

## Biographical Sketch: M. Rocio Alba-Flores, Ph.D.

Associate Professor, Department of Electrical Engineering, Georgia Southern University, Statesboro, GA 30460, Office phone: (912) 478-5103, Email: ralba@georgiasouthern.edu

### PROFESSIONAL PREPARATION

National Polytechnic Institute, Mexico City, Electronics and Communications, B.S., May 1978  
National Institute of Astrophysics, Optics and Electronics, Puebla, Mexico, Electronics, M.S., July 1980  
Tulane University, New Orleans, LA, USA, Electrical Engineering, M.S., May 1998  
Tulane University, New Orleans, LA, USA, Electrical Engineering, Ph.D., Dec. 1999

### PROFESSIONAL APPOINTMENTS

- Associate Professor, Mechanical and Electrical Engineering Department, Georgia Southern University, Statesboro, GA, USA, Aug. 2014 – present
- Assistant Professor, Mechanical and Electrical Engineering Department, Georgia Southern University, Statesboro, GA, USA, Aug. 2008 – July 2014
- Assistant Professor and Electromechanical Program Coordinator, Electrical Engineering Technology Department, State University of New York, Alfred, NY, USA, Aug. 2006 – May 2008
- Assistant Professor, Electrical and Computer Engineering Department, University of Minnesota Duluth, Duluth, MN, USA, Aug. 2002 – May 2006
- Visiting Professor, Electrical and Computer Engineering Department, University of Minnesota Duluth, Duluth, MN, USA, Aug. 2000 – May 2002
- Visiting Professor, Engineering Department, Trinity College, Hartford, CT, USA, Aug. 1999 – May 2000

### RELATED PUBLICATIONS

- F. Rios-Gutierrez, and **R. Alba-Flores**, “Multidisciplinary Capstone Project for Engineering”, *Computer in Education Journal*, vol. XXII, no. 3, July-September 2012.
- **R. Alba-Flores**, F. Rios-Gutierrez, and C. Jeanniton, “Qualitative Evaluation of a PID Controller for Autonomous Mobile Robot Navigation Implemented in an FPGA Card”, *The 7th International Conference on Natural Computation*, Shanghai, China, July 26-28, 2011. [conference proceedings]
- F. Rios-Gutierrez, and **R. Alba-Flores**, “An interdisciplinary team-based mobile robots design course for Engineering” *2011 American Society for Engineering Education, Annual Conference*, Vancouver, Canada, June 26-29, 2011. [conference proceedings]
- **R. Alba-Flores**, and Y. Al-Kalaani, "Enhancing the Learning Experience in a Multidisciplinary Engineering Technology Course", *American Society for Engineering Education, Annual Conference*, Louisville, KY, June 20-23, 2010

### OTHER SIGNIFICANT PUBLICATIONS

- S. Hickman, A. Mirzakhani, J. Pabon, and **R. Alba-Flores**, “A Case Study on Tuning Artificial Neural Networks to Recognize Signal Patterns of Hand Motions”, IEEE SoutheastCon, Fort Lauderdale, FL, April 9-12, 2015. [conference proceeding]
- S. Hickman, **R. Alba-Flores**, and M. Ahad, “EMG Based Classification of Percentage of Maximum Voluntary Contraction Using Artificial Neural Networks” IEEE Dallas Circuits and Systems Conference, Dallas TX, Oct. 12-13, 2014. [conference proceeding]

- F. Rios-Gutierrez, **R. Alba-Flores**, and G. Nordehn, "Detection and Classification of Heart Murmurs using Low frequency Vibrations, Sensors and Support Vector Machines", Annual Houston Conference on Biomedical Engineering, University of Houston, Houston, TX, Feb. 8-9, 2007.[conference proceedings]
- **R. Alba-Flores**, and Enrique Barbieri, "Steady-State Linear Quadratic Tracking Controller for Vibration Suppression", International Association of Science and Technology for Development, Control and Applications, Montreal, Quebec, Canada, May 24-26, 2006. [conference proceeding]
- **R. Alba-Flores** and E. Barbieri, "Vibration Quenching in Flexible Beams under the Infinite Horizon LQT Framework", in *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, Taipei, Taiwan, 2006. [conference proceeding]

## **SYNERGISTIC ACTIVITIES**

- Invited panelist speaker in the modules: "What is Engineering?" and "College and Engineering opportunities for women", the audience were parents of middle and high school girls, Girls Engineer It Day, Woodville-Tompkins High School, Savannah, GA, February 2013 and February 2014.
- Invited judge for robotic competitions (high school and college level). Activities include the review of technical designs, technical reports, poster and oral presentations. Recent judge participation at: (a) Best Robotics, Southern Poly State University, Marietta GA; (b) Underwater Robotic Competition (MATE ROV) Savannah, GA; (c) Firefighting Home Robot Competition, Hartford, CT.
- Invited panelist speaker to discuss "Robotics Education Achievements and Challenges", Trinity College Robotic Competition and Symposium, Hartford, CT, April 5, 2014.
- Engaged in professional societies (IEEE, ASEE, SWE) and actively participate as moderator in conferences, article reviewer for journal and conferences, and mentoring student chapters.
- STEM Outreach: Engaged in a variety of outreach activities, providing hands-on engineering related activities for K-12 students (aiming under-represented groups). Recent outreach activities include: (a) Girls Engineer It Day (GEID), annual event in Savannah GA; (b) GSU-DREAMS (Designing Engineering Science and Math Success) annual event at GSU; (c) STEM festival, annual event at GSU; (d) ArtsFest (annual event at GSU); (e) Science Olympiad, annual event at GSU; (f) visiting elementary schools (afterschool program)

## **SCIENTIFIC COLLABORATORS**

- (a) Collaborators Outside Georgia Southern University: David Ahlgren (Trinity College), David Hunt (SUNY Alfred), Shonda Bernadin (Florida State University), Enrique Barbieri (University of North Texas)
- (b) Collaborators at Georgia Southern University: Mohammad Ahad, Rami Haddad, Youakim Kalaani, Sungyun Lim, Valentin Soloiu, and Fernando Rios

## **THESIS RESEARCH DIRECTED ( Master of Science)**

- (a) Christopher Jeanniton, "Intelligent Control Techniques for Mobile Robot Navigation", May 2011
- (b) Spencer Strunic, "Analysis of Heart Sounds Using Artificial Intelligence Techniques", May 2007
- (c) Khaled Ejaz, "Detection and Classification of Four Types of Common Cardiac Murmurs", May 2005
- (d) Sumalatha Kuthadi, "Detection of Objects from High-Resolution Satellite Images", May 2005