

Warren E. Dixon

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Formal Education

<i>Clemson University</i>	Ph.D. in Electrical Engineering (EE) - August 2000
<i>University of South Carolina</i>	Master of Engineering (EE) - May 1997
<i>Clemson University</i>	Bachelors of Science (EE) - December 1994

Professional Experience

- Department of Mechanical and Aerospace Engineering – *University of Florida*, Gainesville, FL: *Professor* (2012 – present).
- Department of Mechanical and Aerospace Engineering – *University of Florida*, Gainesville, FL: *Associate Professor* (2008 – 2012).
- Department of Mechanical and Aerospace Engineering – *University of Florida*, Gainesville, FL: *Assistant Professor* (May 2004 – July 2008).
- Robotics and Energetic Machines Group – *ORNL*, Oak Ridge, TN: Eugene P. Wigner Fellow (October 2000 – October 2002) and Staff Scientist (October 2000 – May 2004).

Professional Service

Society Governance

- Elected Member IEEE Control Systems Society (CSS) Board of Governors (BOG) (2017-2020).
- Director of Operations, IEEE CSS Executive Committee of the BOG (2011-2015).
- Member, IEEE CSS Long Range Planning Committee (2014-2015).
- IEEE CSS Representative, IEEE-USA Committee on Intellectual Property (2015-present).
- Appointed Member, IEEE CSS BOG (2008).

External Advisory Functions

- Member, U.S. Air Force Scientific Advisory Board, (2013-present).
 - Chair, Science and Technology Review Committee for the Air Force Office of Scientific Research (2016).
 - Chair, Science and Technology Review Committee for the Air Force Space Vehicles Directorate (2014).
 - Member, Defense of USAF Forward Operating Bases Study (2014).
 - Member, Micro-Satellite Mission Applications Study (2013).
- Member, Defense Science Study Group, Institute for Defense Analysis (2009-2010).

Editorial Service

- Associate Editor, *IEEE Control Systems Magazine* (2016-present)
- Guest Editor, Special Issue on Extensions of Reinforcement Learning and Adaptive Control, Vol.1, Nos. 3&4, 2014, *IEEE/CAA Journal of Automatica Sinica*.

- Associate Editor, *ASME Journal of Dynamic Systems, Measurement and Control* (2010-2013).
- Associate Editor, *Automatica* (2009-present).
- Associate Editor, *International Journal of Robust and Nonlinear Control* (2009-present).
- Associate Editor, *IEEE Transactions on Systems Man and Cybernetics: Part B – Cybernetics* (2004-2012).
- Associate Editor, *Journal of Robotics* (2008-2011).
- Associate Editor, IEEE CSS Conference Editorial Board (CEB) (2008-2012).
- Associate Editor, ASME Dynamic Systems Control Division (DSCD) CEB (2008-2010).
- Associate Editor, IEEE Robotics and Automation Society (RAS) CEB (2007-2010).

Technical Committees

- Chair, IEEE CSS Technical Committee on Intelligent Control (2016-present).
- Member, IEEE Computational Intelligence Technical Committee on Adaptive Dynamic Programming and Reinforcement Learning (2013-present).
- Member, IEEE CSS Technical Committee on Intelligent Control (2006-present).
- Member, IEEE CSS Technical Committee on Nonlinear Systems and Control (2006-present).
- Member, ASME Dynamic Systems Control Division (DSCD) Mechatronics Technical Committee (2006-present).
- Member, ASME DSCD Robotics Technical Committee (RTC) (2008-present).
 - Chair, (2011-2012).
 - Co-Chair, (2010-2011).
- Chair, ASME DSCD ACC Conference Committee for the RTC (2008).

Review Panels

- Chair, American Automatic Control Council O. Hugo Schuck Award Committee (2016).
- Reviewer, U.S. Air Force Office of Scientific Research (2010-2012, 2015, 2016).
- Member, American Automatic Control Council Donald P. Eckman Award Committee (2010).
- Reviewer, University of Florida Planning Grants for Collaborative Research Projects review (2009).
- Member, Best Student Paper Award Panel, *IEEE Conference on Decision and Control*, 2006.
- Member, National Science Foundation Panel review (2006 – 2010, 2012, 2013).
- Reviewer, U.S. Army Research Office (2008).
- Reviewer, University of Florida Research Opportunity Incentive Seed Fund (2005).
- Reviewer, Singapore Science & Engineering Research Council (2005, 2006, 2010).
- Reviewer, Lab director's R&D seed money proposal for ORNL (2001, 2002).

