

### **11.14 Aprobación para la incorporación de nuevos miembros de la Comisión Dictaminadora Externa.**

Por este conducto me permito informarles que, con base en el Título IV, Capítulo 1, Artículo 40 del Estatuto del Personal Académico del INAOE, dos miembros de la Comisión Dictaminadora Externa (CDE) deberán ser renovados. Por tal motivo, y tomando en cuenta que la CDE debe estar integrada por científicos que gocen de reconocido prestigio en los campos del conocimiento científico y tecnológico que se cultivan en el Instituto, es un honor presentar a su fina consideración las curricula de los Doctores Edgar Sánchez Sinencio y Wilfrido A. Moreno, como candidatos para dicha comisión.

*Edgar Sánchez-Sinencio*

*TI J. Kilby Chair Professor of Electrical Engineering*

*Analog & Mixed-Signal Group*  
*Department of Electrical Engineering*  
*Texas A&M University*

*College Station, Texas 77843-3128*  
*318E Wisenbaker Engineering Research Center*  
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#### Professional Activities

Professional Activities:

General Chairman, 26th MWSCAS, Puebla, Puebla, Mexico, 1983

Associate Editor, *IEEE Circuits and Systems Magazine*, 1982-1984

Associate Editor, *IEEE Circuits and Devices Magazine*, 1985-February, 1988

Associate Editor, *IEEE Transactions on Circuits and Systems*, 1985-May 1987

Associate Editor, *IEEE Transactions on Neural Networks*, 1990-1992

*IEEE Circuit and Systems Society* Board of Governors Member, 1990-1992, 2005-2007

*IEEE Circuits and Systems* Liaison Representative of Region 9, 1991-1992.

*IEEE Council of Neural Networks AdCom* Member, (91-92).

Video Review Editor, *IEEE Transactions on Neural Networks*, 1993

Editor, Analog Integrated Circuits and Signal Processing, An International Journal, Kluwer Academic Publishers, 1993-present

Guest Editor, Special Issue on Neural Network Circuit Implementations, *IEEE Transactions on Neural Networks*, March 1991 and Co-Editor for the special issue on the same topic for May 1992, and May 1993

Guest Co-Editor, Special Issue on Low Voltage Analog and Mixed-Mode Circuits, *IEEE Transactions on Circuits and Systems I*, November 1995

Member, IEEE Press Board, 1993-1996

Chairman, Fellows Committee, IEEE Neural Network Council, 1993-1995

Vice President, Publications, IEEE Circuits and Systems Society, 1994, 1995

Invited Sessions and Tutorials Chairman, 42nd Midwest Symposium on Circuits and Systems, New Mexico, August 1999

Editor-in Chief, IEEE Transactions Circuits and Systems II, 1997-1999

Circuits and Systems Representative in Solid State Circuits Society, February 2001-February 2003

Solid State Circuits Society Award Committee Member 2002-2004

### Awards

☀ IEEE Fellow Member (92). For contributions to Monolithic Analog Filter Design. Less than 1% of the IEEE (the largest engineering society in the world) members earn the rank of fellow.

☀ Halliburton Professorship, College of Engineering, Texas A&M University, 1993. Award of Excellence in recognition of outstanding achievement and professionalism in education, research and service to students.

- ☀ IEEE Guillemin-Cauer Award, 1995. In recognition of the best paper published in the IEEE Transactions on Circuits and Systems during 1994-1995.
  
- ☀ Honoris Causa Doctorate awarded by the National Institute for Astrophysics, Optics, and Electronics (INAOE), Mexico, November 1995. The first honorary degree in Microelectronics given in Mexico.
  
- ☀ Texas Senate Proclamation #373 for Outstanding Accomplishments. Senator Jim Turner, March 25, 1996.
  
- ☀ IEEE Darlington Award, 1997. In recognition of the best paper bridging the gap between theory and practice published in the IEEE Transactions on Circuits and Systems. Based on general quality, originality, contributions, subject matter and timeliness. Received June 1997.
  
- ☀ Texas Instruments Analog Engineering Chair Professor Holder , College of Engineering, Texas A&M University. March 1999- January 2002
  
- ☀ Texas Instruments/ Jack Kilby Chair Professor Holder, College of Engineering, Texas A&M University. February 2002- Present
  
- ☀ William & Ruth Neely/ Dow Chemical Faculty Fellow (2000-2001) Engineering Program Texas A&M University. In recognition to overall contributions to the Engineering Program including classroom instruction, scholarly activities and professional services.
  
- ☀ IEEE Circuits and Systems Society Golden Jubilee Medal Recipient , May 2000. In recognition of outstanding contributions to the Society

## Research

Edgar Sánchez-Sinencio, TI J. Kilby Chair Professor

Current Research Interests and Areas of Expertise:

☀ Continuous-Time Filters and Oscillators based on:

- Adaptive Q tuning
- Highly Linear Operational Transconductance Amplifiers
- Current-Mode Integrators
- RLC Prototypes

☀ Switched Capacitor Circuits

- Filters, Multiplexing, Aperiodic
- Analog to Digital Converters
- Built in Testing

☀ RF Communication Circuits

- Receiver Architectures: Bluetooth/ Wi-Fi Receiver Design,  
Ultra Wide Band
- Transceiver: 802.15.4 ( Zigbee)
- RF Filters in the GHz range: Amplitude and Q control
- RFID tag\_ and Zigbee Transceivers
- Frequency Synthesizer and other Building Blocks

☀ Analog Built-in Testing

- Signal Generators
- Signal detectors
- Complex Stimuli

- Spectrum Analyzer
- RF Power Detector Circuit

### **Publications**

<b>Publications - Edgar Sánchez-Sinencio</b>
<a href="#">Switched-Capacitor and Digital Filters</a>
<a href="#">Computer-Aided Design</a> and Testing
<a href="#">Operational Transconductance Amplifier-Capacitor (OTA-C) Filters</a>
<a href="#">Current-Mode Circuits</a>
<a href="#">Neural Network Hardware Implementations</a> , CNN circuits, Fuzzy Logic and Chaos
<a href="#">Analog Circuit Design</a>
<a href="#">RF and Baseband Circuits</a> , <a href="#">A book on Frequency Synthesizers</a>

**WILFRIDO A. MORENO**  
**University of South Florida**  
**Department of Electrical Engineering, ENB 118**  
**4202 Fowler Av. ENB 118, Tampa, FL 33620**  
**Office: (813) 974-4475**  
**Cellular: (813) 390 2499**  
**e-mail: moreno@eng.usf.edu**

**EDUCATION:**

Ph.D. in Electrical Engineering  
 Department of Electrical Engineering, University of South Florida (Dec. 1993).

Master of Science in Electrical Engineering  
 Department of Electrical Engineering, University of South Florida (Dec. 1985).

Bachelor of Science in Electrical Engineering;  
 Department of Electrical Engineering, University of South Florida (Dec. 1983).

Bachelor of Science in Electronic Engineering (Transfer to U.S.F.).  
 Universidad "Simón Bolívar," Caracas -- Venezuela (1974-80).

**EXPERIENCE:**

08/00 --Present Associate Professor, Department of Electrical Engineering, University of South Florida.

5/16/05 – 8/05 Consultant, Boeing – SAIC Future Combat Systems (FCS) team in support of the FCS C4ISR SSI Performance Analysis Group.

**Duties:** Provided Subject Matter Expertise (SME) Support as a Systems Engineer/Architect in the area of Video Architecture under Boeings and SAIC's direction. This SME support work included participation in the Video Architecture Working Group (VAWG) planning meetings, leading the VAWG Compression/Decompression Focus Group, addressing the VAWG prioritized technical issues that need to be resolved, and Supporting the technical and program management in completion of VAWG deliverables according to specific prioritization dictated by LSI management.

08/94 –09/00 Assistant Professor, Department of Electrical Engineering, University of South Florida.

07/88 –07/94 Instructor/Researcher Associate, Department of Electrical Engineering/Center for Microelectronics Research, University of South Florida.

01/86 -- 06/88 Teaching Associate, Department of Electrical Engineering, University of South Florida.

01/84 -- 12/85 Teaching Assistant, Department of Electrical Engineering, University of South Florida.

10/80 -- 09/81 Co-owner Electrical Contracting Company, Will-Electric SRL; Caracas, Venezuela.

