware DIP Learning Environment," Proceedings of the 1998 SBT/IEEE International Telecommunications Symposium, Vol. I pp 257-260, Sao Paulo, Brazil, August 1998.
- [31] Jeremy Worley and Ramiro Jordan, "A Scalable Khoros Neural Network Toolbox," Proceedings of the 1998 SBT/IEEE International Telecommunications Symposium, Vol. II pp 667-670, Sao Paulo, Brazil, August 1998.
- [32] L. W. Irwin, G. L. Heileman, C. E. Pizano, C. T. Abdallah, and R. Jordan, "The Robustness of Digital Image Watermarks," Proceedings of the International Conference on Image Science, Systems, and Technology, Las Vegas, NV, pp. 82-85, July, 1998.
- [33] Licks, V. ; JORDAN, Ramiro . "Digital Image Watermarking Robust to Geometric Transformations," IEEE International Conference on Image Processing (ICIP 2000), 2000, Vancouver., v. III, p. 690-693.
- [34] R. Jordan, et al, "ISTEC Portal Project," ICEE 2000, International Conference on Engineering Education, Taipei, Taiwan, August 14-16, 2000
- [35] M. Thurgood, R. Jordan, C.T. Abdallah, and M. Pattichis, "Fast Algorithms for Generating the Original and Symmetric PONS Matrices," Proceedings, IEEE Digital Signal Processing Workshop (DSP), Atlanta, GA 2002.
- [36] S. Raghavan, H.N. Jerez, R. Jordan, and C.T. Abdallah, "Wireless Camera and Site Survey Issues over an IEEE 802.11b Based Wireless Network Testbed," Proceedings, IEEE Local Computer Networks Conference, Tampa, FL, June 2002.
- [37] S. Raghavan, H.N. Jerez, C.T. Abdallah and R. Jordan, "Real-time Streaming over an IEEE 802.11b Wireless LAN test bed," 2002 ICPWC Conference.
- [38] H. Jerez, R. Jordan, C.T. Abdallah , J.Van-Reenen , G. Jacquenot, and Daniel Vargas, "WEB-based Enabling of Education and Research in ISTEC The ChipsNSalsa Portal," IEEE International Conference on Engineering Education, Manchester, United Kingdom. August 18-21, 2002.
- [39] H. Jerez, and R. Jordan, "Distributed learning objects and metadata harvesting implementation on the Chips-N-Salsa Project," 2002 MAES International Symposium. Anaheim, California. October 2002.
- [40] D. Vargas, and R. Jordan, "Alternative Approaches for Equalization in Multipath Fading Channels," 2002 MAES International Symposium. Anaheim, California. October 2002.



- [41] P. Rodriguez, M. Pattichis, and R. Jordan, "A radix-2 FFT algorithm for modern single instruction multiple data (SIMD) architectures" *Acoustics, Speech, and Signal Processing*, 2002 IEEE International Conference on (ICASSP), Volume: 3, 2002 Page(s): 3220 -3223.
- [42] V. Licks, F. Ourique, G. Heileman, F. Perez-Gonzalez, R. Jordan. "Performance of Dirty-Paper Codes for Additive White Gaussian Noise and Jitter Channels." *IEEE Workshop of Statistical Signal Processing*, St. Louis, USA, 2003. p. 230-233.
- [43] V. Licks, F. Ourique, F. Perez-Gonzalez, R. Jordan. "The Effect of the Random Jitter Attack on the Bit Error Rate Performance of Spatial Domain Image Watermarking." *IEEE International Conference on Image Processing, Proceedings of ICIP 2003*, Barcelona, Spain, 2003. v. 2. p. 455-458.
- [44] F. Ourique, V. Licks, M. Pattichis, R. Jordan. "Automatic Segmentation of Scanning Electron Microscopy Images for Molecular Aggregation Profiling." *IEEE EMBS 2003 Conference*, Cancun, Mexico, 2003. v. 1. p. 702-705.
- [45] M. Castillo, D. Quintela, R. Jordan, W. Westhoff, W. Moreno, "Wireless Sensor Networks for Flash-Flood Alerting," *Proceedings of the Fifth IEEE International Caracas Conference on Devices, Circuits and Systems*, Dominican Republic, Nov 3-5, 2004.
- [46] V. Licks, F. Ourique, R. Jordan, "Performance bounds on optimal watermarking synchronizers," *Security, Steganography, and Watermarking of Multimedia Contents VI*, San Jose, California, USA, p. 827-837; ISBN/ISSN: 0-8194-5209-2. January 18-22, 2004.
- [47] V. Licks and R. Jordan. "A Performance Bound on Optimal Watermark Synchronizers. *SPIE Security, Steganography and Watermarking of Multimedia Contents VI (EI23)*." Santa Clara, USA, 2004.
- [48] F. Ourique, V. Licks, R. Jordan, "Angle QIM: On Document to Watermark Ratio Analysis," *IEEE 8th International Symposium on Signal Processing and Its Applications*, Sydney, *Proceedings of the IEEE ISSPA'2005*, p.111-114.
- [49] F. Ourique, V. Licks, R. Jordan, "A Theoretical Analysis of the Probability of Error of The Angle QIM," *IEEE 8th International Symposium on Signal Processing and Its Applications*, Sydney. *Proceedings of the IEEE ISSPA'2005*. 2005.
- [50] V. Licks, F. Ourique, R. Jordan, F. Perez-Gonzalez, "An Exact Expression for the Bit Error Rate Probability in Angle QIM Watermarking Under Simultaneous Amplitude Scaling and AWGN Attacks," *IEEE International Conference on Acoustics, Speech, and Signal Processing Conference (ICASSP'05)*, Philadelphia. *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing*. Piscataway: IEEE, 2005. v. 2, p. 801-804.
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the IEEE International Conference on Acoustics, Speech and Signal Processing. IEEE, 2005. v. 2, p. 797-800.

