

## **Miguel A. Labrador, Ph.D.**

University of South Florida  
Department of Computer Science and Engineering, ENB 118  
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Personal Website: <http://www.csee.usf.edu/~labrador>

Location-Aware Information Systems Lab Website: <http://www.locationaware.usf.edu/>

### **I. GENERAL DATA**

#### **Education**

- October 2000. **Doctor of Philosophy** in Information Science – Telecommunications. University of Pittsburgh, Pittsburgh, PA.  
Dissertation title: Buffer Management and Quality of Service (QoS) Predictability for Best Effort Traffic.  
Advisor: Dr. Sujata Banerjee.
- August 1994. **Master of Science** in Telecommunications, University of Pittsburgh, PA.  
Major courses taken: Communications Protocols, High-speed Networks, Network Performance, Queueing Theory, U.S. Policy.
- December 1983. **Bachelor of Science** in Electronics Engineering. Instituto Universitario Politécnico de las Fuerzas Armadas Nacionales (IUPFAN), Venezuela.

#### **Academic Experience**

- May 2016–Present. University of South Florida, Tampa, FL  
*Professor and Graduate Program Director*, Department of Computer Science and Engineering.
- Aug. 2013–Present. University of South Florida, Tampa, FL  
*Professor*, Department of Computer Science and Engineering.
- Aug. 2013–May. 2014. University of South Florida, Tampa, FL  
*Professor and Graduate Program Director*, Department of Computer Science and Engineering.
- Aug. 2010–Aug. 2013. University of South Florida, Tampa, FL  
*Associate Professor and Graduate Program Director*, Department of Computer Science and Engineering.
- Aug. 2007–Aug. 2013. University of South Florida, Tampa, FL  
*Associate Professor*, Department of Computer Science and Engineering.
- Sept. 2004–Aug. 2015. University of South Florida, Tampa, FL  
*Courtesy Faculty Associate*, Center for Urban Transportation Research (CUTR).
- Aug. 2001–Aug. 2007. University of South Florida, Tampa, FL  
*Assistant Professor*, Department of Computer Science and Engineering.

## Industry Experience

- Oct. 2000–Jul. 2001. **Telcordia Technologies Inc.**, Red Bank, NJ.  
*Consultant.* Design of communication networks based on broadband technologies for telecommunications carriers and large enterprises around the world. Telcordia was formerly Bellcore, the research and development branch of all the Bell operating companies after AT&T's divestiture in 1984.
- Jan. 1997–Apr. 1997. **INTESA (SAIC Subsidiary)**, Refinery of Amuay, Venezuela.  
*Telecommunications Consultant.* Assisted high-level management in the reorganization of personnel, activities, budget, and services of Telecommunications just after the joint venture process done with Petróleos de Venezuela, S.A. (PDVSA).
- Jan. 1985–Dec. 1996. **LAGOVEN, S.A.**, Venezuela.  
*Telecommunications Supervisor*, Jan. 1996–Dec. 1996. Operated and maintained the telecommunications systems and services of the Refinery of Amuay. They included conventional and trunking radio systems, beepers, microwave links, client/server and SNA network, TV satellite and videoconference, and telephone systems. Main administrative duties included personnel management and budgeting. Led a staff of 22 persons.
- *National Data Network Coordinator*, Sep. 1994–Dec. 1995. Coordinated technical and administrative tasks related to the corporation data network consisting of a SNA network and a router-based network. Responsibilities included budgeting and Tactical & Strategic Plan for networking.
- *National Telephone Network Coordinator*, Dec. 1989 – Jun. 1992. Coordinated technical and administrative tasks related to the corporation telephone network. Responsibilities included design and submission of investment budgets as well as Technical and Operational Plans for the Telephone infrastructure.
- *Telecommunication Engineer*, Jan. 1985 – Nov. 1989. During almost five years as a Telecommunication Engineer, assumed a variety of responsibilities, including the operation and maintenance of a GTD-4600 and a GTD-1000 telephone systems (3500 lines and 450 trunks total) and their related wiring infrastructure, as well as an international (satellite) transmission system used for voice and data.

## Professional Licensure

Colegio de Ingenieros de Venezuela

## Awards, Honors

- "Orientation Invariant Gait Matching Algorithm based on the Kabsch Alignment," *IEEE International Conference on Identity, Security and Behaviour Analysis*, **Best Student Paper Award**, March 2015.
- "Real-time Pedestrian Tracking in Indoor Environments," IEEE Latincom 2014 Best Paper Award. Authored by Alejandra Vidal, Juan Marron and Miguel A. Labrador.
- Member of the **Computing Research Association Committee on Education (CRA-E)**. Invited to participate in this prestigious committee for a second term: October 2013 - July 2014.
- Member of the **Computing Research Association Committee on Education (CRA-E)** for 2013.
- **2012 College of Engineering Outstanding Research Achievement Award.**

- Member of the **Computing Research Association Committee on Education (CRA-E)**. Invited to participate in this prestigious committee to study how undergraduate education can better support computationally-oriented research. The committee consists of only 11 member of national reputation on computer science education. The term of service is one year beginning October 2011.
- **2010 Hispanic Pathways Award** in the tenured faculty category. The Hispanic Pathways awards were created in 2004 by the USF Latin Community Advisory Committee to recognize USF tenured and non-tenured faculty for outstanding research and/or outreach that creates pathways to the betterment of the lives of Latinos in our community, state or nation. September 2010.
- **2010 Diversity Honor Roll Award** given by the Office of Diversity and Equal Opportunity, USF, April 8, 2010.
- Inducted as a charter member in the **USF Academy of Inventors**, October 5, 2009.
- **2008 USF Excellence in Innovation Award**, for the highly innovative work done in the area of Location-Aware Information Systems.
- **2008 USF graduate student poster competition, 2<sup>nd</sup> place in Engineering**, as faculty advisor of Cesar Guerrero for his work on Available Bandwidth Estimation Techniques.
- Certificate of Appreciation as the advisor of Cesar Guerrero, recipient of the 2008 USF Outstanding Graduate Teaching Assistant Provost Award.
- College of Engineering's nominee for the 2008 U.S. Professor of the Year Award.
- **2006-2007 USF Outstanding Undergraduate Teaching Award.**
- Received \$80,000 grant from the Transportation Research Board of the National Academies - Transit-IDEA (Innovations Deserving Exploratory Analysis) Program. This is the first time this prestigious award is granted to CUTR. One year grant, August 2006.
- Awarded the 2<sup>nd</sup>. Annual Computer Science and Engineering Department's Outstanding Graduate Research Award. I was awarded the 1<sup>st</sup> place in the Master of Science category as advisor of George Lukachan for his research, "SELAR: Scalable Energy-Efficient Location Aided Routing Protocol for Wireless Sensor Networks", November 2005.
- Awarded the 2<sup>nd</sup>. Annual Computer Science and Engineering Department's Outstanding Graduate Research Award. I was awarded 2<sup>nd</sup> place in the Master of Science category as advisor of Laura Voicu for his research, "An Analytical Model for the SF-SACK Protocol", November 2005.
- Awarded 2<sup>nd</sup> place in the **2005 American Society for Engineering Education (ASEE), Southeastern Section New Faculty Research Award** competition, April 2005.
- Awarded 1<sup>st</sup> place in the Third Annual USF Undergraduate Research Symposium paper competition in the Physical Sciences and Engineering category as mentor of Dmitry Kalyadin.
- Awarded the 1<sup>st</sup>. Annual Computer Science and Engineering Department's Outstanding Graduate Research Award. I was awarded 1<sup>st</sup>. place in the Master of Science category as advisor of Srinivas Bandi Ramesh Babu for his research, "Service Differentiation Schemes for 802.11 Wireless Local Area Networks", November 2004.
- Elevated to the position of **Senior Member of the IEEE**, August 2004.
- Awarded the "Poster for Engineering" during the USF, Honors College, 2<sup>nd</sup> Annual Undergraduate Research Symposium. I presented the REU work on, "Traveling Smart: Increasing Transit Ridership by Automatic Collection (TRAC) of Individual Travel Behavior Data and Personalized Feedback", by S. Barbeau, E. Banguero, A. Mageed, M. A. Labrador, R. Perez, and P. Winters.
- Elected **Secretary of the IEEE Technical Committee on Computer Communications (TCCC)** (<http://www.comsoc.org/~tccc/>). Two-year term (December 2001 to 2003).

- Chosen as an Honoree at the University of Pittsburgh, 2000 Honors Convocation, February 2000.
- Member of Beta Phi Mu since October 2000.
- Awarded a Graduate Research Assistantship, University of Pittsburgh, April 1997-October 2000.
- Received the School of Information Sciences Robert R. Korfhage Award, University of Pittsburgh, 1999.
- Chosen as an Honoree at the University of Pittsburgh, 1995 Honors Convocation, February 1995.
- Chosen as the **Outstanding Student of the Year** by the International Communication Association (ICA), 1994. I received the award as co-winner of the 1994 Student paper Competition for graduate students in Telecommunications with the paper, "SNA-LAN Integration," in Dallas, Texas, 1994.
- Granted a Scholarship, from LAGOVEN, S.A. Venezuela, to pursue a Master degree in Telecommunications, in the USA, June 1992-August 1994.

### **Professional and Honorary Societies**

- Faculty advisor, USF's Venezuelan Student Association (VESTA) (<http://www.ctr.usf.edu/vesta/>) since its foundation in June 2005.
- Faculty advisor of the Communication Networks Group at USF (CommNet) (<http://commnet.cse.usf.edu>) since its foundation in September 2006.
- Member of IEEE Technical Committees on Computer Communications (TCCC), Optical Networking Technical Committee (ONTC), Communications System Integration and Modeling (CSIM), Ad Hoc and Sensor Networks (AHSN).
- Senior Member of IEEE, Communications Society.
- Member of the Association for Computing Machinery (ACM) special interest group on Data Communications (SIGCOMM).
- Member of the Association for Computing Machinery (ACM) special interest group on Computer Science Education (SIGCSE).
- Member of the American Society for Engineering Education (ASEE).
- Beta Phi Mu.
- Member of Colegio de Ingenieros de Venezuela.

## II. TEACHING

### Courses Developed

- *Software Development for Mobile Devices* (COP 4656), an undergraduate course on software development under the Android platform (taught spring 2012 for the first time).
- *Programming Concepts* (COP 2510), first course on Java programming for undergraduates.
- *Advanced Networks* (CIS 6930), a graduate course on Ubiquitous Sensing (taught for the first time fall 2010).
- *Location-Based Information Services* (taught spring 2010 for the first time).
- *Graduate Networks* (CIS 6930), a course on Performance Evaluation of Computer Networks.
- *Networks II* (EEL 4930), a hands-on lab-based class in Computer Networks for undergraduates.
- *Computer Networks* (EEL 4781), introductory course in Computer Networks for undergraduates.
- *Software Engineering* (CEN 4020), an introductory course for undergraduates.
- *Computer Networks* (CIS 6930), introductory course for graduate students.
- *Advanced Networks* (CIS 6930), advanced course on optical networking and bandwidth estimation techniques.
- *Advanced Networks* (CIS 6930), advanced course on wireless ad hoc and sensor networks.

### Innovative Methods and Efforts to Improve Teaching

- Attended workshop on Git and GitHub as part of the 2014 ACM SIGCSE Conference. This is a topic to introduce in the Software Development for Mobile Devices course.
- Introduced Lego robots programming and pair programming in the COP 2510 Programming Concepts course in fall 2010.
- Attended workshops “An Audacious iPhone Workshop” and “Creating Mobile Phone Applications with App Inventor for Android”, ACM SIGCSE 2010.
- Attended the tutorials “Broadband Wireless Access – The Next Wireless Revolution” and “Wireless Mesh Networks – From Theory to Practice” during the IEEE International Symposium on Wireless Pervasive Computing (ISWPC) 2007, February 2007.
- Attended course on Wireless Sensor Networks given by Xbow Technologies to obtain practical and theoretical knowledge about this technology.
- Attended the tutorial “Zigbee and the new IEEE 802.15.4 Standard”, which is closely related to ad hoc and wireless sensor networks.
- Attended the tutorials “IP Control of Optical Networks and GMPLS” and “IP over Wavelength Division Multiplexing”.
- Attended the First ACM SIGCOMM Workshop “Computer Networking: Curriculum Designs and Educational Challenges”.
- Established a test bed for education and research in transport layer protocols and bandwidth estimation techniques utilizing the Web100 and Dummynet tools.
- Introduced simulation tools and techniques for computer networks in my undergraduate and graduate classes. Students use state-of-the-art tools to investigate solutions to real world and research problems.

Additionally, I utilize the visualization capabilities of these tools to teach important concepts in networking.

### **Dissertation Director of the Following PAST Ph.D. Students:**

#### **Idalides Vergara**

Graduation date: Fall 2014.  
Major Professor: Dr. Miguel A. Labrador  
Dissertation title: A Hybrid Privacy-Preserving Mechanism for Participatory Sensing Systems.  
Employer: Universidad del Turabo, Puerto Rico,

#### **Sean Barbeau**

Graduation date: Summer 2012.  
Major Professor: Dr. Rafael Perez and Dr. Miguel A. Labrador.  
Dissertation title: A Location-Aware Architecture Supporting Intelligent Real-Time Mobile Applications.  
Employer: Center for Urban Transportation Research (CUTR) at USF.

#### **Diego Mendez**

Graduation date: Summer 2012.  
Major Professor: Dr. Miguel A. Labrador.  
Dissertation title: A Framework for Participatory Sensing Systems.  
Employer: Universidad Javeriana, Bogotá, Colombia.

#### **Oscar Lara**

Graduation date: Summer 2012.  
Major Professor: Dr. Miguel A. Labrador  
Dissertation title: On the Automatic Recognition of Human Activities using Heterogeneous Wearable Sensors.  
Employer: IBM, San Jose, California.

#### **Albeiro Cortés**

Graduation Date: Spring 2012.  
Major Professor: Dr. Nestor Peña and Dr. Miguel A. Labrador.  
Dissertation title: Wireless Multimedia Sensor Networks.  
Employer: Universidad de Cundinamarca, Colombia

Albeiro is a Ph.D. student from the Universidad de los Andes in Bogota, Colombia. I am his Co-major Professor and the international committee member of his dissertation. Albeiro started in August 2006 and spent one year in USF working on his dissertation.

#### **Alfredo Perez**

Graduation date: Spring 2011.  
Major Professor: Dr. Miguel A. Labrador.  
Dissertation title: G-Sense: An Architecture for Global Sensing.  
Employer: Northern New Mexico College, NM. Tenure Track Position.

#### **Pedro Wightman**

Graduation date: Spring 2010.  
Major Professor: Dr. Miguel A. Labrador.  
Dissertation title: Topology Control in Wireless Sensor Networks.  
Employer: Universidad del Norte, Barranquilla, Colombia.

**Daladier Jabba**

Graduation date: Fall 2009.  
 Major Professor: Dr. Miguel A. Labrador.  
 Dissertation title: A Data Link Layer in Support of Autonomous Underwater Vehicles.  
 Employer: Universidad del Norte, Barranquilla, Colombia.

**Cesar Guerrero**

Graduation date: Spring 2009.  
 Major Professor: Dr. Miguel A. Labrador.  
 Dissertation title: End-to-End Available Bandwidth Estimation and Monitoring.  
 Employer: Universidad Autónoma de Bucaramanga, Bucaramanga, Colombia.

**Marco A. Alzate**

Graduation Date: Fall 2008.  
 Major Professor: Dr. Nestor Peña and Dr. Miguel A. Labrador.  
 Dissertation title: End-to-end Available Bandwidth Estimation in IEEE 802.11b Ad Hoc Networks.  
 Employer: Universidad Distrital, Bogotá, Colombia.

Marco was a Ph.D. student from the Universidad de los Andes in Bogota, Colombia. I was his Co-major Professor and the international committee member of his dissertation. Marco came to USF in spring 2007 for one semester to work on his dissertation. He defended his dissertation in December 2008.

**Rui Zhang**

Graduation date: Summer 2007.  
 Major Professor: Dr. Miguel A. Labrador.  
 Dissertation title: Sink Localization and Topology Control in Large Scale Heterogeneous Wireless Sensor Networks.

**Dissertation Director of the Following CURRENT Ph.D. Students:****Yueng de la Hoz**

Graduation date: Began fall 2012 and passed the qualifier exams in Fall 2013.  
 Dissertation area: Fall Prevention.

**Martha Lucia Torres Lozano**

Graduation date: Began spring 2015.  
 Dissertation area: Wireless Sensor Networks.

Martha is a Ph.D. student from the Universidad de los Andes in Bogota, Colombia. I am her Co-major Professor and the international committee member of her dissertation.

**Steven Diaz**

Graduation date: Began Fall 2015.  
 Dissertation area: N/A.

**Jorge Adorno**

Graduation date: Began Spring 2016.  
 Dissertation area: N/A.

## **Dissertation Committee Member of the Following CURRENT Ph.D. Students:**

### **Sulav Malla**

Graduation Date: N/A.  
Dissertation title: N/A.  
Major Professor: Dr. Kenneth Christensen.

### **Martin Llofri**

Graduation Date: N/A.  
Dissertation title: N/A.  
Major Professor: Dr. Alfredo Weitzenfeld.

### **Jay C. Dlutowski**

Graduation Date: N/A.  
Dissertation title: N/A.  
Major Professor: Dr. Wilfrido Moreno, EE Department.

### **Mehrnaz Abdollahian**

Graduation Date: N/A.  
Dissertation title: N/A.  
Major Professor: Dr. Tapas Das, IE Department.

## **Dissertation Committee Member of the Following PAST Ph.D. Students:**

### **Maria del Pilar Salamanca Azula**

Graduation Date: Spring 2015.  
Thesis title: Quality of Service Guarantees Based on Admission Control for Ad Hoc Networks.  
Major Professor: Dr. Nestor Peña, EE Department, Universidad de los Andes, Colombia.

### **Sadia Ahmed**

Graduation Date: Summer 2014.  
Thesis title: Underwater Acoustic Communication Channel Representation, Compensation of Inter-symbol Interference, Estimation and Compensation of Doppler Shift and Path Loss.  
Major Professor: Dr. Huseyin Arslan, EE Department.  
Employer: N/A.

### **Mehrgan Mostowfi**

Graduation Date: Summer 2013.  
Thesis title: Packet Coalescing and Server Substitution for Energy-Proportional Operation of Network Links and Data Servers.  
Major Professor: Dr. Ken Christensen, CSE Department.  
Employer: University of Northern Colorado.

### **Ozgur Yurur**

Graduation Date: Spring 2013.  
Dissertation title: Towards Energy efficient Middleware Design in Mobile Sensing  
Major Professor: Dr. Wilfrido Moreno, EE Department.



**Gabriel Arrobo**

Graduation Date: Fall 2012.  
Dissertation title: Body Area Networks.  
Major Professor: Dr. Richard Gitlin, EE Department.

**Nicolas Kourtellis**

Graduation Date: Summer 2012.  
Dissertation title: On the Design of Socially-Aware Infrastructures.  
Major Professor: Dr. Adriana Iamnitchi, CSE Department.

**Khairan Rajab**

Graduation Date: Spring 2011.  
Dissertation title: N/A.  
Major Professor: Dr. Les Piegler, CSE Department.

**Jamal Haque**

Graduation Date: Fall 2011.  
Dissertation title: Global Aero-Nautical Internet Communication (GAIC).  
Major Professor: Dr. Wilfrido Moreno, Electrical Engineering Department.

**Sabih Guzelgoz**

Graduation Date: Spring 2010.  
Dissertation title: Channel characterization for Smart Grids.  
Major Professor: Dr. Huseyin Arslan, Electrical Engineering Department.

**Miguel Jimeno**

Graduation Date: Spring 2010.  
Dissertation title: N/A.  
Major Professor: Dr. Ken Christensen, CSE Department.

**Luis Daniel Otero**

Graduation Date: Spring 2009.  
Dissertation title: N/A.  
Major Professor: Dr. Grisselle Centeno, Industrial and Systems Management Engineering Department.

**Sergio Melais**

Graduation Date: Fall 2008.  
Dissertation title: A Quasi Yagi Antenna Backed by a Metal Reflector  
Major Professor: Dr. Thomas Weller, EE Department.

**Richard Garcia**

Graduation Date: Spring 2008.  
Dissertation title: Designing an Autonomous Helicopter Testbed: From Platform Selection to Software Design.  
Major Professor: Dr. Kimon Valavanis, CSE Department.

**David Aguilar**

Graduation Date: Spring 2008.  
Dissertation title: A Framework for Evaluating the Computational Aspects of Mobile Phones.  
Major Professor: Dr. Rafael Perez, CSE Department.

**Hasari Celebi**

Graduation Date: Spring 2008.  
Dissertation title: Location Awareness in Cognitive Radios and Networks.

Major Professor: Dr. Huseyin Arslan, Electrical Engineering Department.

**Mauricio Castillo**  
 Graduation Date: Fall 2007.  
 Dissertation title: Cooperative Localization in Wireless Networked Systems.  
 Major Professors: Dr. Wilfrido Moreno and Dr. Kimon Valavanis Electrical Engineering Department and CSE Department.