07/79 -- 09/80 Electrical Sub-Contractor, Oficina Técnica X-10; Caracas, Venezuela.  
**Duties:** Design and execution of electric projects for industrial sectors.

**RESEARCH GRANTS:****Funded Grants Proposals:**

- 1. Proposal Title:** “Collaborative Autonomous Unmanned Aerial-Ground Vehicle Systems for Field Operations”

Granting Agency: Army Research Lab

Date: May 01, 2006 – May 01, 2007

Participation: Dr. Kimon Valavanis (PI), Dr. Wilfrido Moreno (Co-PI), Dr. Miguel Labrador (Co-PI)
- 2. Proposal Title:** “WebEx Pilot Project”

Granting Agency: This study is being supported by grants from WebEx Communications, Inc., the USF Department of Information Systems and Decision Sciences, and the USF English Language Institute

Date: Spring 2005 – Data analysis still on-going

Participation: Dr. Richard Schreck (PI), Dr. Wei Zhu - (Co-PI), Dr. Wilfrido A. Moreno - (Co-PI)
- 3. Proposal Title:** “Spectroscopy Characterization on the Growth Behavior of Microorganism”

Granting Agency: Los Alamos National Laboratory

Participation: Dr. Luis Garcia-Rubio (PI), Dr. Wilfrido A. Moreno – Collaborator

Date: 2005
- 4. Proposal Title:** “Skin Impedance Measurements”

Granting Agency: Department of Veterans’ Affairs - Occupational Health and Safety Office

Date: June 1, 2004 – May 30, 2005

Participation: Dr. Wilfrido Moreno (PI), Dr. Jeffrey J. Harrow, (Co-PI)
- 5. Proposal Title:** “Development of Multidisciplinary Networked Distributed Control Instructional Materials to Support Inter Departmental Process Control Curriculum”

Granting Agency: USF Innovative Teaching Grants (ITG) Program - The Center for 21st Century Teaching Excellence at the University of South Florida

Date: February 23, 2005 - One-year proposal

Participation: Dr. Wilfrido Moreno (PI), Dr. Carlos Smith - (Co-PI), Dr. Miguel Labrador - (Co-PI)
- 6. Proposal Title:** “Intelligent Mannequin For Restraint And Control Training”

Granting Agency: Department of Veterans’ Affairs - Occupational Health and Safety Office

Date: November 2003 – September 30, 2004

Participation: Dr. Wilfrido Moreno (PI), Dr. John Lloyd, (Co-PI)
- 7. Proposal Title:** “Internship On Rapid System Prototyping Technologies With Focus On Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation & Control Systems”

Granting Agency: NSF

Date: September 2003 – June 2004

- Participation: Dr. Wilfrido A. Moreno (PI), Dr. James Leffew (Co-PI) and Dr. Miguel Labrador (Co-PI)
- 8. Proposal Title:** "Spectroscopy Characterization on the Growth Behavior of Microorganism phase"
- Granting Agency: Los Alamos National Laboratory  
Date: 2003 – 2004  
Participation: Dr. Luis Garcia-Rubio (PI), Dr. Wilfrido A. Moreno – Collaborator
- 9. Proposal Title:** "Rapid Organization Situation Assessment - ROSA: A Prototype Implementation using a Flooding Alert Automated System Design"
- Granting Agency: Global CDMHA – USF  
Date: August 15, 2003 – August 14, 2004  
Participation: Dr. Wayne Westhoff - (PI), Dr. Wilfrido A. Moreno - (Co-PI)
- 10. Proposal Title:** "A Pilot Test and Validation of a Novel Spectroscopy Method for Rapid Diagnosis of Malaria and Dengue Fever"
- Granting Agency: Global CDMHA – USF  
Date: August 15, 2003 – August 14, 2004  
Participation: Dr. Wayne Westhoff - (PI), Dr. Luis Garcia-Rubio - (Co-PI), Dr. Wilfrido A. Moreno - (Co-PI)
- 11. Proposal Title:** "Optimization and Integration of Advanced Manufacturing Techniques for Silicon Intraocular Lens Processes"
- Granting Agency: Bausch & Lomb Inc. and the Florida High Tech Corridor External Matching Grant Program  
Date: August 2003 – July 2004  
Participation: Dr. Wilfrido Moreno (PI), Dr. Grisselle Centeno (Co-PI) and Dr. James Leffew (Co-PI)
- 12. Proposal Title:** "Single Event Transient Evaluation of Analog Components Using Laser Fault Injection"
- Granting Agency: Honeywell Inc and the Florida High Tech Corridor External Matching Grant Program  
Date: August 2003 – July 2004  
Participation: Dr. Moreno – PI
- 13. Proposal Title:** "Development of an Instrumented Mannequin for Training of Caregivers in Safe Patient Handling and Movement"
- Granting Agency: Department of Veterans' Affairs - Occupational Health and Safety Office, Dr. John Lloyd  
Date: August 2002 – February 2003  
Participation: Dr. Wilfrido Moreno - PI
- 14. Proposal Title:** "Multidimensional Signal Processing: Theory in Practice" Training Program."
- Granting Agency: The Inter-American Agency for Cooperation and Development of the OAS and the Ibero-American Science and Technology Education Consortium  
Date: July 8 – 12, 2002



- Participation: Dr. Moreno – PI
- 15. Proposal Title:** “Development of Computerized Instructional Tools to Support Mathematically Intensive Engineering Curricula – Case Study: Linear System Analysis”
- Granting Agency: USF Innovative Teaching Grants, Support for Faculty Creativity in Teaching
- Date: (2002-2003) - One year funding
- Participation: Dr. Wilfrido A. Moreno – PI, Dr. James Leffew, Co-PI
- 16. Proposal Title:** “The Transfer of Information Through Workshops and International Technology Networking” Topic: Infectious Disease Prevention - Case Study: Dengue”
- Granting Agency: The Center For Disaster Management And Humanitarian Assistance, (CDMHA – USF)
- Date: October 1, 2001 – June 30, 2002
- Participation: Dr. Moreno - PI
- 17. Proposal Title:** “Development, Implementation and Validation of a Rapid System Prototyping Process Using Motorola’s DSP Development Platforms”
- Granting Agency: Motorola Inc. and Florida High Tech Corridor External Matching Grant Program
- Date: August 1, 2001 – July 30, 2002
- Participation: Dr. Wilfrido A. Moreno – PI, Dr. James Leffew – Co.PI
- Project Description: Motorola’s DSP Core Technology Center, (DCTC), desires to better align its university support with its own business goals and increase Motorola’s visibility on the Florida I-4 Corridor. DCTC is in the business of providing DSP core technologies to Motorola business groups. These core technologies include DSP architectures and tools to support integration of and development with those architectures. The proposed project can be described as an initiative to develop an integrated Digital Signal Processing, (DSP), Research Laboratory facility for the Development, Implementation and Validation of a Rapid System Prototyping Process at USF using Motorola’s DSP development platforms.
- 18. Proposal Title:** “Feasibility Study of the Spectroscopy of Microorganisms” – Phase I
- Granting Agency: Los Alamos National Labs
- Date: 2000 - 2002
- Participation: Dr. Luis Garcia Rubio (PI), Dr. Wilfrido Moreno (Collaborator)
- 19. Proposal Title:** “A Media Gateway Control Protocol, (MGCP), Implementation for Video and Voice over Packets Networks”
- Granting Agency: Telenix Corporation and Florida High Tech Corridor External Matching Grant Program