- [52] V. Licks, F. Ourique, R. Jordan, "AQIM: Marca d'gua usando Quantizao de Fase Robusta a Ataques de Escalonamento de Amplitude," 4A. Conferencia Iberoamericana em Sistemas, Cibernetica e Informatica, Orlando. Anais da 4a. Conferencia Iberoamericana en Sistemas, Cibernetica e Informatica, 2005.
- [53] A. Castellanos, A. Bieber, A. Lombana, R. Jordan, J. Leffew, W. Moreno, "Research and Education Network for the America's Region, (RENAR): ISTECS Micro/Nano systems Mobile Training Program, (MTP)", Proceedings of the 6th IEEE International Caribbean Conference on Devices, Circuits and Systems, (ICCDCS), April 2006.
- [54] W. Moreno, R. Jordan, C. Callegari, B. Ramadoss, D. C. Alverson, and J. Garcia, "Ibero-American Science Technology and Education Consortium: ISTECS-Health", 9th International Conference on Engineering Education, San Juan Puerto Rico, July 23-28, 2006.
- [55] Ramiro Jordan, Sul Kassicieh, Alfredo Roldan, Nelmy Jerez, Roberto Lotufo, Roberto Murphy, "Science and Technology Entrepreneurship for Economic Development (SEED)," 9th International Conference on Engineering Education, San Juan Puerto Rico, July 23-28, 2006.
- [56] V. Vergara, R. Jordan, S. E. Barbin, "MIMO Channel  $\sim V$  - Symbol Estimation Duality," Proceedings of the IEEE Vehicular Technology Conference 2006, (VTC2006), Montreal, Canada. September 25-28, 2006.
- [57] R. Jordan, W. Moreno, A. Roldan, C. Christodoulou, S. Kassicieh, "Incorporating Economics, Entrepreneurship and Sustainability in Engineering for the Americas," Proceedings of the 5th Annual ASEE Global Colloquium on Engineering Education, (ASSE2006), October 9-12, 2006.
- [58] Esparragoza, I.E., Larrondo-Petrie, M., Jordan, R., and Paez, J. "Forming the Global Engineer for the Americas: Global Educational Experiences and Opportunities Involving Latin America and the Caribbean," Proceeding of the 2007 ASEE Annual Conference and Exhibition, Honolulu, Hawaii, AC 2007-576. June 24- 27, 2007.
- [59] V. Vergara, R. Jordan, S. E. Barbin, "An Asymptotic Waterfilling Solution for AWGN MIMO System Channels," Proceedings of the 66th IEEE Vehicular Technology Conference, VTC Fall 2007, Baltimore, MD, USA. September 30 –October 3, 2007.
- [60] Lombo, G. Becerra, A. Castellanos, J. Bieber, A. Flores, R. Jordan, W. Moreno, "Developing a Learning Management Model for Nanotechnology: An ISTECS Sponsored Instructional Program for Ibero-America", 6th Annual ASEE Global Colloquium on Engineering Education - "Shaping the Future through Global Partnerships", Istanbul, Turkey, October 1 - 4, 2007.
- [61] M. Petrie, I. Esparagoza, R. Jordan, "Global Engineer for the Americas: Latin American Perspective," Invited paper, 6th ASEE Global Colloquium on Engineering Education, Istanbul, Turkey Oct. 1-4, 2007.