Conference Organizing Committee

- Workshops Chair, *IEEE Conference on Decision and Control (CDC)*, Miami FL (2017).
- Finance Chair, *IEEE Conference on Decision and Control (CDC)*, Florence, Italy (2013).
- Workshops Chair, *IEEE Conference on Decision and Control (CDC)*, Maui, Hawaii (2012).
- Publicity Co-Chair, *International Conference on Control, Automation, Robotics and Vision (ICARCV 2012)*, Shenzhen, China (2012).
- Workshops Chair, *IEEE Conference on Decision and Control (CDC)*, Orlando, FL (2011).

- Invited Session Chair (North America), *IEEE International Conference on Robotics, Automation and Mechatronics (RAM)*, Qingdao, China (2011).
- Program Chair, *IEEE International Symposium on Intelligent Control (ISIC)*, Yokohama, Japan (2010).
- Best Student Paper Award Subcommittee Chair, *IEEE Multi-Conference on Systems and Control (MSC)*, Yokohama, Japan (2010).
- Finance Chair, *IEEE Conference on Decision and Control (CDC)*, Atlanta, GA (2010).
- Workshops Chair, *IEEE Multi-Conference on Systems and Control (MSC)*, St. Petersburg, Russia (2009).
- Invited Session Chair, *IEEE International Symposium on Intelligent Control (ISIC)*, San Antonio, Texas (2008).
- Vice Chair: Special Tracks, *IEEE International Symposium on Intelligent Control (ISIC)*, Suntec City, Singapore (2007).
- *Florida Conference on Recent Advances in Robotics (FCRAR)*, Gainesville, Florida (2005).

International Program Committee Member (Associate Editor)

- *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): Workshop on Visual Control of Mobile Robots*, San Francisco, CA (2011).
- *IEEE Chinese Control and Decision Conference (CCDC)*, Mianyang, China (2011).
- *IEEE International Conference on Advanced Robotics (ICAR)*, Tallinn, Estonia, (2011).
- *IEEE International Conference on Intelligent Robots and Systems (IROS)*, Taipei, Taiwan (2010).
- *IEEE World Congress on Intelligent Control and Automation (WCICA)*, Jinan, China (2010).
- *IEEE Mediterranean Conference on Control and Automation (MED)*, Marrakech, Morocco (2010).
- *IEEE International Conference on Systems, Man and Cybernetics (SMC)*, San Antonio, Texas (2009).
- *IFAC Symposium on Robust Control Design (ROCOND)*, Haifa, Israel (2009).
- *IFAC Workshop on Networked Robotics (NetRob)*, Golden, Colorado (2009).
- *IEEE International Conference on Intelligent Robots and Systems (IROS)*, St. Louis, MO (2009).
- *International Conference on Advanced Robotics (ICAR)*, Munich, Germany (2009).
- *IEEE Conference on Control Applications (CCA)*, St. Petersburg, Russia (2009).
- *IEEE Conference on Decision and Control (CDC)*, Shanghai, China (2009).
- *IEEE International Conference on Robotics and Automation (ICRA)*, Associate Editor for Invited Sessions, Kobe, Japan (2009).
- *IEEE Mediterranean Conference on Control and Automation (MED)*, Thessaloniki, Greece (2009).
- *IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Suntec Singapore (2008).
- *IEEE International Conference on Intelligent Robots and Systems (IROS)*, Nice, France (2008).
- *IEEE Conference on Decision and Control (CDC)*, Editor for Adaptive and Mechanical Systems (50 papers), Cancun, Mexico (2008).
- *IEEE Conference on Decision and Control (CDC)*, Associate Editor for Invited Sessions. Cancun, Mexico (2008).