- Date: January 1, 2000 – December 31, 2000  
 Participation: Dr. Wilfrido A. Moreno – PI
- 20. Proposal Title:** “Fault Tolerant FPGA Design Verification Using Laser Fault Injection”  
 Granting Agency: Honeywell Inc. and Florida High Tech Corridor External Matching Grant Program  
 Date: August 1, 2001 – July 30, 2002  
 Participation: Dr. Wilfrido A. Moreno - PI
- 21. Proposal Title:** “Hardware/Software Implementation For Advanced Voice Over IP/Wireless System Test”  
 Granting Agency: IPAXS Corporation and Florida High Tech Corridor External Matching Grant Program  
 Date: January 1, 2001 – December 31, 2001  
 Participation: Dr. Wilfrido A. Moreno – PI, Dr. James Leffew, Co.PI
- 22. Proposal Title:** “USF-ISTEC Proposal”  
 Granting Agency: University of South Florida  
 Date: June 19, 2000  
 Participation: JoAnn McCarthy, Wilfrido A. Moreno
- 23. Proposal Title:** “Analysis of Digital Cellular Protocols for the Software Development and/or Hardware Implementation of Dual-Mode Prepaid Cellular Communications”  
 Granting Agency: SATX/DEBITFONE Inc. and Florida High Tech Corridor External Matching Grant Program  
 Date: January 1, 2000 – December 31, 2000  
 Participation: Dr. Wilfrido A. Moreno – PI, Dr. Kenneth Buckle – Co-PI
- 24. Proposal Title:** “Development of an Integrated Interdisciplinary Instrumentation Laboratory”  
 Granting Agency: USF - INSTRUCTIONAL DEVELOPMENT GRANTS: Support for Faculty Innovation 2000-2001  
 Date: 1 year  
 Participation: Dr. Moreno - PI
- 25. Proposal Title:** “Testing and validation of fault tolerant designs using the Laser Fault Injection System at USF”  
 Granting Agency: Honeywell International Foundation, Dr. John R. Samson  
 Date: October 2000  
 Participation: Dr. Moreno - PI
- 26. Proposal Title:** “Development of a Non-Destructive Methodology and Apparatus Using Ultrasonic Diagnostics for CMP Pads”  
 Granting Agency: Lucent Technologies  
 Date: August 23, 1999 – June 30, 2002  
 Participation: Dr. W. Moreno – PI

- 27. Proposal Title:** "Analysis and Modeling of the Effect of the Slurry Loop Variables on the Performance of the CMP Process"  
**Granting Agency:** Lucent Technologies  
**Date:** August 23, 1999 – June 30, 2002  
**Participation:** Dr. L. Garcia-Rubio – PI, Dr. W. Moreno Co-PI
- 28. Proposal Title:** "Small Engine Portable Analyzer /Tester Development"  
**Granting Agency:** MSE - I-4 Corridor  
**Date:** January 01, 1998 – September 01, 1998  
**Participation:** Dr. Kenneth Buckle – PI, Dr. Wilfrido A. Moreno – Co-PI
- 29. Proposal Title:** "Novel Laser Machining Techniques For CMP Pad Surface Conditioning & Pad Characterization"  
**Granting Agency:** Lucent Technologies  
**Date:** May 06, 1998 – May 09, 1998  
**Participation:** PI
- 30. Proposal Title:** "Laser Programmable MCM Substrate Development"  
**Granting Agency:** Honeywell Inc. – I-4 Corridor  
**Date:** 12 months  
**Participation:** PI
- 31. Proposal Title:** "Internship Program In Instructional Technology"  
**Granting Agency:** Universidad Simon Bolivar  
**Date:** February 1998 - March 1998.  
**Participation:** PI
- 32. Proposal Title:** "Thermal Management of Teklogix TKX-3100 Pentium Computer"  
**Granting Agency:** RAMP-TEKLOGIX Inc. – I-4 Corridor  
**Date:** November 15, 1997 - April 30, 1998  
**Participation:** PI
- 33. Proposal Title:** "Hardware/Software Implementation For Voice Over IP"  
**Granting Agency:** IPAXS Corp.  
**Date:** January 05, 1997 to August 01, 1998  
**Participation:** PI
- 34. Proposal Title:** "Electrical Engineering Remote Laboratories"  
**Granting Agency:** USF - Research and Creative Scholarship Grant Program.  
**Date:** March 1997 - February 1998.  
**Participation:** PI
- 35. Proposal Title:** "Laser Fault Injection Test at the Laser Restructuring Laboratory"  
**Granting Agency:** Honeywell Inc. – I-4 Corridor  
**Date:** November 15, 1997 – August 15, 1997  
**Participation:** PI

- 36.** Proposal Title: "Software Design, Implementation, and Documentation of Flowtronics Remote Terminal Unit (RTU)"  
Granting Agency: Laycock Systems, Inc.  
Date: March 17 - July 20, 1997  
Participation: PI
- 37.** Proposal Title: "Dual Cellular Technology"  
Granting Agency: RAMP  
Date: June 03, 1996 – March 30, 1997  
Participation: PI
- 38.** Proposal Title: "Software/Hardware Encoding Algorithm Implementation for Voice/Video over IP"  
Granting Agency: MagNet Inc.  
Date: May 12, 1996 – May 11, 1997  
Participation: PI
- 39.** Project Title: "Laser Trimming Of Capacitors On The Synchronous Regenerative Receiver (Srr) Custom Wafer"  
Agency: Honeywell Inc.  
Date: August 06, 1995 - August 05, 1996  
Participation: PI
- 40.** Proposal Title: "Integrated Optical Fluorescence Chemical Sensors with Enhanced Collection Efficiency"  
Granting Agency: Technology Deployment Center.  
Date: April 01, 1995 – June 30, 1995  
Participation: Co-PI
- 41.** Proposal Title: "Diode Laser Chemical Sensor with External Cavity"  
Granting Agency: ARCOVA (RAMP)  
Date: April 01, 1995 to September 30, 1995  
Participation: Co-PI
- 42.** Proposal Title: "Laser Fault Injection of VLSI Circuits: Analysis and Investigation"  
Granting Agency: Honeywell Inc.  
Date: 3 months  
Participation: PI
- 43.** Proposal Title: "The Scout Car"  
Granting Agency: Office of National Drug Policy  
Date: April 01, 1995 to September 30, 1995  
Participation: Co-PI

**PENDING-SUPPORT:****Proposals Under Preparation and/or Being Reviewed:**

- 44. Proposal Title:** “NOSS: Energy-efficient Probabilistic-based Localization and Sensing Coverage in Wireless Sensor Networks”  
 Granting Agency: NSF  
 Date: August 2007 – July 2010  
 Participation: Dr. Miguel Labrador (PI), Dr. Wilfrido Moreno (Co-PI)
- 2. Proposal Title:** “Training Program In Microelectronics Process Engineering”  
 Granting Agency: Centro De Enseñanza Técnica Y Superior - CETYS  
 Date: February, 2007 – January, 2008  
 Participation: Dr. Wilfrido Moreno (PI)
- 3. Proposal Title:** “Development of a 3-D Computer-aided Diagnosis System for Microscopic Images”  
 Granting Agency: NIH RO1  
 Participation: Dr. Wei Qian (PI), Dr. Wilfrido Moreno (Co-PI),
- 4. Proposal Title:** “Development of a 3-D computer-aided diagnosis system for Tomosynthesis imaging System”  
 Granting Agency: NIH R21  
 Participation: Dr. Wei Qian, (PI), Dr. Wilfrido Moreno, (Co-PI)
- 5. Proposal Title:** “Spectroscopy Characterization of the Growth Behavior of Microorganisms - Phase III”  
 Granting Agency: Los Alamos National Labs  
 Date: 1 Year  
 Participation: Dr. Luis Garcia Rubio (PI), Dr. Wilfrido Moreno, (Collaborator)
- 6. Proposal Title:** VA’s Rehabilitation Research & Development’s Center of Excellence Granting Agency: VA, RR&D  
 Date: 4.5 Years  
 Participation: Dr. Audrey Nelson (PI), Dr. Jeffrey Harrow (co-PI), Dr. Wilfrido Moreno, (Collaborator)

**Master’s and Doctoral Students:****Current Ph.D. Students – Major Professor/Co-Major**

1. Ph.D. Candidate: Andres Lombo  
 Dissertation title: “Nano Scale Based Model Development for MEMS to NEMS Migration”  
 Expected Defense date: January, 2007
2. Ph.D. Candidate: Clifford R. Merz  
 Dissertation title: “Dialytic Based Energy Source for Low Power Micro and Nano Systems. Such as those found at Desalination and Potable Water Purification Facilities”  
 Expected Defense date: May, 2007
3. Ph.D. Candidate: Mauricio Castillo-Effen