- [62] D. Vallin, J. Gutierrez, R. Palomera, H. Cabra, R. Jordan, W. Moreno, "The GRANA-ISTEC Program to Support Engineering Accreditation Processes In Ibero-America", 6th Annual ASEE Global Colloquium on Engineering Education - "Shaping the Future through Global Partnerships", Istanbul, Turkey, October 1 - 4, 2007.
- [63] R. Jordan, A. Schwarz, A. Roldan, J. Garcia, W. Moreno, "The SEED-ISTEC Program and the Impact of an Entrepreneurship Based Instruction on Engineering Education in Ibero-America", 6th Annual ASEE Global Colloquium on Engineering Education - "Shaping the Future through Global Partnerships", Istanbul, Turkey, October 1 - 4, 2007.
- [64] Zhiwu Xie, Herbert Van de Sompel, Johann van Reenen and Ramiro Jordan, "A Standard-Based Context Sensitive Service Architecture for Digital Object Dissemination", ASIS&T 2007 Annual Meeting, Milwaukee, Wisconsin. October 19-24, 2007.
- [65] R. Otazo, R. Jordan, F-H. Lin and S. Posse, "Superresolution Parallel MRI," Proceedings of the 14th IEEE International Conference on Image Processing (ICIP), San Antonio, USA. pp.III-153-156. 2007.
- [66] V. Vergara, S. Barbin, R. Jordan, "Improving MII Channel Estimation Through Training Symbols Redundancy," Proceedings of the 68th IEEE Vehicular Technology Conference, VTC Fall 2008, Calgary Alberta, Canada. September 21-24, 2008.
- [67] R. Jordan, D. Vallin, "ISTEC-GRANA: Evaluation, Accreditation, and Certification Efforts in Ibero America," ASEE Pittsburg, June 2008.
- [68] Otazo R, Lin FH, Wiggins G, Jordan R, Posse S., "Superresolution parallel spectroscopic imaging," Proceedings of the 16th Annual Meeting of the International Society of Magnetic Resonance in Medicine (ISMRM) , pp. 598, Toronto, Canada, 2008.
- [69] Otazo R, Lin FH, Wiggins G, Jordan R, Posse S., "Superresolution parallel magnetic resonance imaging," Proceedings of the 16th Annual Meeting of the International Society of Magnetic Resonance in Medicine (ISMRM), pp. 1485, Toronto, Canada, 2008.
- [70] M. De Giusti, R. Jordan, W. Moreno, "Twenty years of Ibero American Science and Education Consortium (ISTEC): past, present and future of a collaborative work", International Conference on Engineering Education ICEE-2010, Gliwice, Poland. July 18-22, 2010.
- [71] D. Garcia, M. De Giusti, R. Jordan, W. Moreno, "Ibero American Science and Technology Education Consortium (ISTEC): New Challenges in Collaborative Work," ICEE: An International Conference on Engineering Education, Belfast, Northern Ireland, UK. August 21-26, 2011.
- [72] D. Li, S. K. Jayaweera, O. Lavrova, and R. Jordan, "Load Management for Price-based Demand Response Scheduling - A Block Scheduling Model," International Conference on Renewable Energy and Power Quality (ICREPQ'11)", Canary Islands, Spain, April 2011.