- *IEEE Mediterranean Conference on Control and Automation (MED)*, Ajaccio-Corsica, France (2008).
- *IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV)*, Hanoi, Vietnam (2008).
- *IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Montreal, Canada (2007).
- *3rd Workshop on Dynamic Vision, International Conference on Computer Vision*, Rio de Janeiro, Brazil (2007).
- *IEEE International Conference on Intelligent Robots and Systems (IROS)*, China (2006).
- *American Control Conference (ACC)*, Minneapolis, Minnesota (2006).
- *IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV)*, Singapore (2006).
- *IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Monterey, California (2005).
- *IEEE Conference on Control Applications (CCA)*, Taipei, Taiwan (2004).
- *IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Kobe, Japan (2003), Zürich, Switzerland (2007).
- *IEEE Conference on Decision and Control (CDC)*, Maui, Hawaii (2003).

Workshop/Invited Session/Tutorial Session/Symposium Organizer/Lecturer:

- Lecturer, Tutorial Session: *Autonomy and Machine Intelligence in Complex Systems*, American Control Conference (June 2015).
- Co-Organizer and Lecturer, One Day Workshop: *Intelligent Planning and Control: Bringing Together Adaptive Control and Reinforcement Learning for Guaranteeing Optimal Performance and Robustness*, IEEE Conference on Decision and Control (CDC), Florence, IT (December 2013).
- Co-Organizer and Lecturer, Mini-symposium: *Time Delay Systems with Applications*, SIAM Conference on Control and its Applications, San Diego, CA (July 2013).
- Co-Organizer and Lecturer, Tutorial Session: *Implicit Learning Control Through a RISE Architecture: Theory and Applications*, IEEE International Symposium on Intelligent Control (ISIC), part of the Multi-conference on Systems and Control (MSC), Yokohama, Japan (September 2010).
- Organizer and Lecturer, Invited Session: *Current Topics Vision-Based Control*, IEEE International Symposium on Intelligent Control (ISIC), part of the Multi-conference on Systems and Control (MSC), San Antonio, TX (September 2008).
- Organizer and Lecturer, One Day Workshop: *Non-Model Based Intelligent Control of Engineering Systems*, IEEE Conference on Decision and Control (CDC), New Orleans, LA (December 2007).

University Service

- Member, University Minority Mentor Program (UMMP), (July 2007 - 2011).

College of Engineering Service

- Member, Search Committee for Associate Dean for Research and Facilities (2015).
- Director, Florida Institute on National Security, University of Florida, (2013-present).
- Member, Tenure and Promotion Committee, (2012-present).

- Developed College of Engineering Control Systems Certificate Program, (2010-present).
- Member, Planning Grant Pre-Proposal Review Committee (2009).

Department Service

- Member, Tenure and Promotion Committee, (2014-present).
- Member, Graduate Student Recruitment Committee (2007 - 2014).
- Chair, Department Seminar Committee (2007 - 2009).
- Member, Faculty Search Committee, (Jan. 2005- May 2007, Sept. 2009 – Dec. 2013, July 2016-present).

Awards

Individual

- Air Force Commander's Public Service Award (2016)
- ASME Fellow (2016)
- IEEE Fellow (2016)
- Newton C. Ebaugh Professor, Department of Mechanical and Aerospace Engineering (2015-present).
- American Automatic Control Council 2015 O. Hugo Schuck Award for best overall application paper (out of 931 total published papers) from the 2014 American Control Conference for “Stationary Cycling Induced by Switched Functional Electrical Stimulation Control,” *American Control Conference*,” along with M. Bellman, T.-H. Cheng, and R. Downey.
- University of Florida Entrepreneurship Faculty Fellow (2014-present).
- Fred Ellersick Award for Best Overall Paper in the Unclassified Technical Program of the 2013 Military Communications (MILCOM) Conference, for “Graph Matching-Based Topology Reconfiguration Algorithm for Systems of Networked Autonomous Vehicles,” along with L. Navaravong, J. Shea, and E. Pasilio (2014).
- IEEE Control Systems Society Distinguished Lecturer (2013-2016).
- College of Engineering Doctoral Dissertation Mentoring Award, University of Florida (2012-2013).
- University of Florida Research Foundation Professorship (2012-2014).
- Charles Taylor Faculty Fellow, Department of Mechanical and Aerospace Engineering (2012-2015).
- ASME Dynamics Systems and Control Division Outstanding Young Investigator Award (2011).
- Department of Mechanical and Aerospace Engineering Young Investigator Award (2010).
- Selected member of the Defense Science Study Group for the Institute for Defense Analysis with the primary function to assist the Office of the Secretary of Defense (OSD), the Joint Staff, the Unified and Specified Commands, Defense Agencies, and certain other Federal Government Agencies in addressing important and enduring issues (2010-2011).
- IEEE Systems, Man, and Cybernetics (SMC) Best Associate Editor Award (2009).
- American Automatic Control Council 2009 O. Hugo Schuck Award for best overall application paper from (879 total published papers) the 2008 American Control Conference for “Nonlinear Tracking Control of a Human Limb via Neuromuscular Electrical Stimulation,” along with K. Stegath, N. Sharma, and C. M. Gregory.