- Dissertation title: "Collaborative Localization in a Mobile Ad-Hoc Network of Unmanned Vehicles"  
 Expected Defense date: May, 2007
4. Ph.D. Candidate: Carlos Castillo  
 Area of Research: Non-linear Controls  
 Expected Defense date: December, 2007
5. Ph.D. Candidate: Jay C. Dlutowski  
 Area of Research: MEMS/NEMS  
 Expected Defense date: December, 2007
6. Ph.D. Candidate: Wendy Alvis  
 Area of Research: Controls  
 Expected Defense date: December, 2007
7. Ph.D. Candidate: Balaji Ramadoss  
 Area of Research: Biomedical Image Processing/Moffitt  
 Expected Defense date: Fall, 2008
8. Ph.D. Candidate: Liliana Villavicencio  
 Area of Research: Mechatronics  
 Expected Defense date: Fall, 2009
9. Ph.D. Candidate: Jay Bieber  
 Area of Research: Nanotechnology: Interconnects  
 Expected Defense date: Fall, 2009
10. Ph.D. Candidate: Ercan Elibol  
 Area of Research: Network Centric Distributed Controls  
 Expected Defense date: Fall, 2009
11. Ph.D. Candidate: Yannis Ionnidis  
 Area of Research: Controls  
 Expected Defense date: Fall, 2009

#### **Graduated Ph.D. Students – Major Professor/Co-Major**

1. Student Name: Alexandro Castellanos  
 Dissertation Title: "POLY(N-Isopropylacrylamide) Based BIOMEMS/NEMS for Cell Manipulation"  
 Defense Date: October 23, 2006  
 Major Professor: Dr. Wilfrido Moreno  
 Co-Major: Dr. Ryan Toomey  
 Committee Members: Andrew Hoff, Ph.D., Stephen Sadow, Ph.D., James Leffew, Ph.D., Peter Stroot, Ph.D, Andres Cardenas, Ph.D.  
 Professional Career: Professor in the Department of Electrical Engineering at Universidad Veracruzana, Veracruz - Mexico
2. Student Name: Eduardo Zurek  
 Dissertation Title: "System Optimization for Micron and Sub-Micron Particle Identification Using Spectroscopy-Based Techniques"

- Defense Date: May 5, 2006  
 Major Professor: Dr. Wilfrido Moreno  
 Co-Major: Dr. Luis Garcia Rubio  
 Committee: Dr. James T. Leffew, Dr. Miguel Labrador, Dr. Jose Olivares, Dr. Grisselle Centeno  
 Professional Career: Professor in the Department of System Engineering at Universidad del Norte, Barranquilla - Colombia
3. Student Name: Jorge Galvis  
 Dissertation Title: "Low-Power Flip-Flop using Internal Clock Gating and Adaptive Body Bias"  
 Defense Date: March 28, 2006  
 Major Professor: Dr. Wilfrido Moreno  
 Committee: Dr. Fernando Falquez, Dr. James T. Leffew, Dr. Srinivas Katkoori, Dr. Hua Cao  
 Professional Career: Consultant
4. Student Name: Yoonill Lee  
 Dissertation Title: "The Analysis of DS-CDMA and Multi-carrier Systems"  
 Defense Date: November 9, 2001  
 Major Professor: Dr. Wilfrido Moreno  
 Co-Major Professor: Dr. V. Jain  
 Committee: Dr. K. A. Buckle, Dr. A. D. Snider, Dr. N. Ranganathan, Dr. A. Rao  
 Professional Career: Communication R&D Cisco
5. Student Name: Norali Pernaleta  
 Dissertation Title: "Development of a Robotic Haptic Interface to Perform Vocational Tasks by People with Disabilities"  
 Defense Date: November 1, 2001  
 Major Professor: Dr. Wilfrido Moreno  
 Co-Major Professor: Dr. R.V. Dubey  
 Committee: Dr. A. D. Snider, Dr. S. Garrett, Dr. A. Rao  
 Professional Career: Associate Professor at California State Polytechnic University, Pomona
6. Student Name: Fernando J. Falquez  
 Dissertation Title: "Fault Tolerance and Testability Design with Validation by Laser Fault Injection to Improve the Performance and Testability of Advanced VLSI"  
 Defense Date: November 9, 1998  
 Major Professor: Dr. Wilfrido Moreno  
 Committee: Dr. Ken Buckle, Dr. Ravi Sankar, Dr. Carlos Smith, Dr. John R. Samson Jr.  
 Professional Career: Adjunct Professor at USF/Chief Technical Officer of Value Broadband Solutions, Inc.

## MASTER'S THESIS COMMITTEES

### **Current Masters Students:**

1. Student Name: Vikram Menhell  
Thesis Title: "A System of System Approach to Embedded System Design: FPGA/DSP/μP"  
Defense Date: Spring 2007  
Major Professor: Dr. Wilfrido Moreno  
Committee: Dr. James Leffew, Dr. Paris Wiley
2. Student Name: Shashi Murthy  
Thesis Title: "Embedded Based Autopilot Design and Synthesis"  
Defense Date: Spring 2008  
Major Professor: Dr. Wilfrido Moreno  
Committee: Dr. Valavanis, Dr. Leffew

### Graduated Master Students

1. Student Name: Ravi Samala  
Thesis Title: "Efficient Suspicious Region Segmentation Algorithm for Computer Aided Diagnosis Based on Tomosynthesis Imaging"  
Defense Date: October 18, 2006  
Major Professor: Dr. Wilfrido Moreno  
Committee: Dr. James Leffew, Dr. Wei Qian
2. Student Name: Karim Souccar  
Thesis Title: "Transmission Power Control for Wireless Sensors Networks"  
Defense Date: July 11, 2006  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Miguel Labrador, Dr. James Leffew
3. Student Name: Sai Kiran Rupanagudi  
Thesis Title: "A Platform for Research on Localization and Tracking Using Wireless Sensor Networks"  
Defense Date: March 28, 2006  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Miguel Labrador, Dr. James Leffew
4. Student Name: Yohan Prevot  
Thesis Title: "Arterial Perfusion Detection Method by Synchronous Detection"  
Defense Date: November 4, 2005  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Paris Wiley, Dr. Jim Leffew, Prof. Horace Gordon, Dr. Harrow, M.D.
5. Student Name: Nhat Nguyen  
Thesis Title: "Development and Implementation of a DSP Based Air Detector System to Prevent Embolism during Hemodialysis Therapy"  
Defense Date: November 4, 2005  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Paris Wiley, Dr. James Leffew
6. Student Name: Jyothsna Kurapati



- Thesis Title: "A Design Methodology for Implementation of Serial Peripheral Interface Using VHDL"  
Defense Date: July 17th, 2005  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Sanjukta Bhanja, Ph.D.
7. Student Name: Oscar V. Gonzalez  
Thesis Title: "Reconfigurable Wireless Sensor Platform for Training and Research in Networked Embedded Systems"  
Defense Date: April 12, 2005  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D, Miguel Labrador, Ph.D
8. Student Name: Daniel H. Quintela  
Thesis Title: "Pervasive Sensing and Computing for Natural Disaster Mitigation"  
Defense Date: April 6, 2005  
Major Professor: Wilfrido A. Moreno, Ph.D  
Committee Members: James T. Leffew, Ph.D, Miguel Labrador, Ph.D.
9. Student Name: Roberto Guerra  
Thesis Title: "Self Guided Micro-Vehicle: A Small Autonomous Vehicle with GPS Navigation and 802.11b Communications"  
Defense Date: March 24th, 2005  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Paris Wiley, Ph.D., James Leffew, Ph.D.
10. Student Name: Bijoy Purushothaman  
Thesis Title: "High Speed VLSI Architecture for Iterative Decoding"  
Defense Date: July 6, 2004  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James T Leffew, Dr. S. Bhanja
11. Student Name: Bhaskar Vijay Tadi  
Thesis Title: "Ultrasound Hardware Setup For Finding The Physical Characteristics Of CMP Pads"  
Defense Date: March 30<sup>th</sup>, 2004  
Major Professor: Dr. Wilfrido A. Moreno  
Committee Members: Dr. James T. Leffew, Dr. Grisselle Centeno
12. Student Name: Shashank Bharadwaj  
Thesis Title: "Investigation of Oxide Thickness Dependence of Fowler-Nordheim Parameter B"  
Defense Date: March 25, 2004  
Major Professor: Dr. Y.L. Chiou  
Committee Members: Dr. Christos Ferekides, Dr. Wilfrido Moreno
13. Student Name: Rajender Manteena  
Thesis Title: "A VHDL Implementation of the Advanced Encryption Standard Rijndael-Algorithm"  
Defense Date: March 23, 2004  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James Leffew, Dr. Wei Qian