- [73] R. Barrett<sup>1</sup>, R. Jordan<sup>2</sup>, A. Rucinski<sup>3</sup>, "Towards Global Engineering Through Peace Engineering Based on Disruptive Microelectronics," World Engineering Education Forum, Buenos Aires, Argentina, October 15-18, 2012. 1 New Hampshire Consulting Network, USA. 2 University of New Mexico, USA. 3 University of New Hampshire, USA
- [74] R. Murphy (INAOE), R. Jordan (UNM), W. Moreno (USF), F. Guarin (IBM), D. Garcia (ISTEC, Inc.), A. Maury (SILTERRA), P. Gadani (SILTERRA), "Overhauling Engineering Education in Latin America," World Engineering Education Forum, Buenos Aires, Argentina, October 15-18, 2012.
- [75] R. Jordan (UNM), W. Moreno (USF), R. Murphy (INAOE), D. Garcia (ISTEC, Inc.), M. de Giusti (UNLP), "ISTEC'S Impact on the Development of Science and Technology in Latin America," World Engineering Education Forum, Buenos Aires, Argentina, October 15-18, 2012.
- [76] R. Jordan (UNM), T. Lee (QUANSER), I. Alvarado (National Instruments), D. Koechner (e-NOVA), D. Garcia (ISTEC, Inc.), N. Ghani (UNM), P. Martin (QUANSER), "Peace Engineering and the Student Global Design Challenges: Launching Ideas from the Laboratory to Commercialization," -World Engineering Education Forum, Buenos Aires, Argentina, October 15-18, 2012.
- [77] A. Marquez (USF), I. Vanegas (USF), R. Jordan (UNM), W. Moreno (USF), "Embedded Systems Design and Academic Curriculum Sharing Across Ibero-America," -World Engineering Education Forum, Buenos Aires, Argentina, October 15-18, 2012.
- [78] R. Murphy (INAOE), R. Jordan (UNM), W. Moreno (USF), D. Garcia (ISTEC, Inc.), "La Situación de la Ingeniería en América Latina," XXVI Congreso Nacional de Posgrado, Michoacán, Mexico, September 26-28, 2012.
- [79] Jorge Crichigno, Gregory Heileman, Ivan Lopez, Alfredo Perez, Ramiro Jordan; Cross-institutional Collaboration on Hybrid Engineering Courses among Institutions in New Mexico; ASEE, June 23-24, 2013. Paper ID #5722.
- [80] Andres Jacoby, Daniel Llamoca, Ramiro Jordan, and Alonzo Vera, Proteus: An Open Source Dynamically Reconfigurable System-on-Chip with Applications to Digital Signal Processing; IEEE Ninth International Caribbean Conference on Devices, Circuits and Systems, 2-4 April, 2014, Playa del Carmen, Mexico.

#### **JOURNAL PAPERS (incomplete list)**

- [1] R. Jordan, S. Dyer, "Adaptive Signal Processing Techniques: An Application to Raman Spectroscopy," Journal of Applied Spectroscopy, pp 750-758, vol 43, Number 5, July 1989.
- [2] R. Jordan, "EE Education in Latin America," IEEE Potentials Magazine, IEEE Society, pp. 26-27, February 1990.

- [3] J. Rasure, D. Koechner, R. Jordan, C. Williams, "A Design Environment for Multidimensional Signal Processing," *Informática y Automática Journal*, pp 18-33, Volume 24, number 1, Nov. 1991.
- [4] G. P. Abousleman, R. Jordan, R. H. Griffey, "Eigenvector-Based Spectral Enhancement of Nuclear Magnetic Resonance Profiles of Small Volumes from Human Brain Tissue," *Journal of Applied Spectroscopy*, pp 202-208, vol 45, Number 2, Feb. 1991.
- [5] L. H. Pollard, R. Jordan, "An Advanced Educational Microprocessor System," *IEEE Micro*, pp 22-25, 78-79, Feb. 1991.
- [6] L. H. Pollard, R. Jordan, C. Abdallah, A. Levine, M. Blevins, "A New Computer System for Education and Research," *Computers and Electrical Engineering*, pp 261-266, vol 17, Number 4, 1991.
- [7] C. Abdallah, D. Docampo, R. Jordan, "Necessary and Sufficient Conditions for the Stability of Polynomials with Linear Parameter Dependencies," *International Journal of Robust and Nonlinear Control*, pp 69-77, vol. 1, 1991.
- [8] R. Jordan, The Khoros Group, "Khoros, a software development environment for data processing," *DSP Applications*, pp 16-23, vol. 2, Number 3, March 1993.
- [9] E. Schamiloglu, R. Jordan, M. D. Haworth, L. D. Moreland, I. V. Pegel, A. Roitman, "High Power Microwave-Induced TM<sub>01</sub> Plasma Ring," *IEEE Transactions in Plasma Science*, pp 6-7, vol. 24, No. 1, February 1996.
- [10] R. Jordan, L. Pollard, C.T. Abdallah, J. Sanin, J. Van Reenen, M. De Giusti, and P. Franco, "Technology Education Challenges and Solutions in Latin America," *IEEE Transactions on Education*, Vol. 44, No.2, May 2001, Abstract, pp. 203--205, full paper available on CD-ROM: Rapid Education Supplement, May 2001
- [11] R. Jordan and C.T. Abdallah, "Wireless Communications and Networking: An Overview," *IEEE Antennas and Propagation Magazine*, Vol. 44, No. 1, February, 2002, pp. 185--193.
- [12] V. Licks, F. Ourique, R. Jordan, "Geometric Attacks on Image Watermarking Systems: A Survey," *IEEE Multimedia*, v. 12, No. 3, p. 68-78, 2005.
- [13] Victor M. Vergara, Ulises Lay, Ramiro Jordan, Silvio Barbin and Wilfrido A. Moreno, "Closed Lower Bound Form of Waterlevel Problem for Linear Precoders and Decoders Using the Quarter Circle Law," *IEEE Transactions on Information Theory*, Accepted, June 2006
- [14] V. M. Vergara, S. E. Barbin, R. Jordan: Waterfilling Estimation for AWGN MIMO Channel Modeled as a Random Matrix; *JCM* 3(5): 12-22, 2008.
- [15] R. Otazo, Fa-Hsuan Lin, G. Wiggins, R. Jordan, D. Sodickson, S. Pose, "Superresolution parallel magnetic resonance imaging: application to functional and spectroscopic imaging," *Neuroimage* 04/2009; 47(1):220-30.