- IEEE Robotics and Automation Society (RAS) Early Academic Career Award (2006).
- NSF CAREER Award (2006).
- Elected Senior Member of IEEE (2005).
- U. S. Department of Energy Outstanding Mentor Award (2004).
- ORNL Early Career Award for Engineering Accomplishment for “innovative advancements of nonlinear Lyapunov-based control of engineering systems and exceptional early career achievements in robotics research and engineering,” (2001).
- Sigma Xi, The Scientific Research Society (2001 – present).
- ORNL Eugene P. Wigner Fellowship, (2000 – 2002).

Student Awards

- S. Obuz, Best Student Paper Award for “Unknown Time-Varying Input Delay Compensation for Neuromuscular Electrical Stimulation”, *IEEE Multi-Conference on Systems and Controls* (2015).
- R. Downey, Vodovnik Best Student Paper Award Finalist, *International Functional Electrical Stimulation Society (IFESS)* meeting (2012).
- N. Fischer, Gator Engineering Attribute in Professional Excellence (2012).
- Best Dissertation Award, University of Florida, Mechanical and Aerospace Engineering (MAE) Department:
 - R. Downey (2016), R. Kamalapurkar (2015), N. Fischer (2013), A. Dani (2012), N. Sharma (2011), P. Patre (2010).
- Graduate Student Research Award (for the top graduate researcher in the MAE Department):
 - A. Parikh (2016), R. Kamalapurkar (2014), N. Fischer (2012), S. Bhasin (2011).
- N. Sharma, *ASME Dynamic Systems and Control Conference*, Best Robotics Student Paper for “Nonlinear Control of NMES: Incorporating Fatigue and Calcium Dynamics”, 2009.
- W. Mackunis, National Research Council (NRC) Fellowship, Eglin AFB, 2009.
- P. Patre, Outstanding Academic Achievement Award for the University of Florida College of Engineering, 2008.
- N. Sharma, Finalist (one of four) for Best Student Paper Award for “Modified Neural Network-based Electrical Stimulation for Human Limb Tracking”, *IEEE Multi-Conference on Systems and Controls*, 2008.

Invited Seminars and Plenary Lectures

- **IEEE Distinguished Lecture:** “Cybernetic Cycling: A Nonlinear Switched Systems Approach to Facilitate Neurological Rehabilitation”, Iowa State University (Nov. 2016).
- **Semi-Plenary:** “Cybernetic Cycling: A Nonlinear Switched Systems Approach to Facilitate Neurological Rehabilitation”, 10th IFAC Symposium on Nonlinear Control Systems, Monterey, California, (August 2016).
- **IEEE Distinguished Lecture:** “Cybernetic Cycling: A Nonlinear Switched Systems Approach to Facilitate Neurological Rehabilitation”, IEEE Santa Clara Valley Chapter (August 2016).
- **Plenary:** Assured Autonomy for Agents in Contested Environments”, 4th Annual Meeting of the AFRL Mathematical Modeling and Optimization Institute, Eglin AFB, Shalimar Florida (2016).