**Tevfik Yucek**  
 Graduation Date: Summer 2007.  
 Dissertation title: Cognitive OFDM Systems: Adaptation and Sensing.  
 Major Professor: Dr. Huseyin Arslan, Electrical Engineering Department.

**Graciela Perera**  
 Graduation Date: Spring 2007.  
 Dissertation title: Design and Evaluation of New Search Paradigms for Peer-to-Peer File Sharing Networks.  
 Major Professor: Dr. Kenneth Christensen, CSE Department.

**Priyanga Chamara Gunaratne**  
 Graduation Date: Fall 2006.  
 Dissertation title: Design and Evaluation of New Power Management Methods to Reduce Direct and Induced Energy Use of the Internet.  
 Major Professor: Dr. Ken Christensen, CSE Department.

**Eduardo Zurek**  
 Graduation Date: Spring 2006.  
 Dissertation title: System Optimization for Micron and Sub-Micron Particle Identification Using Spectroscopy-Based Techniques.  
 Major Professor: Dr. Luis Garcia-Rubio and Dr. Wilfrido Moreno, Electrical Engineering Department.

**Rana Mikhail**  
 Graduation Date: Spring 2006.  
 Dissertation title: Unit Testing Database Applications Using SpecDB: A Database of Software Specifications.  
 Major Professor: Dr. Abe Kandel, CSE Department.

**Ismail Guvenc**  
 Graduation Date: Spring 2006.  
 Dissertation title: Towards Practical Design of Impulse Radio Ultrawideband Systems: Parameter Estimation and Adaptation, Interference Mitigation, and Performance Analysis.  
 Major Professor: Dr. Huseyin Arslan, Electrical Engineering Department.

**Jiang Liu**  
 Graduation Date: Fall 2005.  
 Dissertation title: Practical Behavioral Modeling Technique of Power Amplifiers Based on Advanced Loadpull Measurements.  
 Major Professor: Dr. Larry Dunleavy and Dr. Huseyin Arslan, Electrical Engineering Department.

**Hao Li**  
 Graduation Date: Fall 2004.  
 Dissertation title: Low Power Technology Mapping and Performance Driven Placement for Field Programmable Gate-Arrays.  
 Major Professor: Dr. Srinivas Katkoori, CSE Department.

**Kenji Yoshigoe**  
Graduation Date: Summer 2004.  
Dissertation title: Performance Evaluation of the Combined Input and Crossbar Queued (CICQ) Switches.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Gwyn Chatranon**  
Graduation Date: Summer 2004.  
Dissertation title: Providing Fairness Through Detection and Preferential Dropping of High Bandwidth Unresponsive Flows.  
Major Professor: Dr. Sujata Banerjee and Dr. David Tipper.

**Zurnitza Genova**  
Graduation Date: Summer 2003.  
Dissertation title: Performance Evaluation of URL Routing for Content Distribution Networks.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

### **Thesis Director of the Following CURRENT Master of Science Students:**

**Jennyfer Sanchez**  
Graduation Date: Fall 2017.  
Thesis title: HeartMapp.

### **Thesis Director of the Following PAST Master of Science Students:**

**Andres Perez**  
Graduation Date: Summer 2016  
Thesis title: A Smartphone-based System for Clinical Gait Assessment.  
Employer: IBM Corporation, San Jose, CA.

**Juan Marron**  
Graduation Date: Spring 2014.  
Thesis title: Multi Sensor System for Pedestrian Tracking and Activity Recognition in Indoor Environments.  
Employer: IBM Corporation, San Jose, CA.

**Khoa Tran**  
Graduation Date: Spring 2013.  
Thesis title: Automatic Identification of Points of Interest in Global Navigation Satellite Data: A Spatial Temporal Approach.

**Luis Jaimes**  
Graduation date: Summer 2012.  
Thesis title: Incentives for Participatory Sensing.

**Isaac Taylor**  
Graduation Date: Spring 2011.  
Thesis title: Reducing the Energy Consumption in Mobile Devices by Removing Noisy GPS Fixes with Modified Kalman Filters.  
Employer: AT&T.

**Laura Voicu**

Graduation Date: Spring 2006.  
Thesis title: Modeling the Throughput Performance of the SF-SACK Protocol.  
Employer: N/A.

**George Lukachan**

Graduation Date: Fall 2005.  
Thesis title: Scalable Energy-efficient Location-Aided Routing (SELAR) Protocol for Wireless Sensor Networks.  
Employer: Wellcare Health Plans, Tampa.

**Srinivas Bandi**

Graduation Date: Fall 2005.  
Thesis area: A Measurement-based Admission Control Algorithm for Wireless Local Area Networks.  
Employer: VMware, Palo Alto, CA.

**Steven Bassi**

Graduation Date: Summer 2005.  
Thesis area: A Web100-Dummynet Testbed for Education and Research in Transport Layer Protocols.  
Employer: Boson Software, Tampa.

**Bay Pavlick**

Graduation Date: Summer 2005.  
Thesis area: A Fuzzy Logic Based Controller to Provide End-to-End Congestion Control for Streaming Media Applications.  
Employer: IBM, Tampa.

**Yeggy Easwaran**

Graduation Date: Spring 2005.  
Thesis area: Evaluation of Available Bandwidth Estimation Tools (ABETs) and their Application in Improving to TCP Performance.  
Employer: TechHealth, Tampa.

**Subodh Kerkar**

Graduation Date: Summer 2004.  
Thesis title: Performance Analysis of TCP/IP over High Bandwidth Delay Product Networks.  
Employer: Verizon, Tampa.

**Sivakumar Bakthavachalu**

Graduation Date: Spring 2004.  
Thesis title: SF-SACK: A Smooth Friendly TCP Protocol for Streaming Multimedia Applications.  
Employer: LSI Logic Corporation, Colorado Springs.

**Venkatesh Ramarathinam**

Graduation Date: Spring 2004.  
Thesis title: A Control Layer Algorithm for Ad Hoc Networks in Support of Urban Search and Rescue (USAR) Applications.  
Employer: Appian Corporation, Vienna, Virginia.

**Xu Jianxuan**

Graduation Date: Spring 2004.

Thesis title: Performance of TCP over Optical Channels and Heterogeneous Networks.  
Employer: N/A.

**Praveen Ikkurthy**

Graduation Date: Summer 2003.  
Thesis title: Software Testing Testbed for MPEG-4 Video Traffic over IEEE 802.11b Wireless LANs.  
Employer: EPIC Systems, Madison, Wisconsin.

**Sarma Vangala**

Graduation Date: Spring 2003.  
Thesis title: Performance of TCP over Wireless Networks.  
Employer: Qualcomm, California.

**Anand Krishna Parameswaran**

Co-major Professor with Dr. Wilfrido Moreno, Electrical Engineering Department.  
Graduation Date: Fall 2002.  
Thesis title: Improving Bandwidth Efficiency in Survivable Optical Networks.  
Employer: Returned to his home country where he found a job.

**Master of Science Committee Member of the Following CURRENT Students:**

None.

**Master of Science Committee Member of the following PAST Students:**

**Nikolai Samteladze**

Graduation Date: Spring 2013.  
Thesis area: Delta Encoding Based Methods to Reduce the Size of Smartphone Application Updates.

**Justin Bailey**

Graduation Date: Fall 2011.  
Thesis area: Distributed Systems.

**Mehrgan Mostowfi**

Graduation Date: Summer 2010.  
Thesis title: Improving the Energy Efficiency of IEEE 802.3az EEE and Periodically Paused Switched Ethernet.  
Employer: N/A.

**Tiffany Burrel**

Graduation Date: Spring 2010.  
Thesis area: Databases.  
Major Professor: Dr. Yicheng Tu, CSE Department.

**Dmitry Kalyadin**

Graduation Date: Fall 2006.

Thesis area: Robotics.  
Major Professor: Dr. Robin Murphy, CSE Department.

**Daniel Ernest**  
Graduation Date: Fall 2006.  
Thesis area: Robotics.  
Major Professor: Dr. Kimon Valavanis, CSE Department.

**Karim Souccar**  
Graduation Date: Summer 2006.  
Thesis area: Wireless Sensor Networks.  
Major Professor: Dr. Wilfrido Moreno, Electrical Engineering Department.

**Kiran Rupanagudi**  
Graduation Date: Spring 2006.  
Thesis area: Wireless Sensor Networks.  
Major Professor: Dr. Wilfrido Moreno, Electrical Engineering Department.

**Richard Garcia**  
Graduation Date: Spring 2006.  
Thesis area: A Modular Onboard Processing System for Small Unmanned Vehicles.  
Major Professor: Dr. Kimon Valavanis, CSE Department.

**Daniel Quintela**  
Graduation Date: Spring 2005.  
Thesis area: Pervasive Sensing and Computing for Natural Disaster Mitigation.  
Major Professor: Dr. Wilfrido Moreno, Electrical Engineering Department.

**Oscar Gonzalez**  
Graduation Date: Spring 2005.  
Thesis area: Reconfigurable Wireless Sensor Platform for Training and Research in Networked Embedded Systems.  
Major Professor: Dr. Wilfrido Moreno, Electrical Engineering Department.

**Sasha Dos Santos**  
Graduation Date: Spring 2005.  
Thesis area: A Geographic Information System for Dynamic Ridematching.  
Major Professor: Dr. Rafael Perez, CSE Department.

**Himanshu Gilani**  
Graduation Date: Spring 2005.  
Thesis area: Automatically Determining Route and Mode of Transport Using a GPS-enabled Phone.  
Major Professor: Dr. Rafael Perez, CSE Department.

**Sai B. Sakamuri**  
Graduation Date: Spring 2005.  
Thesis area: Design and Evaluation of a New Authentication Mechanism for Validating the Sender of an Email.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Preetha Prabhakaran**  
Graduation Date: Spring 2005.  
Thesis area: Energy Performance and Scalability of Mobile Ad Hoc Networks in Realistic Mobility and Fading Environments.

Major Professor: Dr. Ravi Sankar, Electrical Engineering Department.

**Kripakarprasad Krishnamurthy**

Graduation Date: Fall 2004.

Thesis title: Generation of Minimized Set of Scenarios for Graphical User Interface Testing.

Major Professor: Dr. Dewey Rundus, CSE Department.

**Saar Carmel**

Graduation Date: Fall 2004.

Thesis title: Creating Minimal Test Sets with Maximal Coverage.

Major Professor: Dr. Abraham Kandel, CSE Department.

**Ning Yang**

Graduation Date: Summer 2004.

Thesis title: Congestion-Aware Cross-Layer Design for Wireless Ad Hoc Networks.

Major Professor: Dr. Ravi Sankar, Electrical Engineering Department.

**Zane Reynolds**

Graduation Date: Spring 2004.

Thesis title: Representative Selection Strategies for Dissimilarity Representations.

Major Professor: Dr. Abraham Kandel, CSE Department.

**Deepam Agarwal**

Graduation Date: Spring 2004.

Thesis title: A Comparative Study of Artificial Neural Networks and Info Fuzzy Logic Networks on their use in Software Engineering.

Major Professor: Dr. Abraham Kandel, CSE Department.

**Callen Mascarehas**

Graduation Date: Spring 2004.

Thesis title: Developing and Using and Ontology for a Software Testing Application.

Major Professor: Dr. Abraham Kandel, CSE Department.

**Rakesh Nathwani**

Graduation Date: Fall 2003.

Thesis title: Comparison of Different Routing Protocols over Ad Hoc Networks.

Major Professor: Dr. Ravi Sankar, Electrical Engineering Department.

**John Shahbazian**

Graduation Date: Fall 2003.

Thesis title: Characterization and Generation of Streaming Video Traces.

Major Professor: Dr. Kenneth Christensen, CSE Department.

**Vijay Chandramohan**

Graduation Date: Fall 2003.

Thesis title: Design and Evaluation of a New Spatial Reuse Firewire Protocol.

Major Professor: Dr. Kenneth Christensen, CSE Department.

**Rudolph Mician**

Graduation Date: Spring 2003.

Thesis title: Lessons in Network Security.

Major Professor: Dr. Abraham Kandel, CSE Department.

**Olga Aizenchtadt**

Graduation Date: Fall 2002.

Thesis title: Mapping Semi-supervised Fuzzy C-Means Clustering Algorithm onto a Distributed System.  
Major Professor: Dr. Nagarajan Ranganathan, CSE Department.

**Joe Rogers**

Graduation Date: Summer 2002.  
Thesis title: Network Traffic Characterization Through Bottleneck Queuing Simulation of Flow and Packet Traces.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Thesis Director of the Following CURRENT Undergraduate Honors Students:**

None.

**Thesis Director of the Following PAST Undergraduate Honors Students:**

**Joshua Philpott**

Graduation Date: Spring 2015.  
Thesis title: Development of an Android Application to Promote Community and Student Engagement in Green Infrastructure Projects.  
Major Professor: Dr. Miguel A. Labrador.

**Brandon Pav**

Graduation Date: Spring 2005.  
Thesis Project: Design and Development of a Trouble Ticket Tracking Application.  
Thesis area: Software Engineering.

**Dmitry Kalyadin**

Graduation Date: Fall 2004.  
Thesis title: Performance of TCP over Wireless Networks.  
Employer: Pursuing Ph.D. degree in USF.

**Thesis Committee Member of the Following PAST Undergraduate Students:**

**Adam McFarlan**

Graduation Date: Fall 2002.  
Thesis title: Characterization of TCP Anomalies.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Christine Bexley**

Graduation Date: Fall 2002.  
Thesis title: An Evaluation and Demonstrations of COTS Components to Implement Wearable Video Cameras on Spaceport Technicians.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Daniel Svanstedt**

Graduation Date: Summer 2002.  
Thesis title: New Methods for Evaluating One-Way Delay in Computer Networks.  
Major Professor: Dr. Kenneth Christensen, CSE Department.



**Liam Irish**

Graduation Date: Spring 2002.  
Thesis title: N/A.  
Major Professor: Dr. Kenneth Christensen, CSE Department.

**Faculty Mentor of the Following Research Experiences for Undergraduates Students:**

- Jennyfer Sanchez, summer 2016.
- Mark Di Sano, spring 2014, summer 2014, fall 2014, spring 2015, summer 2015.
- Edwin Peguero, spring 2014, summer 2014, fall 2014, spring 2015, summer 2015, fall 2015.
- Andrew Francis, summer 2015, fall 2015.
- Chris Eggert, spring 2014, fall 2013, spring 2013, fall 2012, spring 2013, fall 2013, spring 2014.
- Jose Cadena, Vinnie Maida, Marcus McGee, Leon Augustine, Alexander French, fall 2011 and spring 2012.
- Marcus McGee, Ken Mendoza, Leon Augustine, spring 2011.
- Ken Mendoza, Leon Augustine, Richard Meana, Theodore Larkins, fall 2011.
- Juan Jose Marrón, exchange student from the Universidad de Oviedo, Spain, independent study part of his Bachelor's thesis work, spring 2010.
- Christine Bringes, fall 2009 and spring 2010.
- Richard Meana, fall 2009, spring 2010.
- Theodore Larkins, fall 2009, spring 2010.
- Andrey Shipalov, summer and fall 2008.
- Clayton Gandy, summer and fall 2008.
- Josh Kuhn, spring 2008 and summer 2008.
- Narin Persad, fall 2006.
- Narin Persad, summer 2006.
- Shannon Osmon, Kevin Neon, spring 2006.
- Shannon Osmon, Diana Arteaga, fall 2005.
- Hung Tran, spring 2005.
- Dmitry Kalyadin, summer and fall 2004.
- Todd Winchell, spring and fall 2004.
- Pedro Villavicencio, spring 2004.
- Ahmad Mageed, fall 2003, spring 2004.
- Sean Barbeau, fall 2003.
- Edgar Banguero, fall 2003.
- Paul Tittle, summer and fall 2002.

### III. RESEARCH AND CREATIVE ACTIVITIES

#### Main Research Areas

- Ubiquitous Sensing and Location-Based Services.
- Wireless Ad Hoc and Sensor Networks.
- Design and evaluation of computer networks and communication protocols.

#### Secondary and Past Research Areas:

- Available Bandwidth Estimation Techniques.
- Active Queue Management Algorithms and Packet Dropping Policies for IP and ATM networks.

#### Publications in chronological order

##### Books:

1. Miguel A. Labrador and Oscar D. Lara, “Human Activity Recognition using Wearable Sensors and Smartphones”, National Defense Industry Press, January 2015. Translated version to the Chinese language of the same book from Taylor and Francis, Chapman & Hall/CRC Computer and Information Science Series.
2. Miguel A. Labrador and Oscar D. Lara, “Human Activity Recognition using Wearable Sensors and Smartphones”, Taylor and Francis, Chapman & Hall/CRC Computer and Information Science Series, 2013.
3. Miguel A. Labrador, Alfredo Perez, and Pedro Wightman, “Location-Based Information Systems – Developing Real-Time Tracking Applications”, Taylor and Francis, Chapman & Hall/CRC Computer and Information Science Series, 2010.
4. Miguel A. Labrador and Pedro Wightman, “Topology Control in Wireless Sensor Networks – with a Simulation Tool for Teaching and Research”, Springer 2009. **Since its online publication in 2009 and as of June 2016, the book has had 10,000 chapter downloads.**

##### Book Chapter:

1. Marco A. Alzate, Néstor M. Peña, and Miguel A. Labrador, “Capacity, Bandwidth, and Available Bandwidth in Wireless Ad Hoc Networks: Definitions and Estimation,” Book chapter in “Mobile Ad-Hoc Networks: Protocol Design,” edited by Xin Wang, ISBN 978-953-307-402-3, InTech, January 2011.

##### Publications in refereed journals

1. Ponrathi Athilingam, Miguel A. Labrador, Elizabeth Frances, Laureen Mack, Alyanna Bianca San Juan and Amanda F. Elliot, “Features and Usability Assessment of a Patient-centered Mobile Application (HeartMapp) for Self-management of Heart Failure,” Elsevier Applied Nursing Research 32, pp. 156-163, 2016.
2. Idalides Vergara, Luis Jaimes and Miguel A. Labrador, “Privacy-Preserving Mechanisms for Crowdsensing: Survey and Research Challenges,” *Internet of Things Journal*, Special Issue on Privacy Issues in the Internet of Things, (accepted), 2016.

3. Idalides Vergara, Diego Mendez, Luis Jaimes and Miguel A. Labrador, “A-PIE: An Algorithm for Preserving Privacy, Quality of Information, and Energy Consumption in Participatory Sensing Systems,” *Pervasive and Mobile Computing*, 2016.
4. Luis Valcourt, Yueng de la Hoz, and Miguel A. Labrador, “Smartphone-based Human Fall Detection System,” *IEEE Latin America Transaction, Regular Edition* Vol. 14, Issue 2, February 2016.
5. Juan Marron, Miguel A. Labrador, Adrian Menendez, Daniel Fernandez and Martin Gonzalez, “Multi Sensor System for Pedestrian Tracking and Activity Recognition in Indoor Environments,” *International Journal of Ad Hoc and Ubiquitous Computing*, Vol. 23, No. 1/2, 2016.
6. Yueng De La Hoz and Miguel A. Labrador, “Survey on Fall Detection and Fall Prevention Using Wearable and External Sensors,” *Sensors*, 14(10), 19806-19842; doi:10.3390/s141019806, October 2014.
7. Mayra Zurbaran, Liliana Gonzalez, Pedro Wightman, Miguel A. Labrador, Daladier Jabba, and Miguel Jimeno, “A Survey on Privacy in Location-Based Services”, *Ingenieria y Desarrollo*, ISSN: 0122-3461, Vol. 32, N 2, July-December, 2014.
8. Francisco Ortin, Miguel A. Labrador, Jose M. Redondo, “A hybrid class- and prototype-based object model to support language-neutral structural intercession”, *Information and Software Technology*, 56 (2), pp. 199–219, 2014.
9. Ozgur Yurur, Miguel A. Labrador, and Wilfrido Moreno, “Adaptive and Energy Efficient Context Representation Framework in Mobile Sensing”, *IEEE Transactions on Mobile Computing*, April 2013.
10. Diego Mendez and Miguel A. Labrador, “On Sensor Data Verification for Participatory Sensing Systems,” *Journal of Networks*, January, 2013.
11. Diego Mendez, Miguel A. Labrador and K. Ramachandran, “Data Interpolation for Participatory Sensing Systems,” *Pervasive and Mobile Computing*, Vol. 9, pp. 132-148, 2013.
12. Oscar Lara and Miguel A. Labrador, “A Survey on Human Activity Recognition using Wearable Sensors”, *IEEE Communications Surveys and Tutorials*, December 2012.
13. Khoa Tran, Sean J. Barbeau, Edward Hillsman and Miguel A. Labrador, “Go\_Sync – A Framework to Synchronize Crowd-Sourced Mapping Contributors from Online Communities and Transit Agency Bus Stop Inventories,” *International Journal of Intelligent Transportation Systems Research*, Vo. 11, Issue 2 (2013), pp. 54-64.
14. Pedro M. Wightman and Miguel A. Labrador, “A Family of Simple Distributed Minimum Connected Dominating Set-Based Topology Construction Algorithms,” *Journal of Networks and Computer Applications, Elsevier*, Vol. 34, pp. 1997-2010, 2011.
15. Oscar D. Lara, Alfredo J. Perez, Miguel A. Labrador and Jose D. Posada, “Centinela: A Human Activity Recognition System Based on Acceleration and Vital Sign Data,” *Pervasive and Mobile Computing*, Elsevier, Vol. 8, No. 5, pp.717-729, 2012.
16. Miguel A. Labrador and Nestor Peña, “Guest Editorial,” *IEEE Latin America Transactions*, Special Issue IEEE Latincom 2011.
17. Pedro M. Wightman, Aldo Fabregas, and Miguel A. Labrador, “An Optimal Solution to the MCDS Problem for Topology Construction in Wireless Sensor Networks,” *IEEE Latin America Transactions*, Special Issue IEEE Latincom 2011.
18. Sean J. Barbeau, Miguel A. Labrador, Nevine L. Georggi, Philip L. Winters and Rafael A. Perez, “LAISYC – A Location-Aware Framework to Support Intelligent Real-time Applications for GPS-Enabled Mobile Phones”, *IEEE Pervasive Computing*, Vol. 10, No. 3, pp. 58-67, July-Sept. 2011.
19. Pedro M. Wightman and Miguel A. Labrador, “Reducing the Communication Range or Turning Nodes Off? An Initial Evaluation of Topology Control Strategies for Wireless Sensor Networks”, *Revista Ingeniería y Desarrollo*, Universidad del Norte, Julio-Diciembre, No. 28, pp. 66-88, 2010.