- [16] Zhiwu Xie, Herbert Van de Sompel, Jinyang Liu, Johann van Reenen, and Ramiro Jordan,  
“Archiving the Relaxed Consistency Web, DOI:10.1145/2505515.2505551, Source: arXiv, 08/2013.

### **INVITED/KEYNOTE TALKS & PANELS (Incomplete List)**

- [1] Universidad Nacional de La Plata, Electrical Engineering Department, La Plata, Argentina, December 1992.
- Keynote: “Information Technology in Ibero-America”
- [2] 11th Simposio Brasileiro de Redes de Computadores, Campinas, Brazil. May 10-13, 1993.
- Keynote: “Multidimensional Software Development, Khoros 1.0.5 and Khoros 2.0.”
- [3] Ideas in Science and Electronics (ISE) Conference, May 1994.
- Keynote: “Khoros 2.0: The Next Generation”
- [4] Pontifica Universidad Javeriana, Electrical Engineering Department, Bogota, Colombia, November 1994.
- Keynote: “Information Technology in Ibero-America”
- [5] Simposio Nacional de Reconocimiento de Formas y Análisis de Imágenes, Universidad de Córdoba, Córdoba, Spain, March 1995.
- Invited “Digital Image processing with Khoros 2”
- [6] Universidad Tecnológica Equinoccial, Quito, Ecuador. November, 1995.
- Keynote: “Information Technology in Ibero-America”
- [7] International Conference on Modeling and Simulation of Microsystems, Semiconductors, Sensors and Actuators (MSM-98), Santa Clara, CA, USA. April 6-8 1998.
- Keynote: “Visual Programming Environment for Modeling and Simulation”
- [8] Motorola Corporate Engineering and Project Management Council 1998 Simulation and Modeling for 10X Cycle Time Reduction Symposium, Phoenix, AZ, USA. June 1-2 1998.
- Keynote: “Visual Programming Environment for Modeling and Simulation on Computer Networks”
- [9] I Certamen Iberoamericano y III Congreso de Tecnologías Aplicadas a la Enseñanza de la Electrónica, Madrid, Spain. September 16-18 1998
- Keynote: “Trends and Needs of Networks in Education and R&D”
- [10] American Chamber of Commerce for Brazil - Sao Paulo, Brazil, August 4, 1998.
- Keynote: “Internet Software Development: Business Agenda for Electronic Commerce in Brazil”
- [11] Conferencia Internacional de Reconocimiento de Patrones, Havana, Cuba, March 1999.
- Keynote