- **IEEE Distinguished Lecture:** “Cybernetic Cycling: Fusing Robotics and Closed-Loop Control to Enable Rehabilitation”, Nanyang Technological University, Singapore (November 2015).
- **IEEE Distinguished Lecture:** “Concurrent Learning-Based Adaptive Dynamic Programming for Autonomous Agents”, Massachusetts Institute of Technology, Boston, Massachusetts (January 2014).
- “Concurrent Learning-Based Adaptive Dynamic Programming for Autonomous Agents”, Embry-Riddle University, Daytona Beach, Florida (October 2013).
- “Theoretical and Experimental Outcomes for Fatigue and Delay Compensation in Closed-Loop Muscle Control”, Kyoto University, Kyoto, Japan (May 2013).
- “Theoretical and Experimental Outcomes of Closed-Loop Neuromuscular Control Methods to Yield Human Limb Motion”, Center for Control Science and Technology, University of Texas, Dallas (March 2013).
- “Lyapunov-based Control of Human Skeletal Muscle”, Workshop on Vistas in Control, University of California Santa Barbara, CA (Nov. 2011).
- “Lyapunov-based Methods for System Delays and Actuator Saturation in Uncertain Nonlinear Systems”, Kirtland AFB, Albuquerque, NM (May 2011).
- “Nonlinear Control of Uncertain Fatigued Human Skeletal Muscle: Theory and Experiments” College of Engineering Controls Seminar, University of Michigan, Ann Arbor, Michigan (January 2011).
- “Lyapunov-based Control of Human Limb Motion through Neuromuscular Electrical Stimulation”, Tianjin University, China (December 2009).
- “A Homography-based Approach to Image-based Pose Estimation and Control” Nankai University, China (December 2009).
- “RISE: What role can it play in robust and adaptive control for aircraft?” NASA Dryden, Edwards AFB, Lancaster CA (September 2009).
- “Nonlinear Control of Engineering Systems”, Science for Life seminar series, Howard Hughes Medical Institute-University of Florida Science for Life Program, University of Florida, (February 2008).
- “Lyapunov-Based Control of Uncertain Nonlinear Systems”, Department of Aerospace Engineering, Texas A&M University, (May 2007).
- “Lyapunov-Based Control of Uncertain Nonlinear Systems”, Department of Mechanical Engineering, University of San Diego, (December 2006).
- “A Lyapunov-Based Approach to Control Engineering Systems,” The Center for Control, Dynamical Systems, and Computation Spring Seminar, University of California Santa Barbara, (May 2006).
- “A Lyapunov-Based Approach to Visual Servo Control,” Department of Aerospace Engineering, Texas A&M University, (April 2006).
- “A Lyapunov-Based Approach to Visual Servo Control and Path Planning,” Vision, Robotics-HCI Seminar, University of Illinois, (April 2006).
- “Lyapunov-Based Methods for Visual Servo Control Systems,” Department of Aerospace Engineering, Virginia Polytechnic Institute, (February 2006).
- “Lyapunov-Based Robotic Control Applications,” Field Robotics Community of Practice Meeting, John Deere Technology Center, Moline, Illinois, (February 2006).
- “A Lyapunov-Based Approach to Visual Servo Control and Path Planning,” Control and Dynamical Systems Seminar, California Institute of Technology, (November 2005).

- **Plenary Lecturer, IEEE International Workshop on Robot Motion and Control (ROMOCO),** Poznan, Poland, (June 2005).
- “Applications of Advanced Control Research at Oak Ridge National Laboratory,” Department of Electrical Engineering, University of Florida, (June 2003).
- “Lyapunov-Based Visual Servo Control via Homography Constructs,” Center for Intelligent Systems Spring Seminar, Department of Electrical Engineering and Computer Science, Vanderbilt University, (March 2003).
- “Monocular Visual Servo Control: A Lyapunov-Based Approach,” George W. Woodruff School of Mechanical Engineering Automation and Mechatronics Seminar, Georgia Institute of Technology, (March 2003).
- “The State of the Art in Robotics, 2002 and Beyond,” University of Florida Forum on Mechanization and Robotics for the Horticultural Crops, (February 2003).
- Invited technical advisor for sensing and robotics technology at the Robotic Citrus Harvesting Technology Forum, sponsored by the University of Florida Citrus Research and Education Foundation, (April 2002).
- “Addressing Biomedical Needs through Robotics Science and Engineering,” University of Tennessee Medical Center, Pathology Department, (February 2002).
- “Design and Control of a Meso-Scale Piezoelectric Mobility Platform,” Louisiana State University, Department of Mechanical Engineering Seminar, (September 2001).
- “Nonlinear Control of Robotic Systems,” University of Central Florida, Department of Electrical Engineering Seminar, Orlando, Florida, (April 2000).
- “Mechatronics Research,” ORNL, Robotics and Process Systems Division, Oak Ridge, Tennessee, (January 2000).