20. Pedro M. Wightman and Miguel A. Labrador, "Topology Maintenance: Extending the Lifetime of Wireless Sensor Networks", *IEEE Latin America Transactions*, Vol. 8, No. 4, pp. 469-475, August, 2010.
21. Albeiro Cortes, Nestor Peña and Miguel A. Labrador, "An Adaptive Multi-channel Approach for Real-Time Multimedia Wireless Sensor Networks", *IEEE Latin America Transactions*, Vol. 8, No. 4, pp. 370-376 August, 2010.
22. Alfredo Perez, Miguel A. Labrador, and Sean Barbeau, "G-Sense: A Scalable Architecture for Global Sensing and Monitoring", *IEEE Network Magazine*, Vol. 24, No. 4, pp. 57-64, July 2010.
23. Cesar Guerrero and Miguel A. Labrador, "Traceband: A Fast, Low Overhead and Accurate Tool for Available Bandwidth Estimation and Monitoring", *Computer Networks*, 54, (2010), pp. 977-990.
24. Cesar D. Guerrero and Miguel A. Labrador, "On the Applicability of Available Bandwidth Estimation Techniques and Tools", *Computer Communications*, Vol. 33, No. 1, pp. 11-22, January 2010.
25. Sean J. Barbeau, Philip L. Winters, Nevine L. Georggi, Miguel A. Labrador, and Rafael A. Perez, "The Travel Assistant Device: Utilizing GPS-Enable Mobile Phones to Aid Transit Riders with Special Needs", *IET Intelligent Transport Systems Journal*, Vol. 4, Issue 1, pp. 12-23, 2010.
26. Paola A. Gonzalez, Jeremy S. Weinstein, Sean J. Barbeau, Miguel A. Labrador, Philip L. Winters, Nevine L. Georggi, and Rafael A. Perez, "Automating Mode Detection for Travel Behavior Analysis by Using GPS-enabled Mobile Phones and Neural Networks", *IET Intelligent Transport Systems Journal*, Vol. 4, Issue 1, pp. 37-49, 2010.
27. Miguel A. Labrador, Katina Michael and Axel Kupper, "Advanced Location-Based Services", *Computer Communications Journal*, Elsevier, Guest Editorial, Vol. 31, No. 6, pp. 1053-1054, April 2008.
28. Sean Barbeau, Miguel A. Labrador, Philip Winters, Rafael Perez and Nevine Labib Georggi, "Location API 2.0 for J2ME – A New Standard in Location for Java-enabled Mobile Phones", *Computer Communications Journal*, Elsevier, Vol. 31, No. 6, pp. 1091-1103, April 2008.
29. Mauricio Castillo-Effen, Miguel A. Labrador, Wilfrido A. Moreno, and Kimon P. Valavanis, "Probabilistic Estimation Algorithm for Cooperative Localization in Wireless Sensor Networks", *Ad Hoc and Sensor Wireless Networks Journal*, Vol. 5, No. 1-2, pp. 27-46, 2008.
30. Jose Aguilar and Miguel A. Labrador, "Un Algoritmo de Enrutamiento Distribuido para Redes de Comunicación basado en Sistemas de Hormigas" ("A General Combinatorial Ant System-based Distributed Routing Algorithm for Communication Networks"), *IEEE Latin America Transactions*, Vol. 5, No. 8, December 2007.
31. Rui Zhang, Hang Zhao, and Miguel A. Labrador, "A Scalable and Energy Efficient Sink Location Service for Large-scale Wireless Sensor Networks", *Ad Hoc and Sensor Wireless Networks Journal*, Vol. 4, No. 4, pp. 289-320, 2007.
32. David P. Aguilar, Sean J. Barbeau, Miguel A. Labrador, Alfredo Perez, Rafael A. Perez, and Philip L. Winters, "Quantifying the Position Accuracy of Real-time Multi-Modal Transportation Behavior Data Collected using GPS-Enabled Mobile Phones", *Transportation Research Record: Journal of the Transportation Research Board of the National Academies*, No. 1992, pp. 54-60, October 2007.
33. Sarma Vangala and Miguel A. Labrador, "Shielding TCP from Wireless Losses", Wiley's *Wireless Communications and Mobile Computing Journal*, Vol. 7, Issue 6, pp. 679-688, August 2007.
34. Laura M. Voicu, Steven Bassi and Miguel A. Labrador, "Analytical and Experimental Evaluation of TCP with an Additive Increase Smooth Decrease (AISD) Strategy", *Computer Communications Journal*, Elsevier, Vol. 30, No. 2, pp. 479-495, January 2007.
35. Sean Barbeau, Miguel A. Labrador, Philip Winters, Rafael Perez and Nevine Labib Georggi, "A General Architecture in Support of Interactive, Multimedia, Location-based Mobile Applications", *IEEE Communications Magazine*, Vol. 44, No. 11, pp. 156-163, November 2006.

36. José Aguilar and Miguel A. Labrador, “Algoritmo de Enrutamiento Distribuido para Redes Inalámbricas”, *Gerencia Tecnológica Informática: (Informatics Technology Management)*, Vol. 4, No. 8, pp. 21-28, ITI, Colombia, June 2005, (<http://www.iticol.org/>).
37. Dmitry Kalyadin and Miguel A. Labrador, “Performance Evaluation of TCP over Wireless Networks”, *USF Journal of Undergraduate Research*, Vol. 1, No.1, pp. 7-15, 2005.
38. Sivakumar Bakthavachalu and Miguel A. Labrador, “TFRC Friendliness and the Case of ECN”, *International Journal of Communication Systems*, Vol. 17, No. 8, pp. 763-778, October 2004.
39. Ala Al-Fuqaha, Ghulam Chaudhy, Mohsen Guizani and Miguel A. Labrador, “Routing Framework for All-Optical DWDM Metro and Long-Haul Transport Networks with Sparse Wavelength Conversion Capabilities”, *IEEE Journal of Selected Areas in Communications (JSAC)*, Vol. 22, No. 8, pp. 1443-1459, October 2004.
40. Gwyn Chatranon, Miguel A. Labrador, and Sujata Banerjee, “A Survey on TCP-friendly Router-based AQM Schemes”, *Computer Communications Journal*, Vol. 27, Issue 15, pp. 1424-1440, August 2004.
41. Xu Jianxuan, Miguel A. Labrador and Mohsen Guizani, “Performance Evaluation of TCP over Optical Channels and Heterogeneous Networks”, *Cluster Computing: The Journal of Networks, Software Tools and Applications*, Vol. 7, Issue 3, pp. 225-238, July 2004.
42. Julio Araúz, Prashant Krishnamurthy, and Miguel A. Labrador, “Discrete Raleigh Fading Channel Modeling”, *Wireless Communications and Mobile Computing Journal*, 4:413-425, June 2004.
43. 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.
44. Miguel A. Labrador and Sujata Banerjee. “Application Performance and Relative Service Differentiation for Best Effort Traffic” *Computer Communications Journal*, Volume 26, Issue 10, June 2003, pp. 1031-1046.
45. Miguel A. Labrador and Sujata Banerjee, “Performance Analysis of Generalized Selective Packet Discarding Schemes”, *Telecommunications Systems Journal*, Vol. 21, No. 1, pp. 87-101, September 2002.
46. Miguel A. Labrador and Sujata Banerjee, “Packet Dropping Policies for ATM and IP Networks”, *IEEE Communications Surveys Journal*, Third Quarter 1999. Also, invited extended abstract in *IEICE Transactions on Communications*, Vol. E83-B, No. 2, February 2000.

#### **Publications in refereed conferences**

1. Shanice Clarke, Luis Jaimes and Miguel A. Labrador, “mStress: A Mobile Recommender System for Just-in-Time Interventions for Stress”, Workshop on Ambient Assisted Living and eHealth, IEEE CCNC, 2017.
2. Brittany Cook, Edwin Peguero and Miguel A. Labrador, “Assessing Jitter in Sensor Time Series from Android Mobile Devices,” *IEEE Smartcomp*, May, 2016.
3. Andres Perez and Miguel A. Labrador, “A Smartphone-based System for Clinical Gait Analysis,” *IEEE Smartcomp*, May, 2016.
4. Jorge Adorno, Yueng de la Hoz and Miguel A. Labrador, “Smartphone-based Floor Detection in Unstructured and Structured Environments,” Workshop on Pervasive Technologies and care systems for sustainable Aging-in-place (PASTA), IEEE Percom, 2016.
5. Mark Di Sano, Andres Perez, Miguel A. Labrador, Ponrathi Athilingam and Federico Giovanetti, “HeartMapp: A Mobile Application to Improve CHF Outcomes and Reduce Hospital Readmissions,” *Wireless Health*, October, 2015.

6. Ravichandran Subramanian, Sudeep Sarkar, Miguel A. Labrador, Kristina Contino and Christopher Eggert, "Orientation Invariant Gait Matching Algorithm based on the Kabsch Alignment," *IEEE International Conference on Identity, Security and Behaviour Analysis*, **Best Student Paper Award**, March 2015.
7. Luis Valcourt, Yueng De La Hoz and Miguel A. Labrador, "Human Fall Detection with Smartphones," *Proceedings of IEEE Latincom*, 2014.
8. Alejandra Vidal, Juan Marron and Miguel A. Labrador, "Real-time Pedestrian Tracking in Indoor Environments," **Best Paper Award**, *Proceedings of IEEE Latincom*, 2014.
9. Steven Diaz, Yueng De La Hoz and Miguel A. Labrador, "Dynamic Background Subtraction for Fall Detection System using a 2D Camera," *Proceedings of IEEE Latincom*, 2014.
10. Idalides Vergara, Diego Mendez and Miguel A. Labrador, "Privacy, Quality of Information, and Energy Consumption in Participatory Sensing Systems," *IEEE Percom*, March 2014 (Full paper acceptance rate: 10%).
11. Khoa Tran, Sean Barbeau, and Miguel A. Labrador, "Automatic Identification of Points of Interest in Global Navigation Satellite System Data: A Spatial Temporal Approach", ACM SigSpatial, Workshop on GeoStreaming (IWGS), November 2013.
12. P. Wightman, M. Zulbaran, M. Rodriguez, and M. A. Labrador, "MaPIR: Mapping-Based Private Information Retrieval for Location Privacy in LBS", *8th IEEE Workshop on Network Security, IEEE Local Computer Networks Conference (LCN)*, 2013.
13. Idalides Vergara, Diego Mendez and Miguel A. Labrador, "On the Interactions between Privacy-Preserving, Incentive, and Inference Mechanisms in Participatory Sensing Systems," (short paper), *7th International Conference on Network and System Security (NSS)*, June 2013.
14. Christopher Eggert, Oscar Lara, and Miguel A. Labrador, "Recognizing Mental Stress in Chess Players using Vital Sign Data," *IEEE-SE*, 2013.
15. Diego Mendez and Miguel A. Labrador, "Removing Spatial Outliers in PS Applications," in *Proceedings of International Conference on Selected Topics in Mobile and Wireless Networking (iCOST)*, 2012.
16. Diego Mendez and Miguel A. Labrador, "Density Maps: Determining Where to Sample in Participatory Sensing Systems," in *Proceedings of 3rd International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC)*, 2012.
17. Luis G. Jaimes, Idalides J. Vergara, and Miguel A. Labrador, "A Location-Based Incentive Mechanism for Participatory Sensing Systems with Budget Constraints," in *Proceedings of IEEE PerCom*, 2012.
18. Pedro M. Wightman, Miguel A. Jimeno, Daladier Jabba, and Miguel A. Labrador, "Matlock: A Location Obfuscation Technique for Accuracy-Restricted Applications," in *Proceedings of IEEE WCNC*, 2012.
19. Oscar Lara and Miguel A. Labrador, "A Mobile Human Activity Recognition System," in *Proceedings of CCNC (Demos)*, 2012.
20. Oscar Lara and Miguel A. Labrador, "A Mobile Platform for Real-time Human Activity Recognition," in *Proceedings of CCNC*, 2012.
21. Idalides Vergara-Laurens and Miguel A. Labrador, "Preserving Privacy while Reducing Power Consumption and Information Loss in LBS and Participatory Sensing Applications", *Proceedings of IEEE Globecom*, 2011.
22. Albeiro Cortes, Nestor Peña, and Miguel A. Labrador, "Performance Modeling of the LEMR-multichannel Protocol", *Proceedings of IEEE Latincom*, 2011.

23. Pedro Wightman, Winston Coronell, Daladier Jabba, Miguel Jimeno, and Miguel A. Labrador, "Evaluation of Location Obfuscation Techniques for Privacy in Location Based Information Systems", *Proceedings of Latincom*, 2011.
24. Marcy Gordon, Sean Barbeau, and Miguel A. Labrador, "Location Data Signing – Protecting the Integrity and Authenticity of Positioning System Data," *Proceedings of 18th World Congress on Intelligent Transport Systems*, 2011.
25. Khoa Tran, Edward Hillsman, Sean Barbeau, and Miguel A. Labrador, "Go\_Sync – A Framework to Synchronize Crowd-sourced Mapping Contributions from Online Communities and Transit Agency Bus Stop Inventories," *Proceedings of 18th World Congress on Intelligent Transport Systems*, 2011.
26. Pedro Wightman, Miguel Jimeno, Daladier Jabba, Miguel A. Labrador, Mayra Zurbarán, César Córdoba, and Armando Guerrero, "Empirical Approach to Network Sizing for Connectivity in Wireless Sensor Networks with Realistic Radio Propagation Models," *Proceedings of 10<sup>th</sup> International Conference on Adhoc Networks and Wireless (Adhoc-Now)*, 2011.
27. Diego Mendez, Alfredo Perez, Miguel A. Labrador, and Juan J. Marron, "P-Sense: A Participatory Sensing System for Air Pollution Monitoring and Control," *Proceedings of IEEE PerCom Work-In-Progress Workshop*, 2011.
28. Alfredo J. Perez and Miguel A. Labrador, "A Multiobjective Approach for Wireless Sensor Networks Relay Placement," *Proceedings of IEEE WCNC*, 2011.
29. Pedro Wightman and Miguel A. Labrador, "A3Cov: A New Topology Construction Protocol for Connected Area Coverage in WSN," *Proceedings of IEEE WCNC*, 2011.
30. Isaac M. Taylor and Miguel A. Labrador, "Improving the Energy Consumption in Mobile Phones by Filtering Noisy GPS Fixes with Modified Kalman Filters," *Proceedings of IEEE WCNC*, 2011.
31. Pedro Wightman and Miguel A. Labrador, "An Optimal Solution to the MCDS Problem for Topology Construction in Wireless Sensor Networks," *Proceedings of IEEE Latincom*, 2010.
32. Oscar Lara and Miguel A. Labrador, "A Multiobjective Ant Colony-based Optimization Algorithm for the Bin Packing Problem with Load Balancing," *Proceedings of IEEE World Congress on Computational Intelligence*, July 2010.
33. Beth Taylor and Miguel A. Labrador, "Computer Science TransfEr Programs (CSTEP): Transferring Community College Students to Four Year Universities", Poster in *8<sup>th</sup> Annual National Institute for the Study of Transfer Students Conference*, January 27-29, 2010.
34. Daladier Jabba Molinares and Miguel A. Labrador, "An Adaptive Logical Link Layer Protocol for Underwater Acoustic Communication Channels", *Proceedings of IEEE Oceans*, 2009.
35. Pedro Wightman and Miguel A. Labrador, "Topology Maintenance: Extending the Lifetime of Wireless Sensor Networks," *Proceedings of IEEE Latincom*, 2009.
36. Albeiro Cortes, Nestor Peña, and Miguel A. Labrador, "An Adaptive Multi-channel Approach for Real-Time Multimedia Wireless Sensor Networks", *Proceedings of IEEE Latincom*, 2009.
37. Daladier Jabba Molinares and Miguel A. Labrador, "A Data Link Layer in Support of Swarming of Autonomous Underwater Vehicles", *Proceedings of IEEE Oceans*, 2009.
38. Michelle Kobus, Cesar Guerrero, Miguel A. Labrador, and Rafael Perez, "CSTEP: Transferring Computer Science Community College Students to Four-year Universities", *Proceedings of ASEE*, 2009.
39. Sean J. Barbeau, Miguel A. Labrador, Nevine Labib Georggi, Philip L. Winters, and Rafael Perez, "The Travel Assistant Device (TAD): Increasing Ridership of Fixed-Route Transit By Utilizing GPS-Enabled Cell Phones", *Proceedings of APTA Conference on Bus and Paratransit*, Seattle, 2009.
40. Andrey Shipalov, Cesar D. Guerrero, Miguel A. Labrador, and Marco Alzate, "On the Implementation of a Capacity Estimator for Wireless Ad Hoc Networks", *Proceedings of IEEE SE*, 2009.

41. Pedro Wightman and Miguel A. Labrador, “Atarraya: A Simulation Tool to Teach and Research Topology Control Algorithms for Wireless Sensor Networks “, *Proceedings of Create-Net 2<sup>nd</sup> International Conference on Simulation Tools and Techniques*, SIMUTools 2009.
42. Albeiro Cortes, Ricardo Gamboa, Nestor Peña, and Miguel A. Labrador, “LEMR: Low Energy and Low Latency in Wireless Sensor Networks“, *Proceedings of IEEE ICC*, 2009.
43. Michelle Kobus, Miguel A. Labrador and Cesar D. Guerrero, “Cut, Copy, Paste: Implementing Computer Science Transfer Programs,” 7<sup>th</sup> Annual Conference of the National Institute for the Study of Transfer Students, (Dallas), January 21-23, 2009. (Accepted but withdrawn.)
44. Miguel A. Labrador, Michelle Kobus, and Cesar D. Guerrero, “CSTEP: Transferring Computer Science Community College Students to Four-year Universities,” Black, Brown & College Bound Conference, November 20-22, 2008. Tampa, FL.
45. Michelle Kobus, Jose Galvis, Cesar Guerrero and Miguel A. Labrador, “Where have all the Tech Savvy students gone? Developing Computer Science TransfEr Programs,” NASPA-FL Drive In Conference. October 3, 2008. Tampa, FL.
46. Sean J. Barbeau, Miguel A. Labrador, Nevine Labib Georggi, Philip L. Winters, and Rafael Perez, “TRAC-IT – A Software Architecture Supporting Simultaneous Travel Behavior Data Collection and Real-time Location-based Services for GPS-Enabled Mobile Phones”, Transportation Research Meeting, 2009.
47. Marco A. Alzate, Néstor M. Peña, and Miguel A. Labrador, “Capacity, Bandwidth, and Available Bandwidth Concepts for Wireless Ad Hoc Networks,” *Proceedings of IEEE MILCOM 2008*, November 2008.
48. Cesar Guerrero and Miguel A. Labrador, “A Hidden Markov Model Approach to Available Bandwidth Estimation and Monitoring,” *Proceedings of IEEE International Conference on Network Protocols (ICNP), Internet Network Management (INM) Workshop*, October 2008.
49. Pedro Wightman and Miguel A. Labrador, “A3: A Topology Control Algorithm for Wireless Sensor Networks,” *Proceedings of IEEE Globecom 2008*, November 2008.
50. Paola A. Gonzalez, Jeremy S. Weinstein, Sean J. Barbeau, Miguel A. Labrador, Phillip L. Winters, Nevine Labib Georggi, and Rafael Perez, “Automatic Mode Detection using Neural Networks and Assisted GPS Data Collected using GPS-enabled Mobile Phones,” *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
51. Sean J. Barbeau, Nevine Labib Georggi , Philip L. Winters, Miguel A. Labrador, and Rafael Perez. "Trac-IT - A 'Smart' User Interface For A Real-Time, Location-Aware, Multimodal Survey Tool," *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
52. Narin Persad-Maharaj, Sean J. Barbeau, Miguel A. Labrador, Phillip L. Winters, Rafael Pérez, and Nevine Labib Georggi, “Real-time Travel Path Prediction using GPS-enabled Mobile Phones,” *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
53. Sean J. Barbeau, Phillip L. Winters, Nevine L. Georggi, Miguel A. Labrador, and Rafael Perez, “The Travel Assistant Device: Utilizing GPS-Enabled Mobile Phones to Aid Transit Riders with Special Needs,” *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
54. Sean J. Barbeau, Miguel A. Labrador, Alfredo Perez, Phillip L. Winters, Nevine L. Georggi, David Aguilar, and Rafael Perez, “Dynamic Management of Real-Time Location Data on GPS-enabled Mobile Phones,” *Proceedings of UBICOMM*, September-October 2008.
55. Marco A. Alzate, Jose C. Pagan, Nestor Peña, and Miguel A. Labrador, “End-to-End Bandwidth and Available Bandwidth Estimation in Multi-Hop IEEE 802.11b Ad Hoc Networks”, *Proceedings of Conference on Information Sciences and Systems (CISS)*, Princeton, March 2008.