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14. Student Name: Oneida Dugarte Westhoff  
Thesis Title: "Development of an Instrumented Mannequin for Training of Caregivers in Safe Patient Handling and Movement"  
Defense Date: March 16, 2004  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James Leffew, Dr. John Lloyd
15. Student Name: Paris D. Wiley  
Thesis Title: "Fault Tolerant Design Verification Through the Use of Laser Fault Injection"  
Defense Date: February 27, 2004  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Fernando Falquez, Dr. John Samson, Jr.
16. Student Name: Carlos Castillo  
Thesis Title: "Face Recognition Using Neural Networks And Principal Component Analysis"  
Defense Date: November 6, 2003  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. Rafael Perez, Dr. James L. Leffew
17. Student Name: Sadashi Seto  
Thesis Title: "The Development of the Hexapod Walking Robot by Implementing DSP58624"  
Defense Date: November 5, 2003  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: Kenneth A. Buckle, Ph.D., James T. Leffew, Ph.D.
18. Student Name: Balaji Ramadoss  
Thesis Title: "Vector Flow Model In Video Estimation And Effects Of Network Congestion In Low Bit-Rate Compression Standards"  
Defense Date: October 15, 2003  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James Leffew, Dr. W. Qian
19. Student Name: Nikhil A. Deshpande  
Thesis Title: "Matlab Implementation of GSM Traffic Channel Committee"  
Defense Date: October 15, 2003  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James Leffew, Dr. W. Qian
20. Student Name: Srinivasa Prasath Raghavendran  
Thesis Title: "Software Simulation of an Acoustic Echo Canceller"  
Defense Date: October 15, 2003  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Dr. James Leffew, Dr. W. Qian
21. Student Name: Jayavardhan R. Kandi

- Thesis Title: "Embedded Cryptography: An Analysis and Evaluation of Performance and Code Optimization Techniques for Encryption and Decryption in Embedded Systems"
- Defense Date: July 17th, 2003
- Major Professor: Dr. Wilfrido Moreno
- Committee Members: Dr. Kenneth Buckle; Dr. James Leffew
22. Student Name: Rishikesh Gokhale
- Thesis Title: "A Technique for Packet Loss Concealment in VoIP"
- Defense Date: July 31st, 2003
- Major Professor: Dr. Wilfrido Moreno
- Committee Members: Dr. James Leffew, Dr. W. Qian
23. Student Name: John Dhanraj
- Thesis Title: "Semi Automated Navigation Control System for Powered Wheelchairs"
- Defense Date: March 28, 2003
- Co-Major Professor: Dr. Wilfrido Moreno, Co-Major Professor: Dr. Rajiv Dubey
- Committee Member: Dr. Paris Wiley
24. Student Name: Maria Elena Sterner
- Thesis Title: "Developing of a Unit Commitment Scheduling Algorithm for Distributed Generation"
- Defense Date: November 23, 2002
- Major Professor: Wilfrido A. Moreno, Ph.D.
- Committee Members: Ralph Fehr and Dr. Kenneth Buckle
25. Student Name: Bhaskar Vijay Kumar Reddy Tadi
- Thesis Title: "Ultrasound Hardware setup for Finding the Physical Characteristics of CMP Pads"
- Defense Date: November 23, 2002
- Major Professor: Wilfrido A. Moreno, Ph.D.
- Committee Members: James Leffew, Ph.D., Grisselle Centeno, Ph.D.
26. Student Name: Siddhardha N. Garige
- Thesis Title: "A Cluster Based Routing Protocol for Setting up Label Switched Paths (LSPs)"
- Defense Date: November 12, 2002
- Major Professor: Wilfrido A. Moreno, Ph.D.
- Committee Members: James T. Leffew, Ph.D., Kenneth A. Buckle Ph.D.
27. Student Name: Wendy Alvis
- Thesis Title: "Designing a Sliding Mode Controller for PWM DC-DC Converters"
- Defense Date: November 5, 2002
- Major Professor: Wilfrido A. Moreno, Ph.D.
- Committee Members: James Leffew, Ph.D., Oscar Camacho, Ph.D.
28. Student Name: Anandkrishna Parameswaran

- Thesis Title: "Improving Bandwidth Efficiency in Survivable Optical Networks'  
Defense Date: November 1, 2002  
Co-Major Professors: Wilfrido A. Moreno & Dr. Miguel Labrador  
Committee Member: Dr. Kenneth Buckle
29. Student Name: Rishikesh Gokhale  
Thesis Title: "Packet Loss Concealment In VoIP"  
Defense Date: November 5, 2002  
Major Professor: Wilfrido A. Moreno  
Committee Members: James T. Leffew, Ph.D., Fernando Falquez, Ph.D.
30. Student Name: Sampath Ganji  
Thesis Title: "ASIC Implementation of a Custom ADPCM Encoder"  
Defense Date: October 31, 2002  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Paris Wiley, Ph.D.
31. Student Name: Prashant Datar  
Thesis Title: "System Integration and Testing Using Object Oriented Programming Based Control"  
Defense Date: October 31, 2002  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Grisselle Centeno, Ph.D.
32. Student Name: Eduardo E. Zurek  
Thesis Title: "Voice Quality Measurements For VoIP Compression Algorithms"  
Defense Date: September 24, 2002  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Kenneth A. Buckle, Ph.D.
33. Student Name: Pierfranco Issa  
Thesis Title: "Measurement and Statistical Analysis of an IEEE 802.11b Wireless LAN (WLAN) System"  
Defense Date: September 23, 2002  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: David Snider, Ph.D., James T. Leffew, Ph.D.
34. Student Name: Kiran Pasuparthi  
Thesis Title: "A PIC Microcontroller-Based Caller ID on TV Display Unit"  
Defense Date: September 17, 2002  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Paris Wiley, Ph.D.
35. Student Name: Sree Krishna Lolla - Master's Project  
Thesis Title: "Hardware Implementation of One Dimensional Discrete Cosine Transform"  
Defense Date: July 11, 2002  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Fernando J. Falquez, Ph.D.
36. Student Name: Arnildo Cardozo Daza

- Thesis Title: "Hardware Implementation of an Enhanced Video Coder"  
Defense Date: July 2, 2002  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Kenneth Buckle, Ph.D., James Leffew, Ph.D.
37. Student Name: Jorge Galvis  
Thesis Title: "Image Compression using a Wavelet Transform"  
Defense Date: April 30, 2002  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph. D., Wei Qian, Ph.D.
38. Student Name: Antara Basu  
Thesis Title: "Enhanced Coder with Error Resilience: A Software Implementation"  
Defense Date: November 9, 2001  
Major Professor: Dr. Wilfrido Moreno  
Committee Members: Paris Wiley, Ph.D., Wei Qian, Ph.D
39. Student Name: Rafael E. Alonso  
Thesis Title: "Data Acquisition Devise with Packet Based Communication Protocol for Engine Monitoring"  
Defense Date: November 5, 2001  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Ken Buckle., Ph.D., Jim Leffew, Ph.D.
40. Student Name: Serita Narinesingh  
Thesis Title: "Analysis of Pattern Dependencies on Copper Damascene Chemical Mechanical Polishing"  
Defense Date: September 4, 2001  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Mariappan Hariharaputhiran, Ph.D.
41. Student Name: Antara Basu: Master's Project  
Thesis Title: "Enhanced Coder with Error Resilience: A Software Implementation"  
Defense Date: November 9, 2001  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Paris Wiley, Ph.D., Wei Qian, Ph.D.
42. Student Name: Aravind Ramammorthy  
Thesis Title: "Tracking of Mobile Agents for Wireless Devices: Applied to the Prepaid Cellphone Management Concept"  
Defense Date: July 19th, 2001  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Kenneth A. Buckle, Ph.D, James Leffew, Ph.D.
43. Student Name: Gokulakrishnan T. Gopalakrishnan  
Thesis Title: "Standardizing Call Control in Voice Over Internet Applications: A MGCP Approach"  
Defense Date: May 8th, 2001  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: Andy Falquez, Ph.D., Kenneth A. Buckle, Ph.D.

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44. Student Name: Sankar Sukavanam  
Thesis Title: "Interoperability in VOIP Messaging Using Media Gateway Control Protocol"  
Defense Date: May 8th 2001  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: Andy Falquez, Ph.D., James Leffew, Ph.D.
45. Student Name: Imrankhan M Pathan  
Thesis Title: "Data Compression techniques for a Novel Distance Education Technology"  
Defense Date: March 22, 2001  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Kenneth A. Buckle Ph.D.
46. Student Name: Franklyn A. Diaz  
Thesis Title: "Test Automation and Design of Experiment for Microelectronics CMP Pads"  
Defense Date: December 7, 2000  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Kenneth Buckle, Ph.D., James Leffew, Ph.D.
47. Student Name: Jayendra Gagvani  
Thesis Title: "MODELING OF CONTROL SYSTEM COMPONENTS USING VHDL-AMS"  
Defense Date: September 14, 2000  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Fernando J. Falquez, Ph.D.
48. Student Name: Ramakrishna Uppalapati  
Thesis Title: "Prefetching Stored Video for Efficient End-to-End Delivery Over Wide Area Networks"  
Defense Date: November 22, 2000  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: Kenneth A. Buckle, Ph.D., Dr. Fernando A. Falquez
49. Student Name: Venkataraman Rajaraman  
Thesis Title: "Analysis Design and Testing of Pre-paid Cellular Phones"  
Defense Date: November 22, 2000  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: Dr. Kenneth A. Buckle, Dr. Fernando A. Falquez
50. Student Name: Giju John - Master's Project  
Thesis Title: "Design and Simulation of Intel 8257 DMA Controller"  
Defense Date: June 23, 2000  
Major Professor: Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Fernando Falques, Ph.D.
51. Student Name: Anuj Zaverchand  
Thesis Title: "Requirements Analysis in Relational Systems"  
Defense Date: March 8, 2000  
Major Professor: Wilfrido Moreno, Ph.D.  
Committee Members: James Leffew, Ph.D., Carlos Smith, Ph.D.

52. Student Name: Vikram Reddy Pasham  
Thesis Title: "Laser Interconnects Based Multi-FPGA System"  
Defense Date: August 11, 1999  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee Members: James T. Leffew, Ph.D., Fernando J. Falquez, Ph.D.
53. Student Name: Rafael Cardenas  
Thesis Title: "Remote Supervisory Control via the Internet"  
Defense Date: July 8, 1999  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee members; Samuel J. Garrett, James T. Leffew
54. Student Name: Shreyas Sarangan  
Thesis Title: "Optimistic Remarking with RIO for Differentiated Services over the Internet"  
Defense Date: July 15, 1999  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee members: Ken Buckle, Ph.D., Tappas Das, Ph.D.
55. Student Name: Shyam B. Ganapathisarma  
Thesis Title: "System Design of Pre-Paid Cellular Phone with Caller Authentication"  
Defense Date: November 25, 1997  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee members: Kenneth Buckle, Ph.D., Paul Flikkema, Ph.D.
56. Student Name: Ketan Poladia  
Thesis Title: "FPGA Design for the Application Specific Signal Processing Algorithms and WSI Technology"  
Defense Date: May 19, 1997  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee members: Samuel Garrett, Ph.D., N. Ranganathan, Ph.D.
57. Student Name: Rajat Anand  
Thesis Title: "A VLSI ATM Switch Architecture for VBR Traffic"  
Defense Date: May 5, 1997  
Co-Major Professor: Wilfrido Moreno, Ph.D.  
Co-Major Professor: N. Ranganathan, Ph.D.  
Committee members: Prof. H. Nienhaus.
58. Student Name: Pankaj Singh  
Thesis Title: "Flexible MPEG Audio Decoder Layer III Chip Architecture"  
Defense Date: April 28, 1996  
Co-Major Professor: Wilfrido Moreno, Ph.D.  
Co-Major Professor: N. Ranganathan, Ph.D.  
Committee members: Prof. H. Nienhaus.
59. Student Name: Otto Acon  
Thesis Title: "Top Down Design Methodology Applied to a Mixed Signal Wireless Application"  
Defense Date: April 4, 1997  
Major Professor, Wilfrido A. Moreno, Ph.D.  
Committee members: James Leffew, Christos Ferekides, Paul Flikkema

60. Student Name: Rajesh Chandra  
Thesis Title: "A Linear Systolic Algorithm and Architecture for Convex Bipartite Matching"  
Defense Date: March 1, 1996  
Co-Major Professor: Wilfrido Moreno, Ph.D.  
Co-Major Professor: N. Ranganathan, Ph.D.  
Committee members: A. David Snider

### **Publications**

#### Book Chapters:

- Publisher: Springer  
Editor: Dr. Kimon P. Valavanis  
Book Title: ADVANCES IN UNMANNED AERIAL VEHICLES - *State of the art and the road to autonomy*  
Chapter 5: Miniature Helicopter Control: A survey by M. Castillo, K. Valavanis, W. Moreno, USF  
Chapter 6: Small Unmanned Helicopter Controller Design for Non-aggressive Flights, W. Alvis, C. Castillo, M. Castillo-Effen, K. Valavanis, W. Moreno, USF  
Deadline: October 31, 2006

### **Publications in Refereed Journals**

1. A. M. Cardenas-Valencia, J. Dlutowski, J. Bumgarner, L. Langebrake and W. Moreno, "Long Shelf -life, Al-anode Micro-fabricated Cells activated with Alkaline-H<sub>2</sub>O<sub>2</sub> Electrolytes", Journal of Micromechanics and Microengineering, vol. 16, pp. 1511 – 1518, June 2006
2. Grisselle Centeno, Vijayalakshmi Sampath, Wilfrido Moreno, Bhaskar Tadi and Jorge Manguel, "Nondestructive Characterization of CMP Pads Using Statistical Design Analysis", IEEE Transactions On Semiconductor Manufacturing, vol 8, NO. 4, November 2005
3. Anandkrishna Parameswaran, Miguel A. Labrador, Wilfrido A. Moreno and Ibrahim Habib, "Improving Bandwidth Efficiency in Fault-Tolerant Opaque IP over Optical Mesh Networks", International Journal of Network Management, vol. 14, No. 1, pp. 19-27, January-February 2004
4. J. Rujano, R. Crane, M. Rahaman, W. Moreno, "Numerical Analysis of Stabilization Techniques for the Oscillatory Convective Flow in Czochralski Crystal Growth", Journal Crystal Growth, Vol. 245, pp. 149-162, April 2002
5. Moreno W., J. Samson, F. Falquez "Laser Injection of Soft Faults for the Validation of Dependability", Journal of Universal Computer Science, vol. 5 (10), pp. 693-711, October 1999

### **Journal Papers Submitted:**

6. 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”, Submitted to the IEEE Transactions on Information Theory, June 2006
7. D. E. Huffman, W. Moreno, L. H. García Rubio and G. Leparc, “Malaria Diagnosis using Biophotonics”, Journal of Clinical Chemistry, Submitted May 2006
  8. L. Barnes, W. Alvis, M. Fields, K. Valavanis and W. Moreno, “Swarm Formation Control with Potential Fields Formed by Bivariate Normal Functions”, IEEE Transactions on Systems, Man and Cybernetics, Part B – Submitted
  9. J. Dlutowski, A. M. Cardenas-Valencia, W. Wang, C. Biver, S. Knighton, J. Bumgarner, L. Langebrake and W. Moreno, “Development of BCB-Sealed Galvanic Cells. Case-Study: Aluminum-Platinum Cells Activated with Sodium Hypochlorite Electrolyte Solution”, Submitted to, J. Micromechanics. and Microengineering, Submitted September 2006

**Journal Papers in currently in Preparation:**

10. Mauricio Castillo-Efren, Kimon P. Valavanis, Wilfrido A. Moreno and Miguel A. Labrador, "A Novel Sequential Estimation Algorithm for Cooperative Localization in Wireless Sensor Networks", International Journal of Parallel Emergent Distributed Systems (IJPEDS)

**Note: This paper has been invited to be submitted to the special issue of the International Journal of Parallel Emergent Distributed Systems (IJPEDS), before November 15, 2006, due to its research novelty and quality.**

11. Alexandro Castellanos, August J. Heim I, W. Garrett Matthews, Ryan G. Toomey and Wilfrido A. Moreno, “Patterned Cross-linked poly(N-isopropylacrylamide) Layers for Separations in BioMEMS”, IEEE Journal of Microelectromechanical Systems - Anticipated date of submission November, 2006
12. Alexandro Castellanos, Samuel J. Dupont, Meter G. Stroot, Ryan G. Toomey and Wilfrido A. Moreno, “Poly(N-Isopropylacrylamide) Based BioMEMS/NEMS for Cell Manipulation”, Journal Lab on a Chip - Anticipated date of submission December, 2006
13. Alexandro Castellanos, Samuel J. Dupont, Meter G. Stroot, Wilfrido A. Moreno and Ryan G. Toomey, “Thermally Responsive Polymers Networks Relief Patterns for BioSamples Sorting”, Journal of Applied Polymer Science - Anticipated date of submission December, 2006.
14. Andres Lombo, Gloria Becerra and Wilfrido Moreno, “Sharable Content Object Reference Model, (SCORM) - Based Nanoscale Electronic Devices Modeling Methodology”, IEEE Circuit, Devices and Systems Journal - Anticipated date of submission December, 2006
15. Andres Lombo, Gloria Becerra, Alfonso Lombana and Wilfrido Moreno, “Integrated Modeling Methodology for Nanoscale Electronic Devices”, IEEE Circuit, Devices and Systems Journal - Anticipated date of submission December, 2006

16. Ravi Samala, Wilfrido Moreno, Xuejun Sun, Eikman Edward and Wei Qian, "Anisotropic Filtering for Efficient Suspicious Region Segmentation for Tomosynthesis Images", will be submitted to the Journal Academic Radiology by Mid November 2006
17. Balaji Ramadoss, Wilfrido Moreno, Dansheng Song and Wei Qian, "Application of a Computer-Aided Diagnosis System for Microscopic Images", will be submitted to Journal of IEEE Transactions on Medical Imaging by Mid November 2006
18. Richard Schreck, Wei Zhu, Rosann Collins, James Green, Iona Sarieva and Wilfrido Moreno, "Lexical Bundles in Virtual Collaboration for Scientific Projects", Journal article in preparation
19. J. Dlutowski, M. Calves, D. P. Fries, J. Bumgarner, L. C. Langebrake, W. Moreno and A. M. Cardenas-Valencia, "On-Wafer, Al-Anode Micro Cells: Fabrication towards the Development of High Performance, Thin Batteries", Journal of Microelectromechanical Systems - Pending sponsor release approval
20. Eduardo Zurek, Luis Garcia-Rubio and Wilfrido Moreno, "Numerical Optimization of the Model of a Diffraction Grating: Turbo-Grating-Model", in preparation for IEEE Transactions on Instrumentation and Measurement - Anticipated date of submission December 2006
21. Eduardo Zurek, Luis Garcia-Rubio and Wilfrido Moreno, "Effects of Miniaturization in Spectroscopy Systems", in preparation for IEEE Transactions on Instrumentation and Measurement - Anticipated date of submission December 2006

#### **Publications in Refereed Conferences**

1. A. Lombo, G. Becerra and W. Moreno, "Integrated Modeling Methodology for Nanoscale Electronic Devices", First International Conference on Quantum, Nano, and Micro Technologies ICQNM 2007 - IEEE, IARIA, (International Academy, Research and Industry Association), Guadeloupe - French Caribbean, January 2-6, 2007
2. A. Lombo, G. Becerra and W. Moreno, "CORM Based Nanoscale Electronic Devices Modeling Methodology", IEEE International Solid-State Circuits Conference - ISSCC 2007, San Francisco – CA, February 11-15, 2007
3. A. Lombo, G. Becerra and W. Moreno, "SCORM-based Models for Nanoelectronic Devices", 3rd International Congress of Nanotechnology, San Francisco – CA, October 30-November 2, 2006
4. Mauricio Castillo-Efren, Kimon P. Valavanis, Wilfrido A. Moreno and Miguel A. Labrador, "Adapting Monte-Carlo Sequential Estimation to Cooperative Localization in Wireless Sensor Networks", Proceedings of the 3rd IEEE International Conference on Mobile Ad-Hoc and Sensor System, (MASS 2006), Workshop on Localized Communication and Topology Protocols for Ad Hoc Networks, (LOCAN 2006), October 2006.

5. Ramiro Jordán, Wilfrido Moreno, Alfredo Roldan, Christos Christodoulou, Sul Kassiech and Raul DeGouvea, "Incorporating Economics, Entrepreneurship and Sustainability in Engineering for the Americas", 5th Annual ASEE Global Colloquium on Engineering Education - "Engineering Education in the Americas and Beyond", Rio de Janeiro, Brazil, October 9 – 12, 2006
6. Sun XJ, Walker Land and Wilfrido Moreno, "Anisotropic Filtering and Computerized Detection of Breast Cancer with a Tomosynthesis System", 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 30 - September 3, 2006, New York, USA
7. Wilfrido Moreno, Ramiro Jordan,, Carlos Callegari, Balaji Ramadoss, Dale C. Alverson, and Jorge Garcia, "Ibero-American Science Technology and Education Consortium: ISTECH-Health", 9<sup>th</sup> International Conference on Engineering Education, San Juan Puerto Rico, July 23-28, 2006
8. L. Barnes, W. Alvis, M. Fields, K. Valavanis and W. Moreno, "Heterogeneous Swarm Formation Using Bivariate Normal Functions to Generate Potential Fields", Proceedings of the IEEE Workshop on Distributed Intelligent Systems: Collective Intelligence and Its Applications, (DIS'06), 2006
9. Alexandro Castellanos, Ají Bieber, Alfonso Lombana, Ramiro Jordan, James Leffew, Wilfrido Moreno, "Research and Education Network for the America's Region, (RENAR): ISTECH'S Micro/Nano systems Mobile Training Program, (MTP)", Proceedings of the 6th IEEE International Caribbean Conference on Devices, Circuits and Systems, (ICCDSCS), April 2006.
10. George Lukachan, Miguel A. Labrador and Wilfrido Moreno, "Scalable and Energy-efficient Routing Protocol for Large-scale Wireless Sensor Networks", Proceedings of the 6th IEEE International Caribbean Conference on Devices, Circuits and Systems, (ICCDSCS), April 2006
11. Richard Schreck, Wei Zhu and Wilfrido Moreno, "Stance Markers During Virtual Scientific Collaboration" Presented at the National Conference of TESOL: Teachers of English to Speakers of Other Languages - Tampa, March 2006
12. C. Castillo, W. Alvis, M. Castillo-Effen, K. Valavanis and W. Moreno, "Small Scale Helicopter Analysis and Controller Design for Non-Aggressive Flights", CD-ROM Proceedings, IEEE International Conference on SMC, Hawaii, October 2005
13. M. Castillo-Effen, W. Alvis, C. Castillo, K. P. Valavanis and W. Moreno, "Modeling and Visualization of Multiple Autonomous Heterogeneous Vehicles", CD-ROM Proceedings, IEEE International Conference on SMC, Hawaii, October 2005
14. Mauricio Castillo, Wendy Alvis, Carlos Castillo, Wilfrido Moreno and Kimon Valavanis, "Modeling and Visualization of Multiple Autonomous Heterogeneous Vehicles", IEEE SMC 2005 International Conference on Systems, Man and Cybernetics, Hawaii, USA - October 10-12, 2005
15. Carlos Castillo, Wendy Alvis, Mauricio Castillo, Wilfrido Moreno and Kimon Valavanis, "Small Scale Helicopter Analysis and Controller Design for Non-

- Aggressive Flights”, IEEE SMC 2005 International Conference on Systems, Man and Cybernetics, Hawaii, USA - October 10-12, 2005
16. Mauricio Castillo, Oscar Gonzáles, Daniel Quintela and Wilfrido Moreno. SIOMTEC, “Wireless Sensors – The ROSA Project”, Bogotá-Colombia, September 2005
  17. Andres Lombo and Wilfrido Moreno, SIOMTEC, "Modelamiento y Simulacion de Nanodispositivos", Bogotá-Colombia, September 2005
  18. Jay A. Bieber, Stephen E. Sadow, Charu Chawla and Wilfrido Moreno, “Synthesis of Nanoscale Structures in Single Crystal Silicon Carbide by Electron Beam Lithography”, Fifth IEEE International Caracas Conference on Devices, Circuits and Systems, ICCDCS 2004, Punta Cana, Dominican Republic, November 3 – 5, 2004
  19. Mauricio Castillo-Effen, Daniel H. Quintela, Ramiro Jordan, Wayne Westhoff and Wilfrido A. Moreno, “Wireless Sensor Networks for Flash-Flood Alerting”, Fifth IEEE International Caracas Conference on Devices, Circuits and Systems, ICCDCS 2004, Punta Cana, Dominican Republic, November 3 – 5, 2004
  20. Wendy Ann Alvis, James Leffew, Charu Chawla and Wilfrido Moreno, “Using Sliding Mode Controller Techniques To Design PWM DC-DC”, Fifth IEEE International Caracas Conference on Devices, Circuits and Systems, ICCDCS 2004, Punta Cana, Dominican Republic, November 3 – 5, 2004
  21. Alexandro Castellanos, Jay Bieber, Andres Lombo, James Leffew and Wilfrido A. Moreno, “Fabrication of Nanoscale Structures by Electron Beam Lithography”, IV Iberoamerican Sensor Conference - IBERSENSOR 2004, Puebla, Mexico, October 27-29, 2004
  22. Sadashi Seto, Eduardo Zurek, Charu Chawla, James Leffew and Wilfrido Moreno, “Development and Implementation of a DSP based Control for a Hexapod Robot”, CCCT’04 International Conference on Computing, Communications and Control Technologies, Austin – Texas, August 14-17, 2004
  23. Carlos Castillo and Wilfrido Moreno, “Face Recognition Using Principal Component Analysis and Neural Networks”, Primer Congreso Ibero-Americano de Estudiantes De Ingeniería Eléctrica, (I CIBELEC 2004), Mérida, Venezuela, August 8 – 12, 2004
  24. Norali Pernaleté, Wentao Yu, Rajiv Dubey and Wilfrido A. Moreno, “Telerobotic Haptic System to Assist The Performance of Occupational Therapy Tests by Motion-Impaired Users”, ICRA03 – 2003, IEEE International Conference on Robotics and Automation that was held in Taipei, Taiwan, May 12 to May 17, 2003
  25. John Dhanraj, Stephen Sundarrao, Wentao Yu, Rajiv V. Dubey and Wilfrido Moreno, “SEMI-AUTOMATED NAVIGATION CONTROL SYSTEM IN POWERED WHEELCHAIRS”, RESNA May 2003, Atlanta Georgia
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66. "The Performance of Circuits Built with Laser Programmable Interconnects," GOMAC, Government Microcircuits Applications Conference. November 7-10, 1994.
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69. "Laser Created High Density Interconnects for Quick Prototyping of Electronic Circuits", 44 Electronic Components Technology Conference, Washington DC., May 1-4, 94.
70. "Laser Programmable Interconnects for the Quick Turn Around of Electronic Systems," Government Microcircuit Applications Conference (GOMAC), Nov. 1-4, 1993
71. "Computer Aided Laser Processing," National Electronics and Production Conference (NEPCON Southeast '93), Oct 26-28, 1993.
72. "Using MATLAB for Algorithm Development: A Coordinate Mapping for A Rapid Prototyping System," MATLAB Conference, October 16, 1993.
73. "High Density Interconnects for Rapid Prototyping of Electronic Systems," IEEE/CHMT Electronics Manufacturing Technology Symposium, Oct 4-6, 1993



74. "High Density Interconnects for Rapid Prototyping of Electronic Systems," 15th IEEE/EMT International Manufacturing Technology symposium, Sept 93.
75. "Rapid Prototyping Using Laser Restructurable VLSI Circuits," IEEE 4th Int. Workshop on Rapid System Prototyping, June 28-30 1993
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80. "Laser Created Silicon Vias for Stacking Dies in MCMs," Eleventh (1991) IEEE/CHMT International Electronics Manufacturing Symposium, San Francisco, CA, Sept. 16-18, 1991
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## CONFERENCES AND PRESENTATIONS

### International

Note: Over ninety technical presentations and major speeches have been given since becoming the Director of the R&D Initiative of ISTECH in 2001 in Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, Mexico, Peru, Puerto Rico, Tanzania, Venezuela and the USA.

### NON-REFEREED TECHNICAL PUBLICATIONS:

1. L. H. Garcia-Rubio, D. Huffman, and Wilfrido Moreno, *Testing and Validation of a Novel Spectroscopy Method for Rapid Diagnosis of Malaria and Dengue Fever*. Final Report, Grant No 6401-1001-00, College of Public Health, University of South Florida, November 11, 2005
2. Wilfrido Moreno, Eduardo Zurek, Andres Lombo, "Communication Interface For A Portable Spectroscopy System For The Project: "A Pilot Test And Validation Of A Novel Spectroscopy Method For Rapid Diagnosis Of Malaria And Dengue Fever", Global Center For Disaster Management And Humanitarian Action – Final Report, August 26, 2005 (38 pages)
3. Wilfrido Moreno, Mauricio Castillo, Daniel Quintela, Oscar González, Jaime Dimate, Karim Souccar, Sai Kiran Rupanagudi, and Wayne Westhoff, "Rapid Organization

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4. Wilfrido Moreno, Miguel Labrador, James Leffew,: “Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation & Control Systems” to Dr. Harold Stolberg, Program Coordinator, SBE, Division of International Programs at NSF Final Report, August 25, 2005 (20 pages)
  5. Wilfrido Moreno, Miguel Labrador, James Leffew, “Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation & Control Systems” to Dr. Harold Stolberg, Program Coordinator, SBE, Division of International Programs at NSF – Final Report, February 2005 (25 pages)
  6. Wilfrido Moreno, “Single Event Transient Evaluation of Analog Components Using Laser Fault Injection”, Florida High Tech/Honeywell Final Report, February 4, 2005
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  8. Wilfrido Moreno, Miguel Labrador, James Leffew, “Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation & Control Systems” to Dr. Harold Stolberg, Program Coordinator, SBE, Division of International Programs at NSF – Yearly Status Report, October 10, 2004 (15 pages)
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  13. Wilfrido Moreno, James Leffew, “The Transfer of Information Through Workshops and International Technology Networking Topic: Infectious Disease Prevention - Case Study: Dengue”, Global Center for Disaster Management and Humanitarian Action – Final Report, September 12, 2002
  14. Wilfrido A. Moreno, Kenneth A. Buckle, “Analysis of Digital Cellular Protocols for the Software Development and/or Hardware Implementation of Dual-Mode Prepaid Cellular Communications”, I-4/, SATX, Inc.Final Report, March 7, 2001
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18. Wilfrido Moreno, Ph.D., John Falcone, " " Hardware/Software Implementation for Voice over IP", 1997/1998 I-4 Project IPAXS Corporation Final Report (A/C 2112-114-LO), November 2, 1998.
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33. Wilfrido Moreno, Ph.D., Shyam B. Ganapathisarma, "Dual-Use Cellular Technology", USF – RAMP/OMNI Status Report, October 8, 1996.

Note: Over 75 project status and final reports have been written since 1994.

#### **PROFESSIONAL ORGANIZATIONS AND ADDITIONAL CERTIFICATIONS:**

- State of Florida Licensed Professional Engineer
- Member of IEEE, (Since 1988), and the following societies within the IEEE
  - Control System Society.
  - Education Society/ IEEE Trans on Education
  - Circuits and Systems Society/Circuits and Systems Magazine
  - Transactions on Very Large Scale Integration Systems
  - Components, Packaging, and Manufacturing Technology Society
  - Electron Devices Society
  - Transactions on Device and Materials Reliability
  - IEEE/ASME Journal of Microelectromechanical Systems
  - Instrumentation and Measurement Society/Instrumentation and Measurement Magazine/Transactions on Instrumentation & Measurement
  - Signal Processing Society/Signal Processing Magazine
  - Journal of Solid-State Circuits/Solid-State Circuits Society/Solid-State Circuits Conference
  - Solid-State Circuits
- Member of the Kappa Xi Chapter of Eta Kappa Nu
- Vice-president for the International Society of Hispanics Professional Engineers based in Tampa, Florida
- Active member of the Professional SHPE Chapter

#### **PATENTS:**

- United State Patent No. 6,258,633, Issued: July 10, 2001, titled: "Laser-Programmable Interconnect of Integrated Circuits Chips (ICS)".
- A patent has been submitted on September 3, 1998 by Lucent Technologies and USF to the US patent office titled: "Non-destructive Technique to Measure Degree of Bond Completion in Urethane Polishing Pads"