Advising/Mentoring

Former Doctoral Students

- Chair for Serhat Obuz, *Unknown Time-Varying Input Delay Compensation For Uncertain Nonlinear Systems*, Dissertation, University of Florida, 2016.
- Chair for Anup Parikh, *A Switched Systems Approach to Image-based Estimation*, Dissertation, University of Florida, 2016.
- Chair for Teng-Hu Cheng, *Lyapunov-Based Switched Systems Control*, Dissertation, University of Florida, 2015.
- Chair for Matthew Bellman, *Control of Cycling Induced by Functional Electrical Stimulation: A Switched Systems Theory Approach*, Dissertation, University of Florida, 2015.
- Chair for Ryan Downey, *Asynchronous Neuromuscular Electrical Stimulation*, Dissertation, University of Florida, 2015.
- Chair for Patrick Walters, *Guidance and Control of Marine Craft: An Adaptive Dynamic Programming Approach*, Dissertation, University of Florida, 2015.
- Chair for Justin Klotz, *Decentralized Control of Networks of Uncertain Dynamical Systems*, Dissertation, University of Florida, 2015.
- Chair for Rushikesh Kamalapurkar, *Model-Based Reinforcement Learning for Online Approximate Optimal Control*, Dissertation, University of Florida, 2014.
- Chair for Brendan Bialy, *Lyapunov-Based Control of Limit Cycle Oscillations in Uncertain Aircraft Systems*, Dissertation, University of Florida, 2014.
- Chair for Nic Fischer, *Lyapunov-Based Control of Saturated and Time-Delayed Nonlinear Systems*, Dissertation, University of Florida, 2012.

- Chair for Qiang Wang, *Lyapunov-Based Neuromuscular Electrical Stimulation Control*, Dissertation, University of Florida, 2012.
- Chair for Sankrith Subramanian, *Control Techniques in Dynamic Communication Networks*, Dissertation, University of Florida, 2012.
- Chair for Huyen Dinh, *Dynamic Neural Network-Based Robust Control Methods for Uncertain Nonlinear Systems*, Dissertation, University of Florida, 2012.
- Chair for Dohee Kim, *A Novel Integrated Spacecraft Attitude Control System Using Variable Speed Control Moment Gyroscopes: A Lyapunov-Based Approach*, Dissertation, University of Florida, 2011.
- Chair for Zhen Kan, *Potential Field-Based Decentralized Control Methods for Network Connectivity Maintenance*, Dissertation, University of Florida, 2011.
- Chair for Shubhendu Bhasin, *Reinforcement Learning and Optimal Control Methods for Uncertain Nonlinear Systems*, Dissertation, University of Florida, 2011.
- Chair for Ashwin Dani, *Lyapunov-Based Nonlinear Estimation Methods with Applications to Machine Vision*, Dissertation, University of Florida, 2011.
- Chair for Marcus Johnson, *Differential Game-Based Methods for Uncertain Continuous-Time Nonlinear Systems*, Dissertation, University of Florida, 2011.
- Chair for Siddhartha Mehta, *A Daisy-Chaining Approach for Vision-Based Control And Estimation*, Dissertation, University of Florida, 2010.
- Chair for Nitin Sharma, *Lyapunov-Based Control Methods for Neuromuscular Electrical Stimulation*, Dissertation, University of Florida, 2010.
- Chair for Zachary Wilcox, *Nonlinear Control of Linear Parameter Varying Systems With Applications to Hypersonic Vehicles*, Dissertation, University of Florida, 2010.
- Chair for Rhoe Thompson, *Haltere Mediated Flight Stabilization in Diptera: Rate Coupling, Sensory Encoding, and Control Realization*, Dissertation, University of Florida, 2009.
- Chair for Parag Patre, *Lyapunov-Based Robust and Adaptive Control of Nonlinear Systems Using a Novel Feedback Structure*, Dissertation, University of Florida, 2009.
- Chair for William Mackunis, *Nonlinear Control for Systems Containing Input Uncertainty via a Lyapunov-Based Approach*, Dissertation, University of Florida, 2009.
- Chair for Keith Dupree, *Optimal Control of Uncertain Euler-Lagrange Systems*, Dissertation, University of Florida, 2009.
- Chair for Michael Kaiser, *Vision-Based Estimation, Localization, and Control of an Unmanned Aerial Vehicle*, Dissertation, University of Florida, 2008.
- Chair for Guoqiang Hu, *Visual Servo Tracking Control via a Lyapunov-Based Approach*, Dissertation, University of Florida, 2007.
- Co-chair for Sanjay Solanki, *Development of Sensor Component for Terrain Evaluation and Obstacle Detection for an Unmanned Autonomous Vehicle*, Dissertation, University of Florida, 2007.
- Co-chair for Tom Galluzzo, *Simultaneous Planning and Control for Autonomous Ground Vehicles*, Dissertation, University of Florida, 2006.
- Co-chair for Vilas Chitrakaran, *Lyapunov-Based Nonlinear Estimation and Control Using Vision in the Loop*, Dissertation, Clemson University, 2006.
- Co-chair for Michael McIntyre, *Lyapunov Based Control of Nonlinear Mechatronic Systems*, Dissertation, Clemson University, 2006.

- Co-chair for Jinho Lee, *Design of Controllers for Improving Contour Accuracy in a High-Speed Milling Machine*, Dissertation, University of Florida, 2005.
- Co-chair for Jian Chen, *Visual Servo Control with a Monocular Camera*, Dissertation, Clemson University, 2005.
- Co-chair for Yongchun Fang, *Lyapunov-Based Control for Mechanical and Vision-Based Systems*, Dissertation, Clemson University, 2002.

Former Masters Thesis Students

- Chair for Manelle Merad, *Isometric Torque Control in Neuromuscular Electrical Stimulation with Fatigue-Induced Delay*, Thesis, University of Florida, 2014.
- Chair for Fanny Bouillon, *Measure, Modeling and Compensation of Fatigue-Induced Delay During Neuromuscular Electrical Stimulation*, Thesis, University of Florida, 2013.
- Chair for Celine Laplassotte, *Robotic Needle Insertion*, Thesis, University of Florida, 2012.
- Chair for Ganeshram Jayaraman, *Development of an FES-Based Ankle Orthosis*, Thesis, University of Florida, 2009.
- Chair for Sankrith Subramanian, *Power Control of CDMA-Based Cellular Communication Networks with Time-Varying Stochastic Channel Uncertainties*, Thesis, University of Florida, 2010.
- Chair for Keith Stegath, *Non-Isometric Neuromuscular Electrical Stimulation via Non-Model Based Nonlinear Control Methods*, Thesis, University of Florida, 2007.
- Chair for Chienhao Liang, *Lyapunov-Based Control of Systems Undergoing an Impact Collision*, Thesis, University of Florida, 2007.
- Co-Chair for Siddhartha Metha, *Development of Visual Servo Control Techniques for Robotic Citrus Harvesting*, Thesis, University of Florida, 2007.
- Chair for Charu Makkar, *Nonlinear Modeling, Identification, and Compensation for Frictional Disturbances*, Thesis, University of Florida, 2006.
- Chair for Sumit Gupta, *Lyapunov-Based Range and Motion Identification for Affine and Non-Affine 3D Vision Systems*, Thesis, University of Florida, 2006.
- Co-chair for the thesis work of Prakash Chawda, *Visual Servo Techniques for Mobile Robots and Robotic Manipulators*, Thesis, Clemson University, 2004.

Former Undergraduate Honor's Thesis Students

- Eric Gonzalez, *Influence of Varying Muscle Geometry on Neuromuscular Electrical Stimulation of Human Biceps: Testbed Design & Implementation*, Thesis, University of Florida, 2016.
- Alyssa Carraha, *Stationary Arm Cycling Induced by Functional Electrical Stimulation - Muscle Zone Characterization*, Thesis, University of Florida, 2016.
- Mark Tate, *Characterizing the Ripple in Force Output during Asynchronous and Conventional Stimulation*, Thesis, University of Florida, 2013.
- Andrew Buckspan, *Nonlinear Control of a Wind Turbine*, Thesis, University of Florida, 2011.
- Ryan Downey, *The Effect of Frequency Modulation on Stimulation Duration in Neuromuscular Electrical Stimulation*, Thesis, University of Florida, 2010.
- Nic Fisher, *Assessment of Image-Based Target Tracking Methods*, Thesis, University of Florida, 2008.