- [12] Universidad de Santiago de Compostela/Centro de Supercomputación de Galicia, Santiago de Compostela, Spain. March 1999.
  - Invited: “Simulation and Modeling Environments”
- [13] Organization of American States Integral Development Meeting, Wash. D.C., April, 1999.
  - Keynote
- [14] NTGTS 1st Annual Latin American Telecommunications Conference, Richardson, TX. May 5, 1999.
  - Keynote: “I2K Plan for Ibero-America”
- [15] Universidad Nacional de La Plata, La Plata, Argentina. July 1999.
  - Invited: “Computer Networks: Theory and Practice”
- [16] 1999 International Conference on Engineering and Computer Education, Rio de Janeiro, Brazil. August 11-14 1999.
  - Keynote: “Los Libertadores: Science and Technology Integration of Ibero-America”
- [17] Primer Congreso Internacional de Tecnología y Política de Investigación Científica, Mexico City, October 5-6, 1999.
  - Keynote
- [18] Control and Mitigation of Natural Disasters Workshop, Santa Fe, NM, October, 1999.
  - Keynote
- [19] Amigos 2000 Conference, Puebla, Mexico, February 2000.
  - Keynote: “Towards a Digital Library”
- [20] ICEE 2000, Taipei, Taiwan. August 2000.
  - Keynote: “Portals in the Education”
- [21] EduCause 2000, Nashville, Tennessee. October 2000.
  - Panel: “Internationalization in Higher Education”
- [22] General Assembly of the Inter-American Development Bank, New Orleans, Louisiana, March 27-29, 2000
  - Panel: “The New Economy and Development: Innovation and Growth in Wealth”
- [23] Conference of the Institute of Electrical and Electronics Engineers (IEEE) and Motorola DSP licensing, Cancun, Mexico, March 2000
  - Invited: “ISTEC”
- [24] 2nd IEEE Latin American Test Workshop, Cancun, México, February 2001
  - Panel

- [25] Annual Iberoamerican Research & Development Summit, Albuquerque, NM, May 2001
  - Panel
- [26] CUDI High Speed Networking Conference, México, D.F., Mexico, April, 2001
  - Invited
- [27] CHI 2001 – Consortium in the Development of Human Interaction, Seattle, Washington, April 2001
  - Invited
- [28] CLEI, Cartagena, Colombia, August 2001
  - Invited
- [29] ICEE Congress, Oslo, Norway, August 2001
  - Invited
- [30] CEITEC Conference, Porto Alegre, Brazil, August 2001
  - Invited
- [31] IEEE CCA/ISIC 2001 Conference, Mexico City, Mexico, October 2001
  - Invited
- [32] XXI International Conference of the Chilean Computer Science Society, Punta Arenas, Chile, November 2001
  - Invited
- [33] International Seminar of Informatics, University of Guadalajara, Mexico, November 2001
  - Invited
- [34] INAOE Anniversary Events, Puebla, Mexico, November 2001
  - Panel
- [35] E-Mexico Summit, Acapulco, México, Nov-Dec 2001
  - Keynote
- [36] Forum Social Mundial – Programa para Ciencia e Tecnologia para Democracias em Desenvolvimento, Porto Alegre, Brazil. January 31 – Feb 5, 2002.
  - Invited: “The ISTECH Model for Collaboration: ISTECH Initiatives”
- [37] 4th IEEE International Caracas Conference on Devices, Circuits and Systems ICCDCS 2002, Aruba, Dutch Caribbean. April 17-21, 2002.
  - Invited: “The ISTECH Model: ISTECH Initiatives”
- [38] Annual Iberoamerican Research & Development Summit, Sandia National Labs, Albuquerque, NM. May 2002.
  - Panelist



- [39] Meso-American and Caribbean Digital Libraries and Distance Education Workshop at INAOE, Puebla, Mexico. May 15-17, 2002.
  - Invited: “The ISTECH Model for Collaboration: LIBLINK Initiative”
- [40] V Taller Internacional de Educación a Distancia, Havana, Cuba. May 20-24, 2002.
  - Invited: “The ISTECH Model for Collaboration: The Advanced Continuing Education (ACE) Initiative”
- [41] Inauguration of the First ISTECH Center of Excellence , Universidad de Monterrey, México. May 24, 2002.
  - Invited: “ISTECH Los Libertadores Initiative”
- [42] Virtual Educa 2002, Valencia, Spain. June 2002.
  - Invited “Advanced Continuing Education Initiative of ISTECH”
- [43] 6th World Multi-Conference on Systematics, Cybernetics & Information, SCI 2002, Orlando, Florida. July 14-18, 2002.
  - Invited: “R&D Initiative of ISTECH”
- [44] 1st Andean Forum on Competitiveness –Sponsored by the Interamerican World Bank and CAF, Santa Cruz, Bolivia. July 18, 2002.
  - Keynote: “The ISTECH Model for Collaboration: ISTECH Initiatives”
- [45] X Brazilian Symposium of Microwaves and Opti-Electrics, Recife, Brazil. August 12, 2002.
  - Invited: “Evolution, trends and perspectives R&D Initiative of ISTECH”
- [46] ICEE 2002, Manchester, England. August 18, 2002.
  - Invited: “The ISTECH Model for Collaboration: Entrepreneurship”
- [47] 15th Symposium on Integrated Circuits and Systems Design Chip in the Pampa SBCCI 2002, Porto Alegre, Brazil. September 9-14, 2002.
  - Keynote: “The ISTECH Model for Collaboration: R&D Initiative and CEITECH”
- [48] Hewlett-Packard Mobility Conference, San Jose, California. October 23, 2002.
  - Invited: “ECE – ISTECH Online Education Platform: Chips and Salsa”
- [49] ISTECH Centers of Excellence Workshop, Santo Domingo, Dominican Republic. September 17, 2002.
  - Invited “ISTECH Los Libertadores Initiative”
- [50] III Encuentro Sociedad y Tecnologías de la Información, IT Challenge, Universidad de Chile, December 12-13, 2002
  - Invited: “Education and the Digital Divide”