56. Pedro Wightman and Miguel A. Labrador, "An RSSI-based Filter for Mobility Control of Mobile Wireless Ad Hoc-based Unmanned Ground Vehicles," *Proceedings of SPIE Defense and Security Symposium 2008*, conference on "Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense VII", March 2008.
57. Cesar D. Guerrero, Miguel A. Labrador, and Rafael A. Perez, "REU Sites: Much More than a Research Experience for Undergraduates", *Proceedings of ASEE Annual Conference and Exposition*, March 2008.
58. Sean Barbeau, Phillip Winters, Nevine Georggi, Miguel A. Labrador, Rafael Perez, William Kearns and Jim Fozard, "The Travel Assistant Device: Electronic Mobility and Transportation Guidance Assistance for Persons with Cognitive Disabilities", *Proceedings of University of Rochester & Microsoft Research Workshop on Intelligent Systems for Assisted Cognition*, pp. 193-207, October 12-13, 2007.
59. Venkatesh Ramarathinam and Miguel A. Labrador, "Communication-assisted Topology Control for Autonomous Unmanned Systems", *Proceedings of 15<sup>th</sup> IEEE Mediterranean Conference on Control and Automation (MED'07)*, June 2007.
60. Marco A. Alzate, Nestor M. Peña, Miguel A. Labrador and Maria Salamanca, "End-to-End Bandwidth Estimation as a Function of Packet Length in Mobile Ad Hoc Networks", *Proceedings of IEEE International Symposium on Computers and Communications (ISCC) 2007*, Aveiro, Portugal, June 2007.
61. Cesar D. Guerrero, Miguel A. Labrador and Rafael Perez, "Enhancing the Global Perspective of REU Site Students", *Proceedings of ASEE 2007*, June 2007.
62. David P. Aguilar, Sean J. Barbeau, Rafael A. Perez, Miguel A. Labrador, and Philip L. Winters, "A Comparison of Fix Times and Estimated Accuracies in Application Programming Interfaces (APIs) for GPS-Enabled Mobile Phones", *Proceedings of the 11th World Conference on Transport Research*, University of California, Berkeley, June 2007.
63. Cesar D. Guerrero, Miguel A. Labrador and Rafael Perez, "Graduate Students Mentoring in REU Sites", *Proceedings of ASEE SE 2007*, April 2007.
64. Sivakumar Bakthavachalu, Steven Bassi, Xu Jianxuan and Miguel A. Labrador, "An Additive Increase Smooth Decrease Strategy for Data and Streaming Applications", *Proceedings of IEEE IPCCC 2007*, April 2007.
65. Marco A. Alzate, Nestor M. Peña and Miguel A. Labrador, "Neuro-Fuzzy Processing of Packet Dispersion Traces for Highly-Variable Cross-Traffic Estimation", *Proceedings of PAM 2007 (poster paper)*, April 2007. Also in Springer-Verlag Lecture Notes in Computer Science, Vol. 4427, pp. 218-222, 2007.
66. Rui Zhang and Miguel A. Labrador, "Residual Energy Aware Dynamic (READ) Topology Control for Heterogeneous Wireless Networks", *Proceedings of the 3<sup>rd</sup> International Symposium on Wireless Pervasive Computing 2007*, February 2007.
67. David P. Aguilar, Sean J. Barbeau, Miguel A. Labrador, Alfredo J. Perez, Rafael A. Perez and Philip L. Winters, "Quantifying the Position Accuracy of Real-Time, Multi-Modal Transportation Behavior Data Collected Using GPS-Enable Mobile Phones", *Proceedings of the National Academy of Sciences' Transportation Review Board Conference*, January 2007.
68. Miguel A. Labrador, "Communication-assisted Topology Control of Semi-autonomous Robots", *Proceedings of IEEE LCN 2006*, pp.563-564, Tampa, FL, November 2006.
69. Cesar D. Guerrero and Miguel A. Labrador, "Experimental and Analytical Evaluation of Available Bandwidth Estimation Tools", *Proceedings of the First IEEE LCN Workshop on Network Measurements*, pp. 710-717, Tampa, FL, November 2006.

70. Mauricio Castillo-Effen, Wilfrido A. Moreno, Miguel A. Labrador and Kimon P. Valavanis, "Adapting Sequential Monte-Carlo Estimation to Cooperative Localization in Wireless Sensor Networks", *Proceedings of the 3<sup>rd</sup> 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.
71. Miguel A. Labrador and Rafael A. Perez, "Increasing the Participation of Under-represented Minority Student Groups in Computer Science and Engineering: An REU Site Experience", *Proceedings of ASEE Frontiers in Education 2006*, October 2006.
72. Rui Zhang, Hang Zhao, and Miguel A. Labrador, "A Grid-based Sink Location Service for Large-scale Wireless Sensor Networks", *Proceedings of ACM International Wireless Communications and Mobile Computing Conference (IWCMC 2006)*, Vancouver, Canada, July 2006.
73. Jose Aguilar and Miguel A. Labrador, "An Ant System-based Routing Algorithm for Wireless Sensor Networks", *Proceedings of CITSA 2006*, July 2006. Selected as the best paper in the session: Applications of Other Disciplines in Cybernetics/Informatics and Control Systems.
74. Rui Zhang, Hang Zhao, and Miguel A. Labrador, "The Anchor Location Service (ALS) Protocol for Large-scale Wireless Sensor Networks" (invited paper), *Proceedings of CREATE-NET InterSense 2006*, Nice, France, May 2006.
75. George Lukachan, Miguel A. Labrador and Wilfrido Moreno, "Scalable and Energy-efficient Routing Protocol for Large-scale Wireless Sensor Networks", *Proceedings of the 6<sup>th</sup> IEEE International Caribbean Conference on Devices, Circuits and Systems (ICCDCS)*, April 2006.
76. Miguel A. Labrador and Rafael A. Perez, "Fulfilling Mentors' Expectations: An REU Site Experience", *Proceedings of ASEE-SE 2006 Conference*, April 2006.
77. Mary J. Granger, Guy-Alain Amoussou, Miguel A. Labrador, Sue Perry and Kelly M. Van Busum, "Research Experience for Undergraduates: Rewarding and Fun", *Proceedings of ACM SIGCSE 2006 (Panel)*, pp. 558-559, March 2006.
78. Dave Armitage, Dmitry Kalyadin, Miguel A. Labrador, and Robin Murphy, "Video and Biohazard Monitoring of Sites During Incidents", *Proceedings of Sharing Solutions for Emergencies and Hazardous Environments (SSFEHE) Conference*, Salt Lake, Utah, February 2006.
79. Sean J. Barbeau, Philip Winters, Nevine Labib Georggi, Miguel A. Labrador, Rafael Perez, "Using GPS-enabled Cell Phones to Improve Multimodal Planning and Facilitate Travel Behavior Change," *Proceedings of the GIS in Transit 2006 conference*, National Center for Transit Research, November, 2005.
80. José Aguilar and Miguel A. Labrador, "A Fault Tolerant Distributed Routing Algorithm based on Combinatorial Ant Systems", *Proceedings of the 2005 International Conference on Intelligent Computing (ICIC 2005)*, Hefei, China, August 23-26, 2005. Also in Springer-Verlag Lecture Notes in Computer Science, Vol. 3644, pp. 514-523, 2005.
81. Dmitry Kalyadin and Miguel A. Labrador, "Performance Evaluation of TCP over Wireless Networks", *Third Annual USF Undergraduate Research Symposium*, 1<sup>st</sup> place in the paper competition in the Physical Sciences and Engineering, March 31<sup>st</sup>, 2005.
82. Sivakumar Bakthavachalu and Miguel A. Labrador, "SF-SACK: A Smooth Friendly TCP SACK-based Transport Layer Protocol for Data and Multimedia Applications", Poster in *Proceedings of the 2005 Florida Tech Transfer Conference*, Orlando, FL, May 18-19<sup>th</sup>, 2005.
83. Srinivas Bandi Rames, Miguel A. Labrador, and Dave Armitage, "Performance Evaluation of Priority-based Schemes for Service Differentiation in 802.11 WLANs", *Proceedings of the 2nd International Conference on Cybernetics and Information Technologies, Systems and Applications*, CITSA 2005, July 2005.

84. Gwyn Chatranton, Miguel A. Labrador, and Sujata Banerjee, "A Credit-based AQM Mechanism to Achieve Fairness in the Internet", *Proceedings of IFIP Networking 2005*, May 2005 (acceptance rate < 25%). Also in Springer-Verlag Berlin Lecture Notes in Computer Science, Vol. 3462, pp. 930-942, 2005.
85. Steven Bassi and Miguel A. Labrador, "Setting Up a Web100-Dummysnet Testbed for Research in Transport Layer Protocols", *Proceedings of ACM South East 2005 Conference*, March 2005.
86. Gwyn Chatranton, Miguel A. Labrador, and Sujata Banerjee, "Fairness of AQM Schemes for TCP-friendly Traffic", *Proceedings of IEEE Globecom 2004*, pp. 725-731, Texas, November 2004.
87. George Lukachan and Miguel A. Labrador, "SELAR: Scalable Energy-Efficient Location Aided Routing Protocol for Wireless Sensor Networks", *Proceedings of IEEE LCN Workshop on Wireless Local Networks (WLN) 2004*, pp. 694-695, Tampa, November 2004.
88. Yegyalakshmi Easwaran and Miguel A. Labrador, "Evaluation and Application of Available Bandwidth Estimation Techniques to Improve TCP Performance", *Proceedings of IEEE LCN 2004*, pp. 268-275, Tampa, November 2004.
89. Miguel A. Labrador, John Wolan, Grisselle Centeno, Rudyger Schlaf, Ashok Kumar, and Gray Mullins, "A Research Initiative to Close the Gap between Undergraduate and Graduate School in Engineering", *Proceedings of ASEE Frontiers in Education 2004*, Savannah, October 2004.
90. Praveen Ikkurthy and Miguel A. Labrador, "Experimental Study of MPEG-4 Traffic over Wireless LANs", *Proceedings of the Eighth World Multi-Conference on Systemics, Cybernetics, and Informatics (SCI) 2004*, pp. 510-515, Orlando, July 2004.
91. Ala Al-Fuqaha, Ghulam Chaudhy, Cory Beard, Miguel A. Labrador, Mohsen Guizani and Ibrahim Habib, "Link-State Update Policies for All-Optical DWDM Transport Networks", *Proceedings of IEEE ICC 2004*, pp. 1831-1835, Paris, June 2004.
92. Xu Jianxuan, Subodh Kerkar, Miguel A. Labrador and Mohsen Guizani, "Performance Evaluation of TCP over Optical Links", *Proceedings of IEEE ICC 2004*, pp. 1574-1578, Paris, June 2004.
93. Praveen Ikkurthy, John Shahbazian, Miguel A. Labrador, Kenneth J. Christensen, "Testing Large Scale Streaming Internet Applications over Wireless LANs", *Proceedings of the Eighth IEEE International Symposium on High Assurance Systems Engineering*, pp. 109-115, Tampa, March 2004.
94. Sarma Vangala and Miguel A. Labrador, "The TCP SACK-aware Snoop Protocol for TCP over Wireless Networks", *Proceedings of IEEE VTC 2003*, pp. 2624-2628, Orlando, October 2003.
95. Gwyn Chatranton, Miguel A. Labrador, and Sujata Banerjee, "BLACK: Detection and Preferential Dropping of High Bandwidth Unresponsive Flows", *Proceedings of IEEE ICC 2003*, pp. 664-668, Anchorage, Alaska, May 2003.
96. Praveen Ikkurthy and Miguel A. Labrador, "Characterization of MPEG-4 Traffic over IEEE 802.11b Wireless LANs", *Proceedings of the 27<sup>th</sup> Annual IEEE Conference on Local Computer Networks (LCN 2002)*, pp. 421-427, Tampa, November 2002.
97. Sarma Vangala and Miguel A. Labrador, "Performance of TCP over Wireless Networks with the Snoop Protocol", *Proceedings of the 27<sup>th</sup> Annual IEEE Conference on Local Computer Networks (LCN 2002)*, pp. 600-601, Tampa, November 2002.
98. Venkatesh Ramarathinam and Miguel A. Labrador, "Performance Analysis of TCP over Static Ad Hoc Wireless Networks", *Proceedings of the ISCA 15th International Conference on Parallel and Distributed Computing Systems (PDCS)*, pp. 410-415, Louisville, KY, September 2002.
99. Miguel A. Labrador and Sujata Banerjee, "Support for Predictability and Relative Service Differentiation using Selective Packet Dropping", *Proceedings of IEEE Globecom 2000*, pp. 626-630, San Francisco, November 2000.

100. Miguel A. Labrador and Sujata Banerjee, "Performance of Selective Packet Dropping Policies in Heterogeneous Networks", *Proceedings of IEEE ICC 2000*, pp. 470–474, New Orleans, June 2000.
101. Peerapon Siripongwutikorn, Miguel A. Labrador, and Taieb F. Znati, "A Wireless-Aware Packet Dropping Policy for ATM Networks", *Proceedings of the Communication Networks and Distributed Systems Modeling and Simulation Conference (CNDS)*, (CD Proceedings), San Diego, January 2000.
102. Miguel A. Labrador and Sujata Banerjee, "Performance of Selective Packet Dropping Schemes in Multi-hop Networks", *Proceedings of the IEEE Globecom*, pp. 1604–1609, Rio de Janeiro, Brazil, December 1999.
103. Miguel A. Labrador and Sujata Banerjee, "Enhancing Application Throughput by Selective Packet Dropping", *Proceedings of the IEEE ICC*, pp. 1217–1222, Vancouver, Canada, June 1999. (Recipient of the 1999 SIS Robert R. Korfhage Award.)
104. Sujata Banerjee, P. Siripongwutikorn, Miguel A. Labrador, V. Pendyala, and J. Ngamvirojcharoen, "Performance-Based QoS Mapping Algorithms in ATM Networks", *Proceedings of the 4th INFORMS Telecommunications Conference*, (CD Proceedings), Boca Raton, FL, March 1998.

## Publications ordered by area of research

### Ubiquitous Sensing and Location-Based Services:

1. Ponrathi Athilingam, Miguel A. Labrador, Elizabeth Frances, Lauren Mack, Alyanna Bianca San Juan and Amanda F. Elliot, "Features and Usability Assessment of a Patient-centered Mobile Application (HeartMapp) for Self-management of Heart Failure," *Elsevier Applied Nursing Research* 32, pp. 156-163, 2016.
2. Idalides Vergara, Luis Jaimes and Miguel A. Labrador, "Privacy-Preserving Mechanisms for Crowdsensing: Survey and Research Challenges," *Internet of Things Journal*, Special Issue on Privacy Issues in the Internet of Things, (accepted), 2016.
3. Idalides Vergara, Diego Mendez, Luis Jaimes and Miguel A. Labrador, "A-PIE: An Algorithm for Preserving Privacy, Quality of Information, and Energy Consumption in Participatory Sensing Systems," *Pervasive and Mobile Computing*, 2016.
4. Shanice Clarke, Luis Jaimes and Miguel A. Labrador, "mStress: A Mobile Recommender System for Just-in-Time Interventions for Stress", Workshop on Ambient Assisted Living and eHealth, IEEE CCNC, 2017.
5. Ponrathi Athilingam, Miguel A. Labrador, Elizabeth Frances, Lauren Mack, Alyanna Bianca San Juan and Amanda F. Elliot, "Features and Usability Assessment of a Patient-centered Mobile Application (HeartMapp) for Self-management of Heart Failure," *Elsevier Applied Nursing Research* 32, pp. 156-163, 2016.
6. Andres Perez and Miguel A. Labrador, "A Smartphone-based System for Clinical Gait Analysis," *IEEE Smartcomp*, May, 2016.
7. Juan Marron, Miguel A. Labrador, Adrian Menendez, Daniel Fernandez and Martin Gonzalez, "Multi Sensor System for Pedestrian Tracking and Activity Recognition in Indoor Environments," *International Journal of Ad Hoc and Ubiquitous Computing*, Vol. 23, No. 1/2, 2016.
8. Brittany Cook, Edwin Peguero and Miguel A. Labrador, "Assessing Jitter in Sensor Time Series from Android Mobile Devices," *IEEE Smartcomp*, May, 2016.
9. Luis Valcourt, Yueng dela Hoz, and Miguel A. Labrador, "Smartphone-based Human Fall Detection System," *IEEE Latin America Transaction, Regular Edition* Vol. 14, Issue 2, February 2016.

10. Jorge Adorno, Yueng de la Hoz and Miguel A. Labrador, "Smartphone-based Floor Detection in Unstructured and Structured Environments," Workshop on Pervasive Technologies and care systems for sustainable Aging-in-place (PASTA), IEEE Percom, 2016.
11. Mark Di Sano, Andres Perez, Miguel A. Labrador, Ponrathi Athilingam and Federico Giovanetti, "HeartMapp: A Mobile Application to Improve CHF Outcomes and Reduce Hospital Readmissions," *Wireless Health*, October, 2015.
12. Ravichandran Subramanian, Sudeep Sarkar, Miguel A. Labrador, Kristina Contino and Christopher Eggert, "Orientation Invariant Gait Matching Algorithm based on the Kabsch Alignment," *IEEE International Conference on Identity, Security and Behaviour Analysis*, **Best Student Paper Award**, March 2015.
13. Yueng De La Hoz and Miguel A. Labrador, "Survey on Fall Detection and Fall Prevention Using Wearable and External Sensors," *Sensors*, 14(10), 19806-19842; doi:10.3390/s141019806, October 2014.
14. Luis Valcourt, Yueng De La Hoz and Miguel A. Labrador, "Human Fall Detection with Smartphones," *Proceedings of IEEE Latincom*, 2014.
15. Alejandra Vidal, Juan Marron and Miguel A. Labrador, "Real-time Pedestrian Tracking in Indoor Environments," **Best Paper Award**, *Proceedings of IEEE Latincom*, 2014.
16. Steven Diaz, Yueng De La Hoz and Miguel A. Labrador, "Dynamic Background Subtraction for Fall Detection System using a 2D Camera," *Proceedings of IEEE Latincom*, 2014.
17. Mayra Zurbaran, Liliana Gonzalez, Pedro Wightman, Miguel A. Labrador, Daladier Jabba, and Miguel Jimeno, "A Survey on Privacy in Location-Based Services", *Ingenieria y Desarrollo*, ISSN: 0122-3461, Vol. 32, N 2, July-December, 2014.
18. Idalides Vergara, Diego Mendez and Miguel A. Labrador, "Privacy, Quality of Information, and Energy Consumption in Participatory Sensing Systems," *IEEE Percom*, March 2014 (Full papers acceptance rate: 10%).
19. Khoa Tran, Sean Barbeau, and Miguel A. Labrador, "Automatic Identification of Points of Interest in Global Navigation Satellite System Data: A Spatial Temporal Approach", *ACM SigSpatial*, Workshop on GeoStreaming (IWGS), November 2013.
20. P. Wightman, M. Zulbaran, M. Rodriguez, and M. A. Labrador, "MaPIR: Mapping-Based Private Information Retrieval for Location Privacy in LBS", *8th IEEE Workshop on Network Security, IEEE Local Computer Networks Conference (LCN)*, 2013.
21. Idalides Vergara, Diego Mendez and Miguel A. Labrador, "On the Interactions between Privacy-Preserving, Incentive, and Inference Mechanisms in Participatory Sensing Systems," (short paper), *7th International Conference on Network and System Security (NSS)*, June 2013.
22. Christopher Eggert, Oscar Lara, and Miguel A. Labrador, "Recognizing Mental Stress in Chess Players using Vital Sign Data," *IEEE-SE*, 2013.
23. Diego Mendez and Miguel A. Labrador, "On Sensor Data Verification for Participatory Sensing Systems," *Journal of Networks*, (accepted) January, 2013.
24. Diego Mendez, Miguel A. Labrador and K. Ramachandran, "Data Interpolation for Participatory Sensing Systems," *Pervasive and Mobile Computing*, Vol. 9, pp. 132-148, 2013.
25. Miguel A. Labrador, Alfredo Perez, and Pedro Wightman, "Location-Based Information Systems – Developing Real-Time Tracking Applications", Taylor and Francis, Chapman & Hall/CRC Computer and Information Science Series, 2010.
26. Oscar Lara and Miguel A. Labrador, "A Survey on Human Activity Recognition using Wearable Sensors", *IEEE Communications Surveys and Tutorials*, December 2012.

27. Khoa Tran, Sean J. Barbeau, Edward Hillsman and Miguel A. Labrador, “Go\_Sync – A Framework to Synchronize Crowd-Sourced Mapping Contributors from Online Communities and Transit Agency Bus Stop Inventories,” *International Journal of Intelligent Transportation Systems Research*, Vo. 11, Issue 2 (2013), pp. 54-64.
28. Oscar D. Lara, Alfredo J. Perez, Miguel A. Labrador and Jose D. Posada, “Centinela: A Human Activity Recognition System Based on Acceleration and Vital Sign Data,” *Pervasive and Mobile Computing*, Elsevier, Vol. 8, No. 5, pp.717-729, 2012.
29. Sean J. Barbeau, Miguel A. Labrador, Nevine L. Georggi, Philip L. Winters and Rafael A. Perez, “LAISYC – A Location-Aware Framework to Support Intelligent Real-time Applications for GPS-Enabled Mobile Phones”, *IEEE Pervasive Computing*, Vol. 10, No. 3, pp. 58-67, July-Sept. 2011.
30. Alfredo Perez, Miguel A. Labrador, and Sean Barbeau, “G-Sense: A Scalable Architecture for Global Sensing and Monitoring”, *IEEE Network Magazine*, Vol. 24, No. 4, pp. 57-64, July 2010.
31. Sean J. Barbeau, Philip L. Winters, Nevine L. Georggi, Miguel A. Labrador, and Rafael A. Perez, “The Travel Assistant Device: Utilizing GPS-Enable Mobile Phones to Aid Transit Riders with Special Needs”, *IET Intelligent Transport Systems Journal*, Vol. 4, Issue 1, pp. 12-23, 2010.
32. Paola A. Gonzalez, Jeremy S. Weinstein, Sean J. Barbeau, Miguel A. Labrador, Philip L. Winters, Nevine L. Georggi, and Rafael A. Perez, “Automating Mode Detection for Travel Behavior Analysis by Using GPS-enabled Mobile Phones and Neural Networks”, *IET Intelligent Transport Systems Journal*, Vol. 4, Issue 1, pp. 37-49, 2010.
33. Miguel A. Labrador, Katina Michael and Axel Kupper, “Advanced Location-Based Services”, *Computer Communications Journal*, Elsevier, Guest Editorial, Vol. 31, No. 6, pp. 1053-1054, April 2008.
34. Sean Barbeau, Miguel A. Labrador, Philip Winters, Rafael Perez and Nevine Labib Georggi, “Location API 2.0 for J2ME – A New Standard in Location for Java-enabled Mobile Phones”, *Computer Communications Journal*, Elsevier, Vol. 31, No. 6, pp. 1091-1103, April 2008.
35. David P. Aguilar, Sean J. Barbeau, Miguel A. Labrador, Alfredo Perez, Rafael A. Perez, and Philip L. Winters, “Quantifying the Position Accuracy of Real-time Multi-Modal Transportation Behavior Data Collected using GPS-Enabled Mobile Phones”, *Transportation Research Record: Journal of the Transportation Research Board of the National Academies*, No. 1992, pp. 54-60, October 2007.
36. Sean Barbeau, Miguel A. Labrador, Philip Winters, Rafael Perez and Nevine Labib Georggi, “A General Architecture in Support of Interactive, Multimedia, Location-based Mobile Applications”, *IEEE Communications Magazine*, Vol. 44, No. 11, pp. 156-163, November 2006.
37. Diego Mendez and Miguel A. Labrador, “Removing Spatial Outliers in PS Applications,” in *Proceedings of International Conference on Selected Topics in Mobile and Wireless Networking (iCOST)*, 2012.
38. Diego Mendez and Miguel A. Labrador, “Density Maps: Determining Where to Sample in Participatory Sensing Systems,” in *Proceedings of 3<sup>rd</sup> International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC)*, 2012.
39. Luis G. Jaimes, Idalides J. Vergara, and Miguel A. Labrador, “A Location-Based Incentive Mechanism for Participatory Sensing Systems with Budget Constraints,” in *Proceedings of IEEE PerCom*, 2012.
40. Pedro M. Wightman, Miguel A. Jimeno, Daladier Jabba, and Miguel A. Labrador, “Matlock: A Location Obfuscation Technique for Accuracy-Restricted Applications,” in *Proceedings of IEEE WCNC*, 2012.
41. Oscar Lara and Miguel A. Labrador, “A Mobile Human Activity Recognition System,” in *Proceedings of CCNC (Demos)*, 2012.
42. Oscar Lara and Miguel A. Labrador, “A Mobile Platform for Real-time Human Activity Recognition,” in *Proceedings of CCNC*, 2012.

43. Idalides Vergara-Laurens and Miguel A. Labrador, “Preserving Privacy while Reducing Power Consumption and Information Loss in LBS and Participatory Sensing Applications”, *Proceedings of IEEE Globecom*, 2011.
44. Pedro Wightman, Winston Coronell, Daladier Jabba, Miguel Jimeno, and Miguel A. Labrador, “Evaluation of Location Obfuscation Techniques for Privacy in Location Based Information Systems”, *Proceedings of Latincom*, 2011.
45. Marcy Gordon, Sean Barbeau, and Miguel A. Labrador, “Location Data Signing – Protecting the Integrity and Authenticity of Positioning System Data,” *Proceedings of 18th World Congress on Intelligent Transport Systems*, 2011.
46. Khoa Tran, Edward Hillsman, Sean Barbeau, and Miguel A. Labrador, “Go\_Sync – A Framework to Synchronize Crowd-sourced Mapping Contributions from Online Communities and Transit Agency Bus Stop Inventories,” *Proceedings of 18th World Congress on Intelligent Transport Systems*, 2011.
47. Diego Mendez, Alfredo Perez, Miguel A. Labrador, and Juan J. Marron, “P-Sense: A Participatory Sensing System for Air Pollution Monitoring and Control,” *Proceedings of IEEE PerCom Work-In-Progress Workshop*, 2011.
48. Isaac M. Taylor and Miguel A. Labrador, “Improving the Energy Consumption in Mobile Phones by Filtering Noisy GPS Fixes with Modified Kalman Filters,” *Proceedings of IEEE WCNC*, 2011.
49. Sean J. Barbeau, Miguel A. Labrador, Nevine Labib Georggi, Philip L. Winters, and Rafael Perez, “The Travel Assistant Device (TAD): Increasing Ridership of Fixed-Route Transit By Utilizing GPS-Enabled Cell Phones”, *Proceedings of APTA Conference on Bus and Paratransit*, Seattle, 2009.
50. Sean J. Barbeau, Miguel A. Labrador, Nevine Labib Georggi, Philip L. Winters, and Rafael Perez, “TRAC-IT – A Software Architecture Supporting Simultaneous Travel Behavior Data Collection and Real-time Location-based Services for GPS-Enabled Mobile Phones”, Transportation Research Meeting, 2009.
51. Paola A. Gonzalez, Jeremy S. Weinstein, Sean J. Barbeau, Miguel A. Labrador, Phillip L. Winters, Nevine Labib Georggi, and Rafael Perez, “Automatic Mode Detection using Neural Networks and Assisted GPS Data Collected using GPS-enabled Mobile Phones,” *Proceedings of 15th World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
52. Sean J. Barbeau, Nevine Labib Georggi , Philip L. Winters, Miguel A. Labrador, and Rafael Perez. "Trac-IT - A 'Smart' User Interface For A Real-Time, Location-Aware, Multimodal Survey Tool," *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
53. Narin Persad-Maharaj, Sean J. Barbeau, Miguel A. Labrador, Phillip L. Winters, Rafael Pérez, and Nevine Labib Georggi, “Real-time Travel Path Prediction using GPS-enabled Mobile Phones,” *Proceedings of 15<sup>th</sup> World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
54. Sean J. Barbeau, Phillip L. Winters, Nevine L. Georggi, Miguel A. Labrador, and Rafael Perez, “The Travel Assistant Device: Utilizing GPS-Enabled Mobile Phones to Aid Transit Riders with Special Needs,” *Proceedings of 15th World Congress on Intelligent Transport Systems (ITS WC) 2008*, November 2008.
55. Sean J. Barbeau, Miguel A. Labrador, Alfredo Perez, Phillip L. Winters, Nevine L. Georggi, David Aguilar, and Rafael Perez, “Dynamic Management of Real-Time Location Data on GPS-enabled Mobile Phones,” *Proceedings of UBICOMM*, September-October 2008.
56. Sean Barbeau, Phillip Winters, Nevine Georggi, Miguel A. Labrador, Rafael Perez, William Kearns and Jim Fozard, “The Travel Assistant Device: Electronic Mobility and Transportation Guidance Assistance for Persons with Cognitive Disabilities”, *Proceedings of University of Rochester & Microsoft Research Workshop on Intelligent Systems for Assisted Cognition*, pp. 193-207, October 12-13, 2007.

57. David P. Aguilar, Sean J. Barbeau, Rafael A. Perez, Miguel A. Labrador, and Philip L. Winters, "A Comparison of Fix Times and Estimated Accuracies in Application Programming Interfaces (APIs) for GPS-Enabled Mobile Phones", *Proceedings of the 11th World Conference on Transport Research*, University of California, Berkeley, June 2007.
58. David P. Aguilar, Sean J. Barbeau, Miguel A. Labrador, Alfredo J. Perez, Rafael A. Perez and Philip L. Winters, "Quantifying the Position Accuracy of Real-Time, Multi-Modal Transportation Behavior Data Collected Using GPS-Enable Mobile Phones", *Proceedings of the National Academy of Sciences' Transportation Review Board Conference*, January 2007.
59. Sean J. Barbeau, Philip Winters, Nevine Labib Georggi, Miguel A. Labrador, Rafael Perez, "Using GPS-enabled Cell Phones to Improve Multimodal Planning and Facilitate Travel Behavior Change," *Proceedings of the GIS in Transit 2006* conference, National Center for Transit Research, November, 2005.

#### **Wireless Ad Hoc and Sensor Networks:**

1. Ozgur Yurur, Miguel A. Labrador, and Wilfrido Moreno, "Adaptive and Energy Efficient Context Representation Framework in Mobile Sensing", *IEEE Transactions on Mobile Computing*, April 2013.
2. Marco A. Alzate, Néstor M. Peña, and Miguel A. Labrador, "Capacity, Bandwidth, and Available Bandwidth in Wireless Ad Hoc Networks: Definitions and Estimation," Book chapter in "Mobile Ad-Hoc Networks: Protocol Design," edited by Xin Wang, ISBN 978-953-307-402-3, InTech, January 2011.
3. Miguel A. Labrador and Pedro Wightman, "Topology Control in Wireless Sensor Networks – with a Simulation Tool for Teaching and Research", Springer 2009.
4. Pedro M. Wightman and Miguel A. Labrador, "A Family of Simple Distributed Minimum Connected Dominating Set-Based Topology Construction Algorithms," *Journal of Networks and Computer Applications, Elsevier*, Vol. 34, pp. 1997-2010, 2011.
5. Pedro M. Wightman, Aldo Fabregas, and Miguel A. Labrador, "An Optimal Solution to the MCDS Problem for Topology Construction in Wireless Sensor Networks," *IEEE Latin America Transactions*, Special Issue IEEE Latincom 2011.
6. Pedro M. Wightman and Miguel A. Labrador, "Reducing the Communication Range or Turning Nodes Off? An Initial Evaluation of Topology Control Strategies for Wireless Sensor Networks", *Revista Ingeniería y Desarrollo*, Universidad del Norte, Julio-Diciembre, No. 28, pp. 66-88, 2010.
7. Pedro M. Wightman and Miguel A. Labrador, "Topology Maintenance: Extending the Lifetime of Wireless Sensor Networks", *IEEE Latin America Transactions*, Vol. 8, No. 4, pp. 469-475, August, 2010.
8. Albeiro Cortes, Nestor Peña and Miguel A. Labrador, "An Adaptive Multi-channel Approach for Real-Time Multimedia Wireless Sensor Networks", *IEEE Latin America Transactions*, Vol. 8, No. 4, pp. 370-376 August, 2010.
9. Mauricio Castillo-Effen, Miguel A. Labrador, Wilfrido A. Moreno, and Kimon P. Valavanis, "Probabilistic Estimation Algorithm for Cooperative Localization in Wireless Sensor Networks", *Ad Hoc and Sensor Wireless Networks Journal*, Vol. 5, No. 1-2, pp. 27-46, 2008.
10. Rui Zhang, Hang Zhao, and Miguel A. Labrador, "A Scalable and Energy Efficient Sink Location Service for Large-scale Wireless Sensor Networks", *Ad Hoc and Sensor Wireless Networks Journal*, Vol. 4, No. 4, pp. 289-320, 2007.
11. Julio Araúz, Prashant Krishnamurthy, and Miguel A. Labrador, "Discrete Raleigh Fading Channel Modeling", *Wireless Communications and Mobile Computing Journal*, 4:413-425, June 2004.



12. Albeiro Cortes, Nestor Peña, and Miguel A. Labrador, "Performance Modeling of the LEMR-multichannel Protocol", *Proceedings of IEEE Latincom*, 2011.
13. Pedro Wightman, Miguel Jimeno, Daladier Jabba, Miguel A. Labrador, Mayra Zurbarán, César Córdoba, and Armando Guerrero, "Empirical Approach to Network Sizing for Connectivity in Wireless Sensor Networks with Realistic Radio Propagation Models," *Proceedings of 10<sup>th</sup> International Conference on Adhoc Networks and Wireless (Adhoc-Now)*, 2011.
14. Alfredo J. Perez and Miguel A. Labrador, "A Multiobjective Approach for Wireless Sensor Networks Relay Placement," *Proceedings of IEEE WCNC*, 2011.
15. Pedro Wightman and Miguel A. Labrador, "A3Cov: A New Topology Construction Protocol for Connected Area Coverage in WSN," *Proceedings of IEEE WCNC*, 2011.
16. Pedro Wightman and Miguel A. Labrador, "An Optimal Solution to the MCDS Problem for Topology Construction in Wireless Sensor Networks," *Proceedings of IEEE Latincom*, 2010.
17. Daladier Jabba Molinares and Miguel A. Labrador, "An Adaptive Logical Link Layer Protocol for Underwater Acoustic Communication Channels", *Proceedings of IEEE Oceans*, 2009.
18. Pedro Wightman and Miguel A. Labrador, "Topology Maintenance: Extending the Lifetime of Wireless Sensor Networks," *Proceedings of IEEE Latincom*, 2009.
19. Albeiro Cortes, Nestor Peña, and Miguel A. Labrador, "An Adaptive Multi-channel Approach for Real-Time Multimedia Wireless Sensor Networks", *Proceedings of IEEE Latincom*, 2009.
20. Daladier Jabba Molinares and Miguel A. Labrador, "A Data Link Layer in Support of Swarming of Autonomous Underwater Vehicles", *Proceedings of IEEE Oceans*, 2009.
21. Andrey Shipalov, Cesar D. Guerrero, Miguel A. Labrador, and Marco Alzate, "On the Implementation of a Capacity Estimator for Wireless Ad Hoc Networks", *Proceedings of IEEE SE*, 2009.
22. Pedro Wightman and Miguel A. Labrador, "Atarraya: A Simulation Tool to Teach and Research Topology Control Algorithms for Wireless Sensor Networks", *Proceedings of Create-Net 2<sup>nd</sup> International Conference on Simulation Tools and Techniques*, SIMUTools 2009.
23. Albeiro Cortes, Ricardo Gamboa, Nestor Peña, and Miguel A. Labrador, "LEMUR: Low Energy and Low Latency in Wireless Sensor Networks", *Proceedings of IEEE ICC*, 2009.
24. Marco A. Alzate, Néstor M. Peña, and Miguel A. Labrador, "Capacity, Bandwidth, and Available Bandwidth Concepts for Wireless Ad Hoc Networks," *Proceedings of IEEE MILCOM 2008*, November 2008.
25. Pedro Wightman and Miguel A. Labrador, "A3: A Topology Control Algorithm for Wireless Sensor Networks," *Proceedings of IEEE Globecom 2008*, November 2008.
26. Marco A. Alzate, Jose C. Pagan, Nestor Peña, and Miguel A. Labrador, "End-to-End Bandwidth and Available Bandwidth Estimation in Multi-Hop IEEE 802.11b Ad Hoc Networks", *Proceedings of Conference on Information Sciences and Systems (CISS)*, Princeton, March 2008.
27. Pedro Wightman and Miguel A. Labrador, "An RSSI-based Filter for Mobility Control of Mobile Wireless Ad Hoc-based Unmanned Ground Vehicles," *Proceedings of SPIE Defense and Security Symposium 2008*, conference on "Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense VII", March 2008.
28. Venkatesh Ramarathinam and Miguel A. Labrador, "Communication-assisted Topology Control for Autonomous Unmanned Systems", *Proceedings of 15<sup>th</sup> IEEE Mediterranean Conference on Control and Automation (MED'07)*, June 2007.
29. Marco A. Alzate, Nestor M. Peña, Miguel A. Labrador and Maria Salamanca, "End-to-End Bandwidth Estimation as a Function of Packet Length in Mobile Ad Hoc Networks", *Proceedings of IEEE International Symposium on Computers and Communications (ISCC) 2007*, Aveiro, Portugal, June 2007.

30. Rui Zhang and Miguel A. Labrador, “Residual Energy Aware Dynamic (READ) Topology Control for Heterogeneous Wireless Networks”, *Proceedings of the 3<sup>rd</sup> International Symposium on Wireless Pervasive Computing 2007*, February 2007.
31. Miguel A. Labrador, “Communication-assisted Topology Control of Semi-autonomous Robots”, *Proceedings of IEEE LCN 2006*, pp.563-564, Tampa, FL, November 2006.
32. Mauricio Castillo-Effen, Wilfrido A. Moreno, Miguel A. Labrador and Kimon P. Valavanis, “Adapting Sequential Monte-Carlo Estimation to Cooperative Localization in Wireless Sensor Networks”, *Proceedings of the 3<sup>rd</sup> 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.
33. Rui Zhang, Hang Zhao, and Miguel A. Labrador, “A Grid-based Sink Location Service for Large-scale Wireless Sensor Networks”, *Proceedings of ACM International Wireless Communications and Mobile Computing Conference (IWCMC 2006)*, Vancouver, Canada, July 2006.
34. Jose Aguilar and Miguel A. Labrador, “An Ant System-based Routing Algorithm for Wireless Sensor Networks”, *Proceedings of CITSA 2006*, July 2006. Selected as the best paper in the session: Applications of Other Disciplines in Cybernetics/Informatics and Control Systems.
35. Rui Zhang, Hang Zhao, and Miguel A. Labrador, “The Anchor Location Service (ALS) Protocol for Large-scale Wireless Sensor Networks” (invited paper), *Proceedings of CREATE-NET InterSense 2006*, Nice, France, May 2006.
36. George Lukachan, Miguel A. Labrador and Wilfrido Moreno, “Scalable and Energy-efficient Routing Protocol for Large-scale Wireless Sensor Networks”, *Proceedings of the 6<sup>th</sup> IEEE International Caribbean Conference on Devices, Circuits and Systems (ICCDCS)*, April 2006.
37. George Lukachan and Miguel A. Labrador, “SELAR: Scalable Energy-Efficient Location Aided Routing Protocol for Wireless Sensor Networks”, *Proceedings of IEEE LCN Workshop on Wireless Local Networks (WLN) 2004*, pp. 694-695, Tampa, November 2004.
38. Praveen Ikkurthy and Miguel A. Labrador, “Experimental Study of MPEG-4 Traffic over Wireless LANs”, *Proceedings of the Eighth World Multi-Conference on Systemics, Cybernetics, and Informatics (SCI) 2004*, pp. 510-515, Orlando, July 2004.
39. Praveen Ikkurthy, John Shabbazian, Miguel A. Labrador, Kenneth J. Christensen, “Testing Large Scale Streaming Internet Applications over Wireless LANs”, *Proceedings of the Eighth IEEE International Symposium on High Assurance Systems Engineering*, pp. 109-115, Tampa, March 2004.
40. Praveen Ikkurthy and Miguel A. Labrador, “Characterization of MPEG-4 Traffic over IEEE 802.11b Wireless LANs”, *Proceedings of the 27<sup>th</sup> Annual IEEE Conference on Local Computer Networks (LCN 2002)*, pp. 421-427, Tampa, November 2002.

#### **Design and Evaluation of Computer Networks and Communication Protocols:**

1. Sarma Vangala and Miguel A. Labrador, “Shielding TCP from Wireless Losses”, *Wiley’s Wireless Communications and Mobile Computing Journal*, Vol. 7, Issue 6, pp. 679-688, August 2007.
2. Laura M. Voicu, Steven Bassi and Miguel A. Labrador, “Analytical and Experimental Evaluation of TCP with an Additive Increase Smooth Decrease (AISD) Strategy”, *Computer Communications Journal*, Elsevier, Vol. 30, No. 2, pp. 479-495, January 2007.
3. Dmitry Kalyadin and Miguel A. Labrador, “Performance Evaluation of TCP over Wireless Networks”, *USF Journal of Undergraduate Research*, Vol. 1, No.1, pp. 7-15, 2005.
4. Xu Jianxuan, Miguel A. Labrador and Mohsen Guizani, “Performance Evaluation of TCP over Optical Channels and Heterogeneous Networks”, *Cluster Computing: The Journal of Networks, Software Tools and Applications*, Vol. 7, Issue 3, pp. 225-238, July 2004.

5. Miguel A. Labrador and Sujata Banerjee. "Application Performance and Relative Service Differentiation for Best Effort Traffic" *Computer Communications Journal*, Volume 26, Issue 10, June 2003, pp. 1031-1046.
6. Sivakumar Bakthavachalu, Steven Bassi, Xu Jianxuan and Miguel A. Labrador, "An Additive Increase Smooth Decrease Strategy for Data and Streaming Applications", *Proceedings of IEEE IPCCC 2007*, April 2007.
7. Dmitry Kalyadin and Miguel A. Labrador, "Performance Evaluation of TCP over Wireless Networks", *Third Annual USF Undergraduate Research Symposium*, 1<sup>st</sup> place in the paper competition in the Physical Sciences and Engineering, March 31<sup>st</sup>, 2005.
8. Sivakumar Bakthavachalu and Miguel A. Labrador, "SF-SACK: A Smooth Friendly TCP SACK-based Transport Layer Protocol for Data and Multimedia Applications", Poster in *Proceedings of the 2005 Florida Tech Transfer Conference*, Orlando, FL, May 18-19<sup>th</sup>, 2005.
9. Srinivas Bandi Rames, Miguel A. Labrador, and Dave Armitage, "Performance Evaluation of Priority-based Schemes for Service Differentiation in 802.11 WLANs", *Proceedings of the 2nd International Conference on Cybernetics and Information Technologies, Systems and Applications*, CITSA 2005, July 2005.
10. Steven Bassi and Miguel A. Labrador, "Setting Up a Web100-Dummynet Testbed for Research in Transport Layer Protocols", *Proceedings of ACM South East 2005 Conference*, March 2005.
11. Yegyalakshmi Easwaran and Miguel A. Labrador, "Evaluation and Application of Available Bandwidth Estimation Techniques to Improve TCP Performance", *Proceedings of IEEE LCN 2004*, pp. 268-275, Tampa, November 2004.
12. Xu Jianxuan, Subodh Kerkar, Miguel A. Labrador and Mohsen Guizani, "Performance Evaluation of TCP over Optical Links", *Proceedings of IEEE ICC 2004*, pp. 1574-1578, Paris, June 2004.
13. Sarma Vangala and Miguel A. Labrador, "The TCP SACK-aware Snoop Protocol for TCP over Wireless Networks", *Proceedings of IEEE VTC 2003*, pp. 2624-2628, Orlando, October 2003.
14. Sarma Vangala and Miguel A. Labrador, "Performance of TCP over Wireless Networks with the Snoop Protocol", *Proceedings of the 27<sup>th</sup> Annual IEEE Conference on Local Computer Networks (LCN 2002)*, pp. 600-601, Tampa, November 2002.
15. Venkatesh Ramarathinam and Miguel A. Labrador, "Performance Analysis of TCP over Static Ad Hoc Wireless Networks", *Proceedings of the ISCA 15th International Conference on Parallel and Distributed Computing Systems (PDCS)*, pp. 410-415, Louisville, KY, September 2002.

#### **Available Bandwidth Estimation Techniques:**

1. Cesar Guerrero and Miguel A. Labrador, "Traceband: A Fast, Low Overhead and Accurate Tool for Available Bandwidth Estimation and Monitoring", *Computer Networks*, 54, (2010), pp. 977-990.
2. Cesar D. Guerrero and Miguel A. Labrador, "On the Applicability of Available Bandwidth Estimation Techniques and Tools", *Computer Communications*, Vol. 33, No. 1, pp. 11-22, January 2010.
3. Cesar Guerrero and Miguel A. Labrador, "A Hidden Markov Model Approach to Available Bandwidth Estimation and Monitoring," *Proceedings of IEEE International Conference on Network Protocols (ICNP), Internet Network Management (INM) Workshop*, October 2008.
4. Marco A. Alzate, Nestor M. Peña and Miguel A. Labrador, "Neuro-Fuzzy Processing of Packet Dispersion Traces for Highly-Variable Cross-Traffic Estimation", *Proceedings of PAM 2007 (poster paper)*, April 2007. Also in Springer-Verlag Lecture Notes in Computer Science, Vol. 4427, pp. 218-222, 2007.

5. Cesar D. Guerrero and Miguel A. Labrador, “Experimental and Analytical Evaluation of Available Bandwidth Estimation Tools”, *Proceedings of the First IEEE LCN Workshop on Network Measurements*, pp. 710-717, Tampa, FL, November 2006.

**Active Queue Management and Packet Dropping Policies for IP and ATM Networks:**

1. Sivakumar Bakthavachalu and Miguel A. Labrador, “TFRC Friendliness and the Case of ECN”, *International Journal of Communication Systems*, Vol. 17, No. 8, pp. 763-778, October 2004.
2. Gwyn Chatranon, Miguel A. Labrador, and Sujata Banerjee, “A Survey on TCP-friendly Router-based AQM Schemes”, *Computer Communications Journal*, Vol. 27, Issue 15, pp. 1424-1440, August 2004.
3. Miguel A. Labrador and Sujata Banerjee, “Performance Analysis of Generalized Selective Packet Discarding Schemes”, *Telecommunications Systems Journal*, Vol. 21, No. 1, pp. 87-101, September 2002.
4. Miguel A. Labrador and Sujata Banerjee, “Packet Dropping Policies for ATM and IP Networks”, *IEEE Communications Surveys Journal*, Third Quarter 1999. Also, invited extended abstract in *IEICE Transactions on Communications*, Vol. E83-B, No. 2, February 2000.
5. Gwyn Chatranon, Miguel A. Labrador, and Sujata Banerjee, “A Credit-based AQM Mechanism to Achieve Fairness in the Internet”, *Proceedings of IFIP Networking 2005*, May 2005 (acceptance rate < 25%). Also in Springer-Verlag Berlin Lecture Notes in Computer Science, Vol. 3462, pp. 930-942, 2005.
6. Gwyn Chatranon, Miguel A. Labrador, and Sujata Banerjee, “Fairness of AQM Schemes for TCP-friendly Traffic”, *Proceedings of IEEE Globecom 2004*, pp. 725-731, Texas, November 2004.
7. Gwyn Chatranon, Miguel A. Labrador, and Sujata Banerjee, “BLACK: Detection and Preferential Dropping of High Bandwidth Unresponsive Flows”, *Proceedings of IEEE ICC 2003*, pp. 664-668, Anchorage, Alaska, May 2003.
8. Miguel A. Labrador and Sujata Banerjee, “Support for Predictability and Relative Service Differentiation using Selective Packet Dropping”, *Proceedings of IEEE Globecom 2000*, pp. 626–630, San Francisco, November 2000.
9. Miguel A. Labrador and Sujata Banerjee, “Performance of Selective Packet Dropping Policies in Heterogeneous Networks”, *Proceedings of IEEE ICC 2000*, pp. 470–474, New Orleans, June 2000.
10. Peerapon Siripongwutikorn, Miguel A. Labrador, and Taieb F. Znati, “A Wireless-Aware Packet Dropping Policy for ATM Networks”, *Proceedings of the Communication Networks and Distributed Systems Modeling and Simulation Conference (CNDS)*, (CD Proceedings), San Diego, January 2000.
11. Miguel A. Labrador and Sujata Banerjee, “Performance of Selective Packet Dropping Schemes in Multi-hop Networks”, *Proceedings of the IEEE Globecom*, pp. 1604–1609, Rio de Janeiro, Brazil, December 1999.
12. Miguel A. Labrador and Sujata Banerjee, “Enhancing Application Throughput by Selective Packet Dropping”, *Proceedings of the IEEE ICC*, pp. 1217–1222, Vancouver, Canada, June 1999. (Recipient of the 1999 SIS Robert R. Korfhage Award.)
13. Sujata Banerjee, P. Siripongwutikorn, Miguel A. Labrador, V. Pendyala, and J. Ngamvirojcharoen, “Performance-Based QoS Mapping Algorithms in ATM Networks”, *Proceedings of the 4th INFORMS Telecommunications Conference*, (CD Proceedings), Boca Raton, FL, March 1998.

## Others:

1. Francisco Ortin, Miguel A. Labrador, Jose M. Redondo, “A hybrid class- and prototype-based object model to support language-neutral structural intercession”, *Information and Software Technology*, 56 (2), pp. 199–219, 2014.
2. Miguel A. Labrador and Nestor Peña, “Guest Editorial,” *IEEE Latin America Transactions*, Special Issue IEEE Latincom 2011.
2. Jose Aguilar and Miguel A. Labrador, “Un Algoritmo de Enrutamiento Distribuido para Redes de Comunicación basado en Sistemas de Hormigas” (“A General Combinatorial Ant System-based Distributed Routing Algorithm for Communication Networks”), *IEEE Latin America Transactions*, Vol. 5, No. 8, December 2007.
3. José Aguilar and Miguel A. Labrador, “Algoritmo de Enrutamiento Distribuido para Redes Inalámbricas”, *Gerencia Tecnológica Informática: (Informatics Technology Management)*, Vol. 4, No. 8, pp. 21-28, ITI, Colombia, June 2005, (<http://www.iticol.org/>).
4. Ala Al-Fuqaha, Ghulam Chaudhy, Mohsen Guizani and Miguel A. Labrador, “Routing Framework for All-Optical DWDM Metro and Long-Haul Transport Networks with Sparse Wavelength Conversion Capabilities”, *IEEE Journal of Selected Areas in Communications (JSAC)*, Vol. 22, No. 8, pp. 1443-1459, October 2004.
5. 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.
6. Oscar Lara and Miguel A. Labrador, “A Multiobjective Ant Colony-based Optimization Algorithm for the Bin Packing Problem with Load Balancing,” *Proceedings of IEEE World Congress on Computational Intelligence*, July 2010.
7. Dave Armitage, Dmitry Kalyadin, Miguel A. Labrador, and Robin Murphy, “Video and Biohazard Monitoring of Sites During Incidents”, *Proceedings of Sharing Solutions for Emergencies and Hazardous Environments (SSFEHE) Conference*, Salt Lake, Utah, February 2006.
8. José Aguilar and Miguel A. Labrador, “A Fault Tolerant Distributed Routing Algorithm based on Combinatorial Ant Systems”, *Proceedings of the 2005 International Conference on Intelligent Computing (ICIC 2005)*, Hefei, China, August 23-26, 2005. Also in Springer-Verlag Lecture Notes in Computer Science, Vol. 3644, pp. 514-523, 2005.
9. Ala Al-Fuqaha, Ghulam Chaudhy, Cory Beard, Miguel A. Labrador, Mohsen Guizani and Ibrahim Habib, “Link-State Update Policies for All-Optical DWDM Transport Networks”, *Proceedings of IEEE ICC 2004*, pp. 1831-1835, Paris, June 2004.

## Educational publications:

1. Beth Taylor and Miguel A. Labrador, “Computer Science TransfEr Programs (CSTEP): Transferring Community College Students to Four Year Universities”, Poster in *8<sup>th</sup> Annual National Institute for the Study of Transfer Students Conference*, January 27-29, 2010.
2. Michelle Kobus, Cesar Guerrero, Miguel A. Labrador, and Rafael Perez, “CSTEP: Transferring Computer Science Community College Students to Four-year Universities”, *Proceedings of ASEE*, 2009.
3. Michelle Kobus, Miguel A. Labrador and Cesar D. Guerrero, “Cut, Copy, Paste: Implementing Computer Science Transfer Programs,” *7<sup>th</sup> Annual Conference of the National Institute for the Study of Transfer Students*, (Dallas), January 21-23, 2009. (Accepted but withdrawn.)

4. Miguel A. Labrador, Michelle Kobus, and Cesar D. Guerrero, "CSTEP: Transferring Computer Science Community College Students to Four-year Universities," Black, Brown & College Bound Conference, November 20-22, 2008. Tampa, FL.
5. Michelle Kobus, Jose Galvis, Cesar Guerrero and Miguel A. Labrador, "Where have all the Tech Savvy students gone? Developing Computer Science TransfEr Programs," NASPA-FL Drive In Conference. October 3, 2008. Tampa, FL.
6. Cesar D. Guerrero, Miguel A. Labrador, and Rafael A. Perez, "REU Sites: Much More than a Research Experience for Undergraduates", *Proceedings of ASEE Annual Conference and Exposition*, March 2008.
7. Cesar D. Guerrero, Miguel A. Labrador and Rafael Perez, "Enhancing the Global Perspective of REU Site Students", *Proceedings of ASEE 2007*, June 2007.
8. Cesar D. Guerrero, Miguel A. Labrador and Rafael Perez, "Graduate Students Mentoring in REU Sites", *Proceedings of ASEE SE 2007*, April 2007.
9. Miguel A. Labrador and Rafael A. Perez, "Increasing the Participation of Under-represented Minority Student Groups in Computer Science and Engineering: An REU Site Experience", *Proceedings of ASEE Frontiers in Education 2006*, October 2006.
10. Miguel A. Labrador and Rafael A. Perez, "Fulfilling Mentors' Expectations: An REU Site Experience", *Proceedings of ASEE-SE 2006 Conference*, April 2006.
11. Mary J. Granger, Guy-Alain Amoussou, Miguel A. Labrador, Sue Perry and Kelly M. Van Busum, "Research Experience for Undergraduates: Rewarding and Fun", *Proceedings of ACM SIGCSE 2006 (Panel)*, pp. 558-559, March 2006.
12. Miguel A. Labrador, John Wolan, Grisselle Centeno, Rudyger Schlaf, Ashok Kumar, and Gray Mullins, "A Research Initiative to Close the Gap between Undergraduate and Graduate School in Engineering", *Proceedings of ASEE Frontiers in Education 2004*, Savannah, October 2004.

#### **Journal papers under review:**

1. Ponrathi Athilingam, Bradlee Jenkins, Heather Zumpano and Miguel A. Labrador, "Application of Business Model Canvas in Technology-Based Nursing Research," *Applied Nursing Research*, September 2016.
2. Diego Mendez and Miguel A. Labrador, "A Framework for Participatory Sensing Systems," *Journal of Networks*, 2014.
3. Ponrathi Athilingam, Richard E. Osorio, Howard Kaplan, Drew Oliver, Tara ONeachtain, Miguel A. Labrador and Philip J. Rogal, "Embedding Patient Education in Mobile App: Report of the Development Process," *Patient Education and Counseling Journal*, August 2014.

#### **Conference papers under review:**

1. Ravichandran Subramanian, Sudeep Sarkar and Miguel A. Labrador, SRI PEOPLE, "Continuous Active Authentication using Gait Signal from Mobile Dynamics," *IEEE International Conference on Biometrics*, September 2015.

#### **Publications in non-refereed Conferences**

1. Sean Barbeau, Edgar Banguero, Ahmad Mageed, Miguel A. Labrador, Rafael Perez, and Phil Winters, "Traveling Smart: Increasing Transit Ridership by Automatic Collection (TRAC) of Individual Travel

Behavior Data and Personalized Feedback”. Winner poster for Engineering in the Second Annual Undergraduate Research Symposium, Honors College, USF.

2. Miguel A. Labrador, “Current Approaches in Teaching Computer Networks”, first ACM SIGCOMM “Workshop on Computer Networking: Curriculum Designs and Educational Challenges” (<http://www-net.cs.umass.edu/workshop1.html>), informal white paper, August 2002.

### **Technical reports**

1. Phillip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Sean Barbeau, “Enhancing Transit Safety and Security with Wireless Detection and Communication Technologies”, FDOT BD549 RPWO # 45, December 2007.
2. Miguel A. Labrador and Cesar Guerrero, “Available Bandwidth Estimation Tool for Wireless Mobile Ad Hoc Networks“, prepared and submitted to Team TAACLAN in September 16, 2008.
3. Miguel A. Labrador, Alfredo J. Perez and Sean Barbeau, “Real-time Tracking and Bidirectional Multimedia Communication with TAACLAN Computer Users in the Field“, prepared and submitted to Team TAACLAN in September 16, 2008.
4. Phillip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Sean Barbeau, “Wi-Via: Enhancing Transportation Safety and Security via Scalable Location-based Wireless Applications”, FTA-FL-26-7102-01, July 2006.
5. Phillip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Sean Barbeau, “Traveling Smart: Increasing Transit Ridership Through Automated Collection (TRAC) of Individual Travel Behavior Data and Personalized Feedback”, NCTR 576-16, FDOT BD549-2, August 2005.
6. Phillip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Sean Barbeau, “Enhancing the Rider Experience: The Impact of Real-Time Information on Transit Ridership,” NCTR July 2005.

### **Other publications**

2. Miguel A. Labrador, “Buffer Management and Quality of Service Predictability for Best Effort Traffic”. Ph. D. Dissertation, University of Pittsburgh, 2000.
3. Miguel A. Labrador, "Design and Implementation of a General Purpose Computer". B.S. Thesis, November 1983.

### **Trademarks**

1. The Travel Assistant Device name “TAD” was granted as a Trademark by the USPTO Office on May 8, 2012. Serial number: 85072608, Docket/Reference Number: 1372.802.

### **Copyrights**

1. Multi Sensor System for Pedestrian Tracking and Activity Recognition in Indoor Environments, September 2014.
2. Step Detection and Orientation using Raw Data from Smartphones, USF Ref. No.: 14B167, December 5, 2014.

### **Licenses**

1. US Patent No. 8,045,954 “Wireless Emergency-Reporting System,” licensed to Emergence, Inc., March 2014.

2. Through the USF Division of Patents and Licensing, the Travel Assistant Device mobile application and the backend supporting system has been successfully licensed to Dajuta, Inc. (<http://dajuta.com/>). Dajuta plans to roll out the commercial service nationwide in the third quarter of 2012.

## Patents

### Granted

1. "System and Method for Rendering a Distributed Location-Aware System". U.S. Patent 9,130,995, 09/08/2015, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Alfredo Perez.
2. "System and Method for Automatically Determining Purpose Information for Travel Behavior". U.S. Patent 9,047,384, 06/02/2015, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, and Nevine Georggi.
3. "Distributed and Decentralized Location Aware Architecture". U.S. Patent 8,924,536, 12/30/2014, Sean Barbeau, Phil Winters, Rafael Perez, Nevine Georggi, Miguel A. Labrador, and Alfredo Perez.
4. "System for Pattern Recognition in Real-Time Location-Based Services Applications", U.S. Patent 8,751,162, June 10, 2014, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi, and Alfredo Perez.
5. "System and Method for Spatial Point-of-Interest Generation and Automated Trip Segmentation Using Location Data", U.S. Patent 8,843,315, September 23, 2014, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi, and Narin Persad.
6. "Architecture and Two-Layered Protocol for Real-Time Location-Aware Applications", U.S. Patent 8,725,831, May 13, 2014, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi, and Alfredo Perez.
7. "Adaptive Location Data Buffering for Location-Aware Applications", U.S. Patent 8,718,671, May 6, 2014, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, and Nevine Georggi.
8. "Using Pattern Recognition in Real-Time LBS applications", U.S. Patent 8,600,674, December 3, 2013, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, and Nevine Georggi.
9. "System and Method for Real-Time Travel Path Prediction and Automatic Incident Alerts", U.S. Patent 8,548,724, October 1, 2013. Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador and Nevine Georggi.
10. "Method for Determining Critical Points in Location Data Generated by Location-Based Applications", U.S. Patent No. 8,249,807, August 21, 2012. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador, and Nevine Georggi.
11. "Method of Providing a Destination Alert to a Transit System Rider", U.S. Patent No 8,169,342, May 01, 2012. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Dmytro Bilov.
12. "Hurricane Evacuation Zone Locator System and Method", U.S. Patent No 8,145,183, March 27, 2012. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi and Sasha Dos Santos.
13. "Device to Assist Transit Riders with Special Needs", U.S. Patent No 8,138,907, March 20, 2012. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador, and Nevine Georggi.
14. "Dynamic Ridematching Algorithm", U.S. Patent No 8,140,256, March 20, 2012. Sasha Dos-Santos, Sean Barbeau, Philip Winters, Rafael Perez, and Miguel A. Labrador.
15. "Optimizing Performance of Location Aware Applications Using State Machines," U.S. Patent No. 8,036,679, October 11, 2011. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador and Nevine Georggi.
16. "Wireless Emergency-Reporting System," US Patent No. 8,045,954, October 25, 2011. Sean Barbeau, Philip Winters, Rafael Perez, Miguel A. Labrador and Nevine Georggi.
17. "A System and Method for Transmission Control Protocol (TCP) Transmission Rate Control," U.S. Patent No. 8,036,112, October 11, 2011. Miguel A. Labrador and Sivakumar Bakthavachalu.
18. "System and Method to Assure Node Connectivity in an Ad Hoc Network", U.S. Patent No. 7,512,079, March 31, 2009. Miguel A. Labrador and Venkatesh Ramarathinam.



## **In Process**

1. Provisional Patent Application entitled “Method to Compensate for Change in Device Orientation while Comparing Sensor Data”, filed on November 21, 2014, under Application No. 62/082,769.
2. Invention Disclosure Form submitted to USF’s Division of Patents and Licensing on June 19, 2014 for “HeartMApp, An Android Application System to Help People with Congestive Heart Failure”, Miguel A. Labrador and Juan Marron. USF Ref. No. 14B116.
3. Invention Disclosure Form submitted to USF’s Division of Patents and Licensing on August 21, 2014 for “Multi Sensor System for Pedestrian Tracking and Activity Recognition in Indoor Environments”, Miguel A. Labrador, Ponrathi Athilingam, and Federico Giovannetti. USF Ref. No. 14A093.
4. Provisional patent application, “Geotella – A Distributed and Decentralized Location-Aware Architecture”, filed July 24, 2009, Serial number 61/228,376, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi, and Alfredo Perez.
5. Provisional patent application, “System and Method for Reliable Transit Stop detection and Timely Rider Notification”, filed September 22, 2008, Sean Barbeau, Phil Winters, Rafael Perez, Miguel A. Labrador, Nevine Georggi, and Dmytro Bilov.
6. Copyright on Location-Aware Java ME Software Library.
7. System and Method for Adaptive Location Data Buffering for Location-Aware Applications.
8. Utility patent application submitted by USF’s Division of Patents and Licensing to the U. S. Patent and Trademark Office on March 24, 2006 to pursue a patent for, “A System and Method for Transportation Demand Management”, Sean Barbeau, Phil Winters, Nevine Georggi, Miguel A. Labrador, and Rafael Perez. USF Ref. No.:04B083PRC.

## **Grant Proposals Funded**

1. Title: REU Site on Ubiquitous Sensing.  
Participation: PI: Dr. M. A. Labrador; Co-PI: Dr. Yu Sun.  
Agency: NSF  
Date: Four-year grant 2016-2020.  
Amount: \$439,215.  
Purpose: REU and Study Abroad Summer program.
2. Title: NSF I-Corps.  
Participation: PI: Dr. Ponrathi Athilingam; Co-PI: Dr. M. A. Labrador.  
Agency: NSF.  
Date: Mar 2016 – Sep 2016.  
Amount: \$50,000.  
Purpose: Explore the viability of commercializing the HeartMapp application.
3. Title: REU Site on Ubiquitous Sensing.  
Participation: PI: Dr. M. A. Labrador; Co-PI: Dr. Yu Sun.  
Agency: NSF  
Date: Three-year grant 2015-2017.  
Amount: \$359,367.  
Purpose: REU Summer program.

4. Title: NSF I-Corps.  
Participation: PI: Dr. M. A. Labrador.  
Agency: NSF.  
Date: Oct 2015 – March 2016.  
Amount: \$50,000.  
Purpose: Explore the viability of commercializing the Travel Assistant Device application.
  
5. Title: Global Geographic Service Area.  
Participation: PI: Dr. M. A. Labrador.  
Agency: BEST Project (Syniverse)  
Date: One-year grant 2014-2015.  
Amount: \$25,000.  
Purpose: Analyze company data and determine cellular companies service areas in a Google map for problem discovery.
  
6. Title: MANGVI: Mobile Aided Navigation and Guidance for the Visually Impaired.  
Participation: PI: Dr. M. A. Labrador.  
Agency: Charles Stark Draper Laboratory and Florida High Tech Corridor  
Date: June – December 2014.  
Amount: \$39,744.00.  
Purpose: Develop a system to help navigate visually impaired people.
  
7. Title: HeartMapp: An Android Application System to Help People with Heart Failure Conditions.  
Participation: PI: Dr. M. A. Labrador.  
Agency: Charles Stark Draper Laboratory and Florida High Tech Corridor  
Date: January-June 2014.  
Amount: \$39,351.00.  
Purpose: Develop a system to help people with heart failure conditions.
  
8. Title: Joint Physiological and Behavioral Biometrics-based Authentication from Mobile Device Dynamics  
Participation: PIs: SRI, Inc. Co-PIs: Dr. Sudeep Sarkar and Dr. M. A. Labrador.  
Agency: DARPA  
Date: One-year grant 2013-2014.  
Amount: \$161,993.  
Purpose: Develop continuous authentication system using sensor data from mobile phones.
  
9. Title: Extending Smart Home Technology: Tracking VA Patients in Outdoor Environments.  
Participation: PI: Dr. M. A. Labrador.  
Agency: VA Hospital  
Date: One-year grant 2013-2014.  
Amount: \$35,000.  
Purpose: Develop tracking outdoor system for VA patients and its integration with the indoor localization system in the VA smart home.
  
10. Title: REU Site in Ubiquitous Sensing  
Participation: PI: Dr. M. A. Labrador.; Co-PI: Dr. Rafael Perez.  
Agency: NSF  
Date: Three-year grant 2010-2013.  
Amount: \$293,471.  
Purpose: REU Summer program.

2. Title: Dynamic Travel Information – Personalized and Delivered to Your Cell Phone  
 Participation: PI: N. Georggi; Co-PI: S. Barbeau, P. Winters, Dr. M. A. Labrador.  
 Date: 2009.  
 Amount: \$150,000.  
 Purpose: Feedback essential information for traffic and navigation purposes.
  
3. Title: Travel Assistance Device – Deployment to Transit Agencies  
 Participation: PI: S. Barbeau; Co-PI: N. Georggi, P. Winters, Dr. M. A. Labrador.  
 Date: 2009.  
 Amount: \$150,000.  
 Purpose: Deploy TAD device in transit agencies around the country.
  
4. Title: Location-based Services for Real-time Tracking of Tactical Equipment and Users.  
 Participation: PI: Dr. M. A. Labrador.  
 Agency: Team TACLAN.  
 Date: 2008.  
 Amount: \$134,071.  
 Purpose: Real-time tracking of TACLAN deployable equipment and bidirectional communications with TACLAN users.
  
5. Title: Available Bandwidth Estimation Techniques for Wireless Ad Hoc Networks.  
 Participation: PI: Dr. M. A. Labrador.  
 Agency: Team TACLAN.  
 Date: 2008.  
 Amount: \$132,181.  
 Purpose: Research on available bandwidth estimation techniques and development of tools to measure it on wireless ad hoc networks.
  
6. Title: REU supplement  
 Participation: PI: Dr. M. A. Labrador  
 Agency: NSF.  
 Date: 2010.  
 Amount: \$15,875.  
 Purpose: Involve two undergraduate students in research activities.
  
7. Title: REU supplement  
 Participation: PI: Dr. M. A. Labrador  
 Agency: NSF.  
 Date: 2009.  
 Amount: \$15,875.  
 Purpose: Involve two undergraduate students in research activities.
  
8. Title: REU supplement  
 Participation: PI: Dr. M. A. Labrador  
 Agency: NSF.  
 Date: 2008.  
 Amount: \$11,700.  
 Purpose: Involve two undergraduate students in research activities.
  
9. Title: REU supplement  
 Participation: PI: Dr. M. A. Labrador  
 Agency: NSF.  
 Date: 2008.

- Amount: \$11,625.  
Purpose: Involve two undergraduate students in research activities.
10. Title: An REU Site in Computer Science and Engineering.  
Participation: PI: Dr. M. A. Labrador; Co-PI: Dr. Rafael Perez.  
Agency: NSF.  
Date: Three-year grant 2008-2010.  
Amount: \$308,056.  
Purpose: Renewal of REU Site in Computer Science and Engineering.
11. Title: BPC-DP: CSTEP: Computer Science TransfEr Programs.  
Participation: PI: Dr. M. A. Labrador; Co-PIs: Dr. R. Perez, Dr. D. Goldgof, Dr. C. Soto (Hillsborough Community College).  
Date: Three-year grant 2007-2010.  
Amount: \$592,715.  
Purpose: New programs to increase the enrollment, retention and graduation rate of students in Computer Science.
12. Title: Location-based Services for Real-time Tracking of Tactical Equipment and Users.  
Participation: PI: Dr. M. A. Labrador.  
Agency: Team TACLAN.  
Date: 2007.  
Amount: \$148,506.  
Purpose: Real-time tracking of TACLAN deployable equipment and bidirectional communications with TACLAN users.
13. Title: Available Bandwidth Estimation Techniques for Wireless Ad Hoc Networks.  
Participation: PI: Dr. M. A. Labrador.  
Agency: Team TACLAN.  
Date: 2007.  
Amount: \$131,039.  
Purpose: Research on available bandwidth estimation techniques and development of tools to measure it on wireless ad hoc networks.
14. Title: Communication System and Network Design for Unmanned Systems: A Feasibility Study for Autonomous Underwater Vehicles.  
Participation: PI: Dr. K. Valavanis; Co-PIs: Dr. M. A. Labrador, Dr. H. Arslan.  
Agency: SPAWAR.  
Date: 2007.  
Amount: \$365,000.  
Purpose: Communication system for underwater swarming.
15. Title: Networked Autonomous/Semi-Autonomous UGV-UAV Swarm Control: A Hybrid Framework for Modeling, Synthesis and Coordinated Control with Theoretic and Empirical Methods.  
Participation: PI: Dr. K. Valavanis; Co-PIs: Dr. M. A. Labrador, Dr. A. Weitzenfeld.  
Agency: SPAWAR.  
Date: 2007.  
Amount: \$138,737.  
Purpose: Investigate the use of swarming of ground and aerial vehicles.

16. Title: An Integrated Autonomous Unmanned Aerial –Unmanned Ground Vehicle System Applicable to Military and Civilian Domains.  
 Participation: PI: Dr. K. Valavanis; Co-PIs: Dr. A. Kandel, Dr. M. A. Labrador, Dr. A. Weitzenfeld.  
 Agency: SPAWAR.  
 Date: 2007.  
 Amount: \$243,754.  
 Purpose: Investigate the use of swarming of ground and aerial vehicles and landing platform for military and civilian applications.
17. Title: Addendum for Equipment Purchase for last two SPAWAR projects.  
 Participation: PI: Dr. K. Valavanis; Co-PIs: Dr. A. Kandel, Dr. M. A. Labrador.  
 Agency: SPAWAR.  
 Date: 2007.  
 Amount: \$130,000.  
 Purpose: Purchase of additional and necessary equipment for the implementation of the SPAWAR projects.
18. Title: Travel Assistant Device (TAD) to Help Transit Riders.  
 Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
 Agency: Transportation Research Board of the National Academies - Transit-IDEA (Innovations Deserving Exploratory Analysis) Program.  
 Date: 2007.  
 Amount: \$82,097.  
 Purpose: Extend capabilities of cellular system to help people with cognitive disabilities ride public transportation.  
 Comment: This is the first time this prestigious award is granted to CUTR.
19. Title: Enhancing Transit Safety and Security with Wireless Detection and Communication Technologies.  
 Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
 Agency: Florida Department of Transportation.  
 Date: 2006.  
 Amount: \$118,000.  
 Purpose: Integrate the location-aware platform that we have in CUTR with wireless sensor networks to develop an intrusion detection mechanism that reports events to appropriate personnel through the wireless cellular network.
20. Title: Smart Phone Application to Influence Travel Behavior (TRACT-IT Phase 3).  
 Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
 Agency: Florida Department of Transportation (FDOT).  
 Amount: \$125,000.  
 Date: 2006.  
 Purpose: The objective of this project is to influence travel behavior by mode, route, or time of day through the integration of traveler information. Traveler information is available through GPS, location-aware services and TRAC-IT's PDA-based travel behavior advisory system. These are being integrated into a cell phone-based system.
21. Title: Collaborative Autonomous Unmanned Aerial-Ground Vehicle Systems for Field Operations.  
 Participation: PI: Dr. K. Valavanis, Co-PIs: Dr. M. A. Labrador, Dr. W. Moreno.  
 Agency: Army Research Lab.

- Date: 2006.  
Amount: \$385,212.  
Purpose: Implementation of collaborative unmanned aerial-ground vehicles for field operations, which incorporate the use of wireless ad hoc networking technology to allow for multi-hopping capabilities and expand the area of operations.
22. Title: Travel Assistant Device (TAD) to Aid Transit Riders with Special Needs.  
Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
Agency: Florida Department of Transportation (FDOT).  
Date: 2005.  
Amount: \$87,000.  
Purpose: The objective of this project is to design a location-aware application to help people with cognitive disabilities ride on public transportation. Users equipped with GPS-enabled cellular phones will be automatically tracked and informed in real-time.
23. Title: Testing the Impact of Personalized Feedback on Household Travel Behavior (TRAC-IT Phase 2).  
Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
Agency: Florida Department of Transportation (FDOT).  
Amount: \$125,000.  
Date: 2005-2006.  
Purpose: Using the system developed in TRAC-IT I, this project includes improvements to the expert system, extensive testing and surveys and the development of the application in cellular phones.
24. Title: Development of Multidisciplinary Networked Distributed Control Instructional Materials to Support Inter Departmental Process Control Curriculum.  
Participation: PIs: Dr. W. Moreno, Dr. C. Smith and Dr. M. A. Labrador.  
Agency: USF Innovative Teaching Grants (ITG) Program.  
Amount: \$10,000.  
Date: 2005.  
Purpose: Develop new material to enhance the process control curriculum.
25. Title: REU Site: A Computer Science and Engineering REU Site for Florida, Puerto Rico and Latin America.  
Participation: PI: Dr. M. A. Labrador; Co-PI: Dr. R. Perez.  
Agency: NSF.  
Amount: \$299,368.  
Date: Three-year grant 2005-2008.  
Purpose: Bring 10 minority Hispanic students from Puerto Rico, USF and universities in Florida and Latin American countries to perform research in Computer Science and Engineering during a 10-week summer session.
26. Title: Wireless Video for Instant Access (Wi-Via) Security System.  
Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
Agency: University Consortium for Intermodal Transportation Safety and Security (UCITSS).  
Amount: \$125,000.  
Date: 2004.  
Purpose: Investigate and implement a system to increase safety and security in transportation, which utilizes the location capabilities of cellular networks.
27. Title: Faculty International Travel Grant.  
Participation: PI: Dr. M. A. Labrador.

- Agency: USF Division of Research Grants.  
Amount: \$2,375.  
Date: 2004.  
Purpose: Attend the IEEE ICC 2004 conference in Paris, France from June 20 to June 24, 2004 and present two research papers accepted for presentation and publication. Additionally, attend scheduled meetings of the IEEE Technical Committee on Computer Communications and Optical Networking.
28. Title: Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation and Control.  
Participation: PI: Dr. W. Moreno (EE Department). Co-PIs: Dr. J. Leffew and Dr. M. A. Labrador  
Agency: NSF, Pan-American Studies Institute (PASI) program.  
Amount: \$92,205.  
Date: 2003.  
Purpose: 12-day Workshop organized in Cochabamba, Bolivia from June 7th to June 19th, 2004. Seven speakers and 79 participants participated. Participants came from 37 universities, which represented 13 countries and 41 cities from the U.S. and Latin American countries. The main goal of the Institute was to promote state-of-the-art knowledge to faculty, researchers and industrial leaders of Latin American countries and the United States. An additional goal was to create a network to allow information to be disseminated from the participants to their institutions and countries. More information about this wonderful experience, participants, presentations, pictures can be found at [http://rdlabs.istec.org/modules/Conferences/2004/PASI\\_072004/index.htm](http://rdlabs.istec.org/modules/Conferences/2004/PASI_072004/index.htm).
29. Title: Enhancing the Rider Experience: The Impact of Real-Time Information on Transit Ridership (Wi-Ride).  
Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
Agency: Florida Department of Transportation (FDOT).  
Amount: \$75,000.  
Date: 2003-2004.  
Purpose: Incorporate Internet access and real-time video monitoring and security to USF Shuttle buses using wireless technology. The project will study the impact on ridership of these two new services.
30. Title: Traveling Smart: Increasing Transit Ridership by Automatic Collection of Individual Travel (TRAC-IT) Behavior Data and Personalized Feedback.  
Participation: PI: Mr. P. Winters (CUTR); Co-PIs: Dr. R. Perez and Dr. M. A. Labrador.  
Agency: Florida Department of Transportation (FDOT).  
Amount: \$100,000.00.  
Date: 2003-2004.  
Purpose: Develop an entire system to collect user travel behavior data and provide individualized feedback for making better travel choices. A PDA-based application, a wireless system, a database and one expert system were included in this project. In addition, other issues were investigated such as mapping GIS data and determining automatically the mode of transportation.
31. Title: Performance of Transport layer Protocols over Optical Networks.  
Participation: PI: Dr. M. A. Labrador.  
Agency: USF Research and Creative Scholarship Grant Program.  
Amount: \$9,250.  
Date: 2003.

- Purpose: Seed grant to study the limitations of current transport layer protocols in expected next generation networks.
32. Title: Travel grant to participate in the ACM SIGCOMM Workshop “Computer Networking: Curriculum Designs and Educational Challenges.
- Participation: PI: Dr. M. A. Labrador.
- Agency: ACM SIGCOMM.
- Amount: \$835.
- Date: 2002.
- Purpose: The goal of the workshop was to bring together faculty, from a broad spectrum of four-year colleges and universities, industry engineers and scientists, and others with an interest in education, to discuss curriculum design and teaching practices in the field of computer networks.
33. Title: The Internet Software Performance Testing (ISPT) Framework Part II: Large-Scale Wired Networks with a Wireless Last Hop.
- Participation: PI: Dr. M. A. Labrador.
- Agency: SPAWAR (U.S. Navy) through the National Institute for Systems Test and Productivity.
- Amount: \$116,867.
- Date: Two-year grant 2001-2002.
- Purpose: Investigate ways to test software applications running over wireless local area networks.

In addition to these grants, I also received two donations from Cisco Systems to set up the lab equipment needed to teach the undergraduate lab-based course in Computer Networks. As of September 2004, I have received the following:

- Received 7 routers MWR1900. Total value: \$39,844.00, December 4, 2002.
- Received 7 routers 2513, one Ethernet hub and one Ethernet switch. Estimated value: \$25,000, September 2004.

## Grant Proposals Under Consideration

1. Title: NIH Phase II program “Smartphone-based travel assistance for the cognitively impaired.
- Participation: PI: Dr. Sean Barbeau, CUTR; Co-PI: Dr. M. A. Labrador.
- Agency: NIH; Koronis Biomedical Technologies Corp.
- Amount: \$274,623.
- Date: Two-year grant 2016-2018.
- Purpose: Incorporate TAD into Koronis system and evaluate it.

## Invited Presentations

1. University of Pittsburgh, School of Information Sciences, inaugural “Alumni Insights” event. “Research and Education on Ubiquitous Sensing”, October 2015.
2. Graduate Program in Computer Science and Engineering, Pontificia Universidad Javeriana, Bogotá, Colombia, April 2013.
3. Doctoral Degree in Systems Engineering: Challenges and Opportunities, Universidad del Norte, Barranquilla, Colombia, April 2013.
4. NSF REU PI Meeting Panel on Effectively Managing Research Projects, March, 2013.