Patents

Issued

1. *Protecting Airways*
D. Bolser, W. E. Dixon, S. McCoy, and T. Pitts
US Patent 9,042,992, Issued May 26, 2015
Licensed by Assistive Airways, Inc.
2. *Passive Single Camera Imaging System for Determining Motor Vehicle Speed*
W. E. Dixon, N. Gans, and S. Gupta
US Patent No. 8,401,240, March 19, 2013.
3. *Image-Based System And Methods For Vehicle Guidance And Navigation*
K. Kaiser, N. Gans, S. Mehta, and W. E. Dixon
US Patent 8,320,616, Nov. 27, 2012.
License Optioned by Prioria Inc.

Pending

4. *Systems And Methods For Maintaining Multiple Objects Within A Camera Field-of-View*
N. Gans and W. E. Dixon
Patent Cooperation Treaty PCT/US09/52803.
5. *Systems and Methods for Estimating Pose*
S. Mehta, P. Barooah, and W. E. Dixon
U. S. Provisional Patent Application 61/357,210.
6. *Geographic Estimation System Using Arbitrary Image as Input*
H. Kim and W. E. Dixon
U. S. Provisional Patent Application 61484904.
7. *Systems and Methods for Estimating the Structure and Motion of an Object*
A. Dani, and W. E. Dixon
Licensed by Prioria Inc.
U. S. Provisional Patent Application No. 14/126,148
8. *Integrated Multi-Sensor Fruit and Vegetable Robotic Harvesting System*
T. Burks, S. Flood, M. Zingaro, G. Pugh, D. Bulanon, B. Sivaraman, W. Dixon, J. Byatt
U.S. Provisional Patent Application No. 60/944,669
9. *Closed-Loop Hybrid Orthotic System for Rehabilitation and Functional Mobility Assistance*
M. Bellman and W. Dixon
U.S. Provisional Patent Application No. PCT/US2014/71309
10. *Functional Electrical Stimulation Cycling Device for People with Impaired Mobility*
M. Bellman and W. Dixon
U.S. Provisional Patent Application No. PCT/2015/034562
11. *Mechanical Stimulation for Sleep Disordered Breathing*
D. Bolser, W. E. Dixon, S. McCoy, and T. Pitts

Publications

Edited Books

1. **W. E. Dixon**, Section Editor, *Complexity and Nonlinearity in Autonomous Robotics, Encyclopedia of Complexity and System Science*, Springer, to appear 2008.

Research Monographs

1. P. M. Patre, W. MacKunis, K. Dupree, and **W. E. Dixon**, *RISE-Based Robust and Adaptive Control of Nonlinear Systems*, Birkhäuser: Boston, under contract, to appear.
2. A. Behal, **W. E. Dixon**, B. Xian, and D. M. Dawson, *Lyapunov-Based Control of Robotic Systems*, CRC Press, 2009, ISBN: 0849370256.
3. **W. E. Dixon**, A. Behal, D. M. Dawson, and S. Nagarkatti, *Nonlinear Control of Engineering Systems: A Lyapunov-Based Approach*, Birkhäuser Boston, 2003, ISBN: 0-8176-4265-X.
4. **W. E. Dixon**, D. M. Dawson, E. Zergeroglu, and A. Behal, *Nonlinear Control of Wheeled Mobile Robots, Vol. 262 Lecture Notes in Control and Information Sciences*, Springer-Verlag London Ltd, 2000, ISBN: 1-85233-414-2.

Book Chapters

1. R. Kamalapurkar, P. Walters, and W.E. Dixon "Model-Based Reinforcement Learning for Approximate Optimal Regulation," in *Control of Complex Systems: Theory and Applications*, Edited by K. G. Vamvoudakis and S. Jagannathan, Butterworth-Heinemann: Elsevier, pp. 247-273, 2016.
2. R. Downey, R. Kamalapurkar, N. Fischer, and W. E. Dixon "Compensating for Fatigue-Induced Time-Varying Delayed Muscle Response in Neuromuscular Electrical Stimulation Control," in *Recent Results on Nonlinear Delay Control Systems: In honor of Miroslav Krstic*, Edited by I. Karafyllis, M. Malisoff, F. Mazenc, P. Pepe, Springer, pp. 143-161.
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