- [51] NSF-LACCEI Workshop on Global Engineering Education Challenge for the Americas, Tampico, Mexico, May 29, 2007.
  - Invited: “Entrepreneurship in Engineering Education”
- [52] XVII ISTECA General Assembly, Loja, Ecuador, June 4-8, 2007.
  - Invited: “S&T Entrepreneurship for Economic Development”
- [53] Americas Competitive Forum, Organized by the US Department of Commerce, Atlanta, June 11-13, 2007.
  - Invited: “S&T Entrepreneurship for Economic Development”
- [54] XXI Congreso Nacional de Posgrado y EXPO Posgrado, Guadalajara, Mexico. Nov 20-23, 2007.
  - Invited: “Impacto y Pertinencia del Posgrado (COMEPO)”
- [55] Feria Internacional de Ciencia y Tecnología, Universidad de Guadalajara, Autlan, Mexico, November 10-13, 2008.
  - Invited: “S&T, Education and Entrepreneurship for Economic Development”
- [56] 2008 ASEE Annual Conference and Exposition, Pittsburg, PA, June 22-25, 2008.
  - Invited: “ISTECA-GRANA: Accreditation and Certification Efforts in Ibero-America”
- [57] 2nd IFEES Global Engineering Education Summit and the 7th ASEE Global Colloquium on Engineering Education, Cape Town, South Africa, October 19-23, 2008.
  - Invited: “Science and Technology Entrepreneurship for Economic Development (STEED)”
- [58] 6th Latin American and Caribbean Conference For Engineering Technology, Tegucigalpa, Honduras, June 4-6, 2008.
  - Invited: “Entrepreneurship and Building Human Capacity in Ibero-America: Graduate Double Degrees”
- [59] 6th Latin American and Caribbean Conference For Engineering Technology, Tegucigalpa, Honduras, June 4-6, 2008.
  - Panelist: “Sustainability, Environment, and Energy for Latin America and the Caribbean (SEELAC)”
- [60] IFEES-ASEE, 2009
  - Keynote: “GRANA: Assessment, Evaluation and Accreditation of Educational Programs”
- [61] LACCEI, 2009
  - Keynote: “GRANA: Assessment, Evaluation and Accreditation of Educational Programs”
- [62] ISTECA GA, 2009
  - Keynote: “GRANA: Assessment, Evaluation and Accreditation of Educational Programs”
- [63] EftA, 2009
  - Keynote: “GRANA: Assessment, Evaluation and Accreditation of Educational Programs”

- [64] IFEES-ASEE, 2010
  - Keynote
- [65] LACCEI, 2010
  - Keynote
- [66] Sisoft 2010
  - Keynote
- [67] Brazil – Internationalization of Higher Education, 2010
  - Keynote
- [68] ICEE, 2010
  - Keynote
- [69] EftA, 2010
  - Keynote
- [70] ISTE General Assembly, Porto Alegre, Brazil, May 2011
  - Keynote: “Innovating Curricula: An idea from the lab to the Marketplace”
- [71] World Engineering Education Forum - Lisbon, Portugal. July 2011.
  - Keynote: “4G and LTE: Peace Engineering”
- [72] Electrical and Computer Engineering Department Heads Association (ECEDHA), Orlando, FL USA. June 2013.
  - Invited: “Innovation-Plaza at UNM”
- [73] Internationalization Challenges for Academic Institutions ,UNICAMP, Campinas, Brazil. – October 2013
  - Keynote, “The ISTE and UNM Experience”
- [74] National Instruments WEEK, Austin, TX, USA. August 2013
  - Invited: “The Innovation Plaza Effort at UNM”
- [75] US-Brazil Innovation Summit, Rio de Janeiro, Brazil. September 2013.
  - Keynote: “GINET”
- [76] Student Platform for Engineering Education (SPEED), 9<sup>th</sup> Global Student Forum, Cartagena, Colombia. September 21-24, 2013.
  - Keynote: “Peace Engineering and the Innovation Plaza”
- [77] GINET Workshop, UNM, Albuquerque NM, USA. May 7-9, 2014.
  - “What is GINET?”

- [78] College of the Americas, Organización Universitaria Interamericana (OUI), Argentina. July 2014.
  - Invited: “Good Practices in International Accreditation” (video recorded and broadcast to academic organizations in Ibero-America)
- [79] Congresso Técnico-Científico de Engenharia e Agronomia (CONTECC 2014), Teresina, Brazil. August 2014.
  - Keynote: “Practical Partnership Building and Enterprise-Oriented Examples”
- [80] UPADI 2014, Santa Cruz de la Sierra, Bolivia. August 11-16, 2014.
  - Keynote: “Global Innovation Network for Entrepreneurship and Technology (GINET) From Technology Anywhere to Markets Everywhere”
- [81] Commercialization of Micro, Nano, and Emerging Technologies Conference (COMS 2014), Salt Lake, Utah. October 12-15, 2014.
  - Panel: “Emerging Energy Tech and Global Energy”
- [82] IFEEES (2006 – Present)
  - Panel, Invited presentations
- [83] Inter-American Development Bank – ICT Events (2000 – 2005)
  - Panel, Invited talks
- [84] ISTECH General Assemblies (1990 – Present)
  - Panel and Keynote Presentations
- [85] Organization of American States (1992 – 2006)
  - Panel, Invited presentations
- [86] ISTECH ICT Challenges (2000 – 2005)
  - Panel, Invited Presentations
- [87] Global Engineering Deans Council – Latin America (2011 -2013)
  - Panel, Invited presentations
- [88] IEEE ICOPS 2015, The 42<sup>nd</sup> IEEE International Conference on Plasma Science, Belek, Antalya, Turkey. May 24-28, 2015.
  - Invited Talk/Workshop – Experiential Learning and Entrepreneurship
- [89] IEEE International Conference on Communications – ICC 2015, London, England. June 8-12, 2015.
  - Invited Talk – Experiences and Best Practices in Sharing Hands-On Education Materials Globally
  - Panel Member – The Role of ComSoc in Communications, Education
  - Lab Manual Booklaunch: *Introduction to Communication Systems Using National Instruments Universal Software Peripheral Radio*

## **PUBLIC SERVICE**

- Advisor to the Hispano Chamber of Commerce – STEM, R&D and Entrepreneurship, 2008, 2009, 2010, 2011
- Helped organized business trips for the Hispanic Chamber of Commerce to Argentina, Brazil, and Spain, 2000 – 2008
- Outreach programs with Albuquerque Public Schools – Career Enrichment Center (APS-CEC) to recruit students early on and give them a chance to take UNM courses for credit while in high school.
- Assisted City of Albuquerque – Economic Development efforts (US and international) with Mayor's office; Planning Department with technical issues relating to the Electromagnetic Health and the siting of cellular phone service base station towers 1999.
- Consultant to the Bolivian Minister of Labor - Telephony Cooperative, La Paz, Bolivia, 1999.
- Consultant to the Bolivian Mission to the United Nations, New York, 1999.
- Promoted ISTEAC activities within UNM and the State of New Mexico and to the Latin American Scientific Community at large, 1999 to present.
- Working with New Mexico Tribal Communities in the implementation of technological access in remote areas; and searching for funding resources for it. 2002, 2004
- La Plazita Community Center, Albuquerque, 2005.
- NM State collaborations: Sec. of Education, Reed Dasembrock; Secretary of Economic Development, Fred Mondragon; Governor's S&T Advisor, Tom Bowles. 2007, 2008
- City of Albuquerque: Mayor Martin Chavez, 2008
- Advisor to Paul Shirley and WAVE volunteer efforts. Also donated ISTEAC equipment to WAVE.
- Helping Gary Oppedahl, Innovate ABQ project, City of Albuquerque with international soft landing of Tech Parks (2014)