5. Lectures on Ubiquitous Sensing, doctoral program, Universidad Carlos III de Madrid, Madrid, Spain, March 2012.
6. NSF REU PI Meeting Panel on Recruiting and Diversity, February, 2012.
7. Graduate and undergraduate recruiting presentation, Universidad del Norte, Barranquilla, Colombia, September 2011.
8. Graduate recruiting presentation, Universidad Autónoma de Bucaramanga, Colombia, February 2011.
9. "Ubiquitous Sensing", Universidad del Norte, Barranquilla, Colombia, November 2010.
10. "Topology Control in Wireless Sensor Networks," half-day tutorial in IEEE Latincom 2010.
11. NSF BPC PI Meeting Panel on Community College Program and Outreach, February 1<sup>st</sup>, 2010.
12. "Wireless Sensor Networks and Digital Cities: Is This the Right Technology? Keynote speaker, IEEE LatinCom 2009, Medellin, Colombia, September 8-11, 2009.
13. "A3: A Family of Simple Topology Construction Algorithms." Two invited talks as part of a doctoral course in the department of Telematic Engineering in Universidad Carlos III, Madrid, Spain, May 2009.
14. The Travel Assistant Device: Utilizing GPS-Enabled Mobile Phones to Aid Transit Riders with Special Needs," Invited talk, Fundación ONCE, Madrid, Spain, May 2009.
15. "A3: A Topology Construction Algorithm for Wireless Sensor Networks." Invited talk, Universidad de los Andes, Bogotá, Colombia, December 2008.
16. "La Ciencia de la Computación y la Investigación Temprana." Keynote speaker, 5<sup>th</sup>. National and 2<sup>nd</sup>. International Conference on Informatics and Systems, Universidad Juárez Autónoma de Tabasco, Villahermosa, Mexico, September 24-26, 2008.
17. "A3: A Topology Control Algorithm for Wireless Sensor Networks." Wireless Seminar Series, Wireless and Microwave Center (WAMI), Electrical Engineering Department, USF, March 2008.
18. "Efficient Sink Localization in Large-Scale Wireless Sensor Networks." Wireless Seminar Series, Wireless and Microwave Center (WAMI), Electrical Engineering Department, USF, January 2007.
19. "Efficient Sink Localization in Large-Scale Wireless Sensor Networks." Invited speaker at Alabama State University, in Montgomery, Alabama as part of the NSF Historically Black Colleges and Universities- Undergraduate Program, November 9<sup>th</sup>, 2006.
20. "Large-scale Wireless Sensor Networks." Invited speaker in Congreso Nacional de Tecnologías en Redes y Telemática 2006 (2006 Colombian National Congress on Networking Technology), Cartagena, Colombia, October 5-7, 2006.
21. "International Workshop on Wireless Sensor Networks", organized by the Department of Electronic Engineering, University of Antioquia, Colombia, the Departments of Electrical Engineering and Computer Science and Engineering, University of South Florida, and the sponsorship of the Ibero American Science and Technology Education Consortium (ISTEC), Medellín, Colombia, October 2-4, 2006.
22. "The Anchor Location Service (ALS) Protocol for Large-scale Wireless Sensor Networks". Invited speaker at Universidad de los Andes, Bogota, Colombia, August 8-12, 2006.
23. Invited by the Universidad de los Andes in Colombia (best private university in Colombia) to speak about the College of Engineering, the Department of Computer Science and Engineering at USF, and my research activities in Computer Networks, August 8-12, 2006.
24. **"The Anchor Location Service (ALS) Protocol for Large-scale Wireless Sensor Networks". Invited talk, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Barcelona, Spain, May 2006.**

25. IX Congreso Internacional de Ciencias de la Computación (9<sup>th</sup> International Congress on Computer Science), 3-hr tutorial “Wireless Ad Hoc and Sensor Networks”, Universidad de Aquino Bolivia (UDABOL), La Paz, Bolivia, October 20-23, 2004.
26. First Pan-American Advanced Studies Institutes Program (PASI) Workshop on “Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation and Control.” Four-hour presentation on Next Generation Optical Networks”, Cochabamba, Bolivia, June 19, 2004.
- 27. First University of Puerto Rico Mayaguez Workshop on Parallel and Distributed Computing. Accepted to present a talk on “Transport Layer Protocols for Grid Computing”, February 10-11, 2004.**
28. USF Association of Computer Machinery (ACM). Invited presentation about the College of Engineering Research Experience for Undergraduates Program, September 2003.
29. **Invited tutorial (4 hrs) “Next Generation Optical Networks”. Ibero-American Science and Technology Education Consortium (ISTEC) and the Universidad del Norte in Barranquilla, Colombia.** Workshop on “Information Technologies: Applications in Digital Signal Processing and Communications”, Barranquilla, Colombia, May 21-23, 2003. Workshop to promote a scheme of collaboration to promote the development of science and education in the area of signal processing and wireless communication emphasizing the creation of a team of researchers that will promote the development of this sector in the region.
30. **Invited tutorial (2 hrs) “Performance of TCP over Wireless Networks”, Ibero-American Science and Technology Education Consortium (ISTEC) and the Universidad del Norte in Barranquilla, Colombia.** Workshop on “Information Technologies: Applications in Digital Signal Processing and Communications”, Barranquilla, Colombia, May 21-23, 2003.
31. USF IEEE Computer Society. Invited speaker. “Research Opportunities in Computer Networks”, April 2003.
32. USF School of Library and Information Science. Invited lecturer. “Computer Networks and the Internet”, February 20, 2002.

## IV. SERVICE

### Professional Service Activities

#### Offices and memberships:

- NSF REU PI Meeting, organizing committee member, 2016
- Computing Research Association (CRA), Undergraduate Research Award Committee member, 2014.
- Computing Research Association (CRA), Undergraduate Research Award Committee member, 2013.
- International Advisory Board Member, Erasmus Mundus Master in Cloud Application Development (EM CLOUDev) Partnership, University of Oviedo, Cork Institute of Technology, Plymouth University, Portuguese university Infante D. Henrique, and University of Patras.
- Member of the Computing Research Association Committee on Education (CRA-E). Invited to participate in this prestigious committee to study how undergraduate education can better support computationally-oriented research. The committee consists of only 11 member of national reputation on computer science education. The term of service is one year beginning October 2011.
- Member of the IEEE Technical Committee on Computer Communications (TCCC), Ad Hoc and Sensor Networks (AHSN), Optical Networking Technical Committee (ONTC), and Communications System Integration and Modeling (CSIM) Technical Committee.
- Elected Secretary of the IEEE Technical Committee on Computer Communications (TCCC) (<http://www.comsoc.org/~tccc/>). Two-year term (December 2001 to 2003). The Committee sponsors papers, discussions, and standards on all aspects of computer-communication systems in the USA and throughout the world. This committee also cooperates with other IEEE societies and sponsors conferences and workshops in many areas of interest to all its members.

#### Editorial boards:

- *International Journal of Distributed Sensors*, Hindawi, June 2010-August 2013.
- *Computer Communications*, Elsevier Science (<http://www.elsevier.nl/locate/comcom>), Area Editor since January 2009.
- *Journal of Network and Computer Applications*, Elsevier Science ([www.elsevier.com/locate/jnca](http://www.elsevier.com/locate/jnca)) since April 2008.
- *Revista Colombiana de Computación* (Colombia's Magazine of Computer Science) (<http://www.unab.edu.co/editorialunab/revistas/rcc/editorial.htm>) since October 2004.
- *Computer Communications*, Elsevier Science (<http://www.elsevier.nl/locate/comcom>) since July 2001.

#### Editorship:

- Guest editor, *IEEE Latin America Transactions*, Special Issue on IEEE Latincom 2010.
- Lead guest editor, *Computer Communications*, Elsevier Science (<http://www.elsevier.nl/locate/comcom>) Special Issue "Advanced Location-Based Services," spring 2008.

**Conference chair:**

- Steering Committee member, 4th. International Workshop on Crowd Assisted Sensing, Pervasive Systems and Communications (CASPER), part of IEEE PerCom Conference, Hawaii, 2017.
- Steering Committee member, 3<sup>rd</sup>. International Workshop on Crowd Assisted Sensing, Pervasive Systems and Communications (CASPER), part of IEEE PerCom Conference, Sydney, Australia, 2016.
- Workshop Co-Chair, 2nd International Workshop on Crowd Assisted Sensing, Pervasive Systems and Communications (CASPER), part of IEEE PerCom Conference, St. Louis, 2015.
- Workshop Co-Chair, First International Workshop on Crowdsensing Methods, Techniques, and Applications (CROWDSENSING), part of IEEE PerCom Conference, Budapest, 2014.
- Workshop Co-Chair, 2013 IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM), Madrid, Spain.
- Technical Program Co-Chair, IEEE Latincom 2010, Bogotá, Colombia, September 2010.
- Workshop Chair, 8<sup>th</sup> International Conference on Ad-Hoc Networks and Wireless, Ad Hoc Now 2009.
- Exhibit and Sponsorship Co-Chair, 2007 IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMOB), New York, June 2007.
- Publicity Chair, IEEE International Symposium on Wireless Pervasive Computing 2007, San Juan, Puerto Rico, February 2007.
- Local arrangements Chair, IEEE LCN 2006, Tampa, FL, November 2006.
- Local arrangements Chair, 8<sup>th</sup> IEEE International Symposium on High Assurance Systems and Engineering, Tampa, FL, March 2004.
- Chair, Transport Layer Protocols over Wireless Networks Symposium, 58<sup>th</sup> IEEE Vehicular Technology Society (VTC 2003) Conference, Orlando, FL, October 4-9, 2003.

**Conference session chair:**

- IEEE Globecom 2008, chair “Coverage and Topology Control” session, December 2008.
- IEEE IPCCC 2007, chair “Sensor Networks I” session, April 2007.
- IEEE ISWPC 2007, chair “Channel Issues” session, February 2007.
- IEEE LCN 2006, chair “Optical Networking” session, November 2006.
- *First International Conference on Integrated Internet Ad Hoc and Sensor Networks (InterSense 2006)*, Nice, France, May 2006. Chair of the “Energy Efficiency” session.
- *IEEE Globecom 2001*, Quality of Service in Computer Networks Track. Chair in “QoS in Packet Switching and Packet Scheduling” and “QoS in ATM Networks” sessions.
- International Organizing Committee of the PASI Institute in Bolivia “Internship on Rapid System Prototyping Technologies with Focus on Digital Signal Processing, Artificial Neural Networks, Communications, Instrumentation and Control”, Cochabamba, Bolivia, June 19, 2004.
- *IEEE ICC 2002*, Chair in “High Speed Networks Symposium”. Chair in “Traffic Engineering 1” and “Traffic Engineering 2” sessions.
- *IEEE Globecom 2001*, Quality of Service in Computer Networks Track. Chair in “QoS in Packet Switching and Packet Scheduling” and “QoS in ATM Networks” sessions.

**Book reviewer:**

- Reviewed three chapters of the book, “Computer Networking: A Top-down Approach Featuring the Internet”, by James Kurose and Keith Ross, Addison-Wiley, January 2004.
- Reviewed four chapters of the book, “Computer Networking: A Top-down Approach Featuring the Internet”, by James Kurose and Keith Ross, Addison-Wiley, November 2003.
- Reviewed the chapter, “TCP/IP Performance over Satellite Networks” of the book, “High Performance TCP/IP Networking”, by Mahbub Hassan and Raj Jain, Prentice Hall, January 2003.

**Conference program committees:**

- *Fourth Ambient Assisted Living (AAL) Competition*, TPC member, Localization and activity recognition for AAL track, Madrid, July 11, 2014.
- *IEEE Latincom 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016* Technical Program Committee member.
- *Third International Conference on Pervasive and Embedded Computing and Communication Systems (PECCS) 2013*, Technical Program Committee member.
- *IEEE Globecom 2012, Ad Hoc and Sensor Networking Symposium*, Technical Program Committee member.
- *International Conference on Computing, Networking and Communications (ICNC) 2012*, Technical Program Committee member.
- *IEEE ICC 2012, Ad Hoc and Sensor Networking Symposium*, Technical Program Committee member.
- *IEEE Globecom 2011, Ad Hoc and Sensor Networking Symposium*, Technical Program Committee member.
- *IEEE ICC 2011, Wireless Networking Symposium*, Technical Program Committee member.
- *IEEE ICC 2010, Wireless and Mobile Networking Symposium*, Technical Program Committee member.
- *IEEE Globecom 2010, Ad Hoc and Sensor Networking Symposium*, Technical Program Committee member.
- *International Conference on Wireless Information Networks and Systems (WINSYS) 2009*, member of the international program committee.
- *IEEE ICC 2009, Wireless Networking Symposium*, Technical Program Committee member.
- *IEEE Globecom 2008, Ad Hoc, Sensor and Mesh Networking Symposium*, Technical Program Committee member.
- *First ACM International Workshop on Integrated Heterogeneous Sensor Networks (HeterSenet) 2008*, Technical Program Committee member.
- *Fourth IEEE International Workshop on Localized Communication and Topology Protocols for Ad Hoc Networks 2008 (LOCAN)*, Technical Program Committee member.
- *IEEE ICC 2008, Wireless Networking Symposium*, Technical Program Committee member.
- *3<sup>rd</sup> International Conference on Mobile Ad-Hoc and Sensor Networks (MSN) 2007*, Technical Program Committee member.
- *IEEE Globecom 2007, Ad Hoc and Sensor Networking Symposium*, Technical Program Committee member.

- *IEEE 3<sup>rd</sup>. International Workshop on Localized Communication and Topology Protocols for Ad Hoc Networks (LOCAN) 2007*, Technical Program Committee member.
- *IEEE/ACM International Conference on Distributed Computing in Sensor Systems' 2007 First International Workshop on Localized Algorithms and Protocols for Wireless Sensor Networks*. Technical Program Committee member.
- *IEEE Broadnets 2007*. Technical Program Committee member of the Optical Networking Symposium.
- *IEEE Conference on Wireless Rural and Emergency Communications 2007*. Technical Program Committee member.
- *IEEE LCN 2007*. Technical Program Committee member.
- *International Conference on Computer Communications and Networks (ICCCN)'s 1<sup>st</sup> Workshop on Networking Technology for Robotics and Applications (NeTRA)*, Hawaii, August 2007. Member of the Technical Program Committee.
- *IFIP Networking 2007*, Atlanta, Georgia, May 14-17, 2007. Member of the Technical Program Committee.
- *IEEE ICC 2007*, Glasgow, Scotland, June 2007. Member of the Technical Program Committee of the Communications QoS, Reliability and Performance Modeling Symposium.
- *IEEE LCN 2006*. Technical Program Committee member.
- *2<sup>nd</sup> International Workshop on Localized Communications and Topology Protocols for Ad hoc Networks (LOCAN) 2006*, Vancouver, Canada, October 2006. Member of the Technical Program Committee.
- *2<sup>nd</sup> International Conference on Mobile Ad-hoc and Sensor Networks (MSN) 2006*, Hong Kong, China, December 2006. Member of the Technical Program Committee.
- *11th IEEE International Conference on Emerging Technologies and Factory Automation, Track on Intelligent Sensors and Sensor Networks*, Prague, Czech Republic, September 2006. Member of the Technical Program Committee.
- *IEEE Globecom 2006*, San Francisco, November 2006. Member of the Technical Program Committee of the Control and Management of High Performance Networks Symposium.
- *CREATE-NET Pervasive Health Conference (<http://www.pervasivehealth.org/>) 2006*, Innsbruck Austria, November 2006. Member of the Technical Program Committee.
- *InterSense 2006, First International Conference on Integrated Internet Ad Hoc and Sensor Networks*, Nice, France, May 2006. Member of the Technical Program Committee.
- *IEEE ICC 2006*, Istanbul, Turkey, June 2006. Member of the Technical Program Committee of the Communications QoS, Reliability and Performance Modeling Symposium.
- *1<sup>st</sup>. WirelessCom Conference*, Maui, Hawaii, June 2005. Member of the Technical Program Committee.
- *IEEE LCN 2005*. Technical Program Committee member.
- *IEEE ICC 2005*. Member of the Technical Program Committee of the Optical Networking Symposium.
- *IEEE ICC 2005*. Member of the Technical Program Committee of the Communications QoS, Reliability and Performance Modeling Symposium.
- *17<sup>th</sup> International Conference on Parallel and Distributed Computing Systems (PDCS 2004)*. Member of the International Program Committee (IPC).
- *IEEE ICC2004*. Member of the Technical Program Committee of the High-Speed Networks and Wireless Networking Symposia.

- 16<sup>th</sup> International Conference on Parallel and Distributed Computing Systems (PDCS 2003) (<http://www.isca-hq.org/PDCS-2003-call.htm>). Member of the International Program Committee (IPC).
- 58<sup>th</sup> IEEE Vehicular Technology Society (VTC 2003) Conference. Member of the Technical Program Committee.
- IEEE Globecom 2003. Member of the Optical Networking Symposium's Technical Program Committee.
- IEEE ICC 2003. Member of the Optical Networking Symposium's Technical Program Committee.
- IEEE ICC 2002. Member of High Speed Networks Symposium's Technical Program Committee.
- IEEE Globecom 2002. Member of the Optical Networking Symposium's Technical Program Committee.
- 15<sup>th</sup> International Conference on Parallel and Distributed Computing Systems (PDCS 2002) (<http://www.isca-hq.org/PDCS-2002-call.htm>). Member of the International Program Committee (IPC).

**Proposal reviewer:**

- National Science Foundation, proposal reviewer/panelist for different programs in 2006, 2008, 2011, 2012, 2015.
- Universidad del Norte, Barranquilla, Colombia, Division of Research, proposal reviewer, October 2007.
- USF Undergraduate Research Symposium, Honors College, 2006.
- USF Undergraduate Research grants, Honors College, 2006.
- Faculty International Travel Grants, USF Division of Research Grants, March 2005.
- City University of New York Research Award Program 2005.

**Journal paper reviewer:**

- IEEE Wireless Communications Magazine
- IEEE Transactions on Wireless Communications
- IEEE Sensors Journal
- Journal of Intelligent and Robotic Systems
- Journal of Combinatorial Optimization
- Computer Communications
- IEEE Transactions on Communications
- Wireless Communications and Mobile Computing Journal, Wiley (<http://www.interscience.wiley.com>)
- IEEE Journal of Selected Areas in Communications
- International Journal of Network Management.

**Conference paper reviewer:**

- IEEE Latincom 2010, 2011, 2012.
- IEEE Globecom every year from 1999 to 2012.

- IEEE ICC every year from 2002 to 2012.
- IEEE LCN 2006
- InterSense 2006
- Networking 2006
- ISCC 2005
- International Conference on Parallel and Distributed Computing Systems (PDCS) 2002, 2003 and 2004
- Workshop on High Performance Switching and Routing (HPSR 2003).
- Many others

## University Service Activities

- Department of Computer Science and Engineering, Graduate Program Director May 2016-present.
- Department of Computer Science and Engineering, Department Chair Search Committee, 2015-2016 and 2016-2017.
- Department of Computer Science and Engineering, Faculty Evaluation Committee 2016.
- Department of Computer Science and Engineering, Infrastructure Committee, fall 2014.
- Department of Computer Science and Engineering, Graduate Program Director summer 2010- spring 2014.
- Department of Computer Science and Engineering, Chair, Graduate Program Committee, summer 2010- spring 2014.
- Department of Computer Science and Engineering, Graduate Program Committee, 2007, 2008, spring 2012, fall 2014.
- College of Engineering Scholarship Committee – spring 2011, 2012, 2013, 2014.
- USF Office of Undergraduate Research, founding member, Advisory Committee Member, Sept. 21, 2011.
- Department of Computer Science and Engineering, Faculty Evaluation Committee – spring 2009, 2010, 2011.
- Department of Computer Science and Engineering, Tenure and Promotion Committee – spring 2010.
- Department of Computer Science and Engineering, Awards Committee – spring 2010, 2011, 2012, 2013, 2014.
- Department of Computer Science and Engineering, Faculty Search Committee – Bioinformatics, 2008-2009.
- Department of Computer Science and Engineering, Faculty Search Committee – Robotics, 2008-2009.
- Department of Computer Science and Engineering, Faculty Search Committee, 2007-2008.
- Department of Computer Science and Engineering, Tenure and Promotion Committee, 2007-2008.
- USF Graduate School, Office of Diverse Student Success, **Graduate Diversity Advisory Council member** since April 2006.
- **USF Undergraduate Research Advisory Board member** since August 2005.
- Review Panelist Faculty International Travel Grants, USF Division of Research Grants, March 2005.



- **Director of the Research Experience for Undergraduates Program** (<http://www2.eng.usf.edu/reu/>) **for the Department of the Computer Science and Engineering** since the program's creation in spring 2002. This initiative is meant to involve undergraduate students in research activities and provide them with a better and more integral education. The program includes state of the art topics and technology along with research tools and experience to pursue higher level studies.
- USF Commencement and Convocations Committee, 2004-2007.
- Department of Computer Science and Engineering, Graduate Research Award Committee, 2005/2006.
- Department of Computer Science and Engineering, Faculty Search Committee, 2003/2004.
- Department of Computer Science and Engineering, Undergraduate Program Committee, 2003/2004.
- Department of Computer Science and Engineering, Chair of the Scholarship Committee, 2002/2003.
- Department of Computer Science and Engineering, member of the Technical Support, Lab equipment Committee, 2001/2002 and 2002/2003.
- Department of Computer Science and Engineering, Chair of the Scholarship Committee, 2001/2002.
- Department of Computer Science and Engineering, graduation representative, 2001/2002.

### **Community Service Activities**

- Participated in the Engineering Expo 2009 with a demonstration of Wireless Sensor Networks and Location-based Services.
- Joined Advisory Board to found New Springs School, a new charter school with focus on Mathematics, Science and Reading in Hillsborough County, August 2006.
- Judge in the Third Annual USF Research Experience for Undergraduate Symposium, April 2005.
- Second College of Engineering Research Experience for Undergraduate Symposium, April 2004.
- Judge and part of the organizing committee of the First College of Engineering Research Experience for Undergraduate Symposium, April 2003.
- Judge in the Florida Georgia Louis Stokes Alliance for Minority Participation's (FGLSAMP) 10<sup>th</sup> Annual Expo, February 2003.