

## Warren E. Dixon

Mechanical and Aerospace Engineering Department  
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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: *Department Chair* (2021 – present).
- 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) Nominating Committee (2019-2020).
- Elected Member, CSS Board of Governors (BOG) (2017-2019).
- 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 (2015-2018).
- Appointed Member, IEEE CSS BOG (2008).

#### **External Advisory Functions**

- Member, U.S. Air Force Scientific Advisory Board, (2013-2016).
  - 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).
- External Reviewer, Embry-Riddle Aeronautical University - Engineering Physics Ph.D. Program

### **Editorial Service**

- Associate Editor, *IEEE Control Systems Magazine* (2016-present).
- Guest Editor, Special Issue on Assistive and Rehabilitation Robotics, *IEEE Control Systems Magazine*, 2018.
- 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* (2009-2017).
- 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 (2016-2020).
- 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**

- Member, IFAC CEP Paper Prize Committee (2021, 2018).
- Member, American Automatic Control Council Ragazzini Award Committee (2020).
- Chair, American Automatic Control Council O. Hugo Schuck Award Committee (2017-2019).
- Reviewer, U.S. Air Force Office of Scientific Research (2010-2012, 2015-2021).
- 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, 2013, 2016-2018, 2021).
- 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 (2018).
- 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)**

- (*Associate Editor at Large*) *IEEE Conference on Decision and Control (CDC)*, Melbourne, Australia (2017).
- *IEEE Conference on Control Technology and Applications (CCTA)*, Kohala Coast, HA (2017).
- *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:**

- Co-Organizer and Lecturer, One Day Workshop: *Verifiable Adaptive Control Systems and Learning Algorithms*, IEEE Conference on Decision and Control (CDC), Nice, FR (December 2019).
- Lecturer, One Day Workshop: *Parameter Convergence in Adaptive Control without Persistence of Excitation*, IEEE Conference on Decision and Control (CDC), Miami, FL (December 2018).
- Co-Organizer: *Analysis, Design, and Control of Systems in Neuroscience I*, American Control Conference (June 2019).
- Co-Organizer: *Analysis, Design, and Control of Systems in Neuroscience II*, American Control Conference (June 2019).
- 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, Graduate Council, (Sept. 2017-Sept. 2020).
- Member, University Minority Mentor Program (UMMP), (July 2007 - 2011).

### **College of Engineering Service**

- Member, Research Advancement Committee (2019-2020).
- Member, Industrial Engineering Search Committee (2019).
- 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, (2012-2017).
- Developed College of Engineering Control Systems Certificate Program, (2010-present).
- Member, Planning Grant Pre-Proposal Review Committee (2009).

### **Department Service**

- Co-Chair, Tenure and Promotion Committee, (2020).
- Group Lead, Dynamic, Systems, and Control Group (2016-2020).
- Member, Administrative Team (2016-2020).
- 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 2016-2018).

### **Awards**

#### **Individual**

- Dean's Leadership Professorship (2021).
- IFAC Cyber Physical Human Systems 2020 Best Paper Award for "Admittance Control of a Teleoperated Motorized Functional Electrical Stimulation Rehabilitation Cycle," along with Kimberly Stubbs and Brendon Allen (2020).
- Distinguished Member, IEEE Control Systems Society (2020).

- IEEE Control Systems Technology Award (2019).
- UF Preeminence Professorship (2017-2019).
- College of Engineering Doctoral Dissertation Mentoring Award, University of Florida (2017-2018 & 2012-2013).
- Air Force Commander's Public Service Award (2016).
- ASME Fellow (2016).
- IEEE Fellow (2016).
- Newton C. Ebaugh Professor (2015-2021).
- 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. Pasiliao (2014).
- IEEE Control Systems Society Distinguished Lecturer (2013-2018).
- 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** (excludes fellowships such as NSF, NDSEG, NRC, etc).

- V. Duenas, R. Downey, Vodovnik Best Student Paper Award Winner (3<sup>rd</sup> Place), *International Functional Electrical Stimulation Society (IFESS)* meeting (2016).
- 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:
  - C. Cousin (2019), V. Duenas (2018), A. Parikh (2017), R. Downey (2016), R. Kamalapurkar (2015), N. Fischer (2013), A. Dani (2012), N. Sharma (2011), P. Patre (2010).
- Graduate Student Research Award
  - P. Deptula (2019), C. Cousin (2018), I. Chakraborty (2017), 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.
- 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**

- Invited Seminar, “Intermittent Image based feedback,” Conference on Control Technology and Applications(CCTA) Workshop entitled The Confluence of Vision and Control, virtual (August 08, 2021).
- Invited Seminar, “Assured Autonomy: Uncertainty, Optimality, and Data Intermittency,” Office of the Under Secretary of Defense (Research and Engineering), DoD Basic Research Forum, Virtual. (February 25, 2021).
- Invited Talk, “Multiple Timescale Deep Learning,” Workshop: Uncertainty Management and Machine Learning in Engineering Applications, Virtual. (November 16-17 2020).
- Keynote Talk, “The Intermittent Joy of Intermittent Feedback,” International Symposium on Test Automation and Instrumentation (ISTAI 2020) Xining, China (Dec. 2020).
- Plenary Talk, “The Intermittent Joy of Intermittent Feedback,” 16th International Conference on Control, Automation, Robotics and Vision (ICARCV 2020) Shenzhen, China (Dec. 2020).
- Keynote Talk, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods” 2020 Mechatronics Conference and Workshops, Stillwater, OK (October 2020).
- Invited Seminar, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods,” University of Texas Arlington. (September 2020).
- Keynote Talk, “The Intermittent Joy of Intermittent Feedback” Southeast Robotics Symposium, Atlanta Georgia. (October 2019).

- Keynote Talk, “Closed-loop FES Cycling” Lyon Cyber Bike 2019, Lyon, France. (September 2019).
- Invited seminar, “Control of Uncertain Autonomous Systems with Intermittent Feedback,” University of South Florida, Tampa, Florida. (April 2019).
- Invited seminar, “Opportunities for computational reductions, faster learning, and solutions for more complex ADP problems”, ARO workshop on Distributed Reinforcement Learning and Reinforcement Learning Games, College Park, Maryland (April 2019).
- Invited seminar, “Control of Uncertain Autonomous Systems with Intermittent Feedback,” Lockheed Martin, Orlando, Florida. (February 2019).
- Invited seminar, “Control of Uncertain Autonomous Systems with Intermittent Feedback,” University of Texas Austin, Austin, Texas. (February 2019).
- Invited seminar, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods,” University of Central Florida, Orlando, Florida. (November 2018).
- IEEE Distinguished Lecture, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods,” Villanova University, Philadelphia, Pennsylvania. (October 2018).
- IEEE Distinguished Lecture “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods,” Temple University, Philadelphia, Pennsylvania. (October 2018).
- Keynote Talk, “Autonomous Systems with Intermittent/ Limited Image-Based Feedback” IEEE ECTM, Cuenca, Ecuador (October 2018).
- IEEE Distinguished Lecture, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods,” Escuela Superior Politécnica del Litoral, Guayaquil, Ecuador. (October 2018).
- Keynote Talk, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods” Chinese Control and Decision Conference (CCDC), Shenyang, China (June 2018).
- Invited seminar, “Networked Autonomous Systems: Connectivity, Scalability and Intermittency” Northeastern University, Shenyang, China (June 2018).
- Keynote Talk, “Closed-loop Control of Man and Machine: Insights from Nonlinear, Adaptive, and Switched System Methods” IEEE International Conference on Control and Automation, Anchorage, Alaska (June 2018).
- Invited seminar, “Cyber Human Interaction: A Control Systems/Robotics Perspective on Functional Electrical Stimulation” Institute for Robotics and Intelligent Machines, Georgia Tech, Atlanta, Georgia (October 2017).
- IEEE Distinguished Lecture, “Autonomous Systems with Intermittent/ Limited Image-Based Feedback,” Zhejiang University (Apr. 2017).
- Invited seminar, “Feedback Control Advancements in Functional Electrical Stimulation: Cybernetics for Individuals with Neurological Conditions” Duke University, (March 2017).
- Webinar Speaker, “Cybernetic Cycling: A Nonlinear Switched Systems Approach to Facilitate Neurological Rehabilitation”, Control Systems Forum, Missouri University of Science and Technology, (Dec. 2016).
- 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”, 4<sup>th</sup> 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).
- Invited seminar, “Concurrent Learning-Based Adaptive Dynamic Programming for Autonomous Agents”, Embry-Riddle University, Daytona Beach, Florida (October 2013).
- Invited seminar, “Theoretical and Experimental Outcomes for Fatigue and Delay Compensation in Closed-Loop Muscle Control”, Kyoto University, Kyoto, Japan (May 2013).
- Invited seminar, “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).
- Invited seminar, “Lyapunov-based Control of Human Skeletal Muscle”, Workshop on Vistas in Control, University of California Santa Barbara, CA (Nov. 2011).
- Invited seminar, “Lyapunov-based Methods for System Delays and Actuator Saturation in Uncertain Nonlinear Systems”, Kirtland AFB, Albuquerque, NM (May 2011).
- Invited seminar, “Nonlinear Control of Uncertain Fatigued Human Skeletal Muscle: Theory and Experiments” College of Engineering Controls Seminar, University of Michigan, Ann Arbor, Michigan (January 2011).
- Invited seminar, “Lyapunov-based Control of Human Limb Motion through Neuromuscular Electrical Stimulation”, Tianjin University, China (December 2009).
- Invited seminar, “A Homography-based Approach to Image-based Pose Estimation and Control” Nankai University, China (December 2009).
- Invited seminar, “RISE: What role can it play in robust and adaptive control for aircraft?” NASA Dryden, Edwards AFB, Lancaster CA (September 2009).
- Invited seminar, “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).
- Invited seminar, “Lyapunov-Based Control of Uncertain Nonlinear Systems”, Department of Aerospace Engineering, Texas A&M University, (May 2007).
- Invited seminar, “Lyapunov-Based Control of Uncertain Nonlinear Systems”, Department of Mechanical Engineering, University of San Diego, (December 2006).
- Invited seminar, “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).

- Invited seminar, “A Lyapunov-Based Approach to Visual Servo Control,” Department of Aerospace Engineering, Texas A&M University, (April 2006).
- Invited seminar, “A Lyapunov-Based Approach to Visual Servo Control and Path Planning,” Vision, Robotics-HCI Seminar, University of Illinois, (April 2006).
- Invited seminar, “Lyapunov-Based Methods for Visual Servo Control Systems,” Department of Aerospace Engineering, Virginia Polytechnic Institute, (February 2006).
- Invited seminar, “Lyapunov-Based Robotic Control Applications,” Field Robotics Community of Practice Meeting, John Deere Technology Center, Moline, Illinois, (February 2006).
- Invited seminar, “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).
- Invited seminar, “Applications of Advanced Control Research at Oak Ridge National Laboratory,” Department of Electrical Engineering, University of Florida, (June 2003).
- Invited seminar, “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).
- Invited seminar, “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).
- Invited seminar, “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).
- Invited seminar, “Addressing Biomedical Needs through Robotics Science and Engineering,” University of Tennessee Medical Center, Pathology Department, (February 2002).
- Invited seminar, “Design and Control of a Meso-Scale Piezoelectric Mobility Platform,” Louisiana State University, Department of Mechanical Engineering Seminar, (September 2001).
- Invited seminar, “Nonlinear Control of Robotic Systems,” University of Central Florida, Department of Electrical Engineering Seminar, Orlando, Florida, (April 2000).
- Invited seminar, “Mechatronics Research,” ORNL, Robotics and Process Systems Division, Oak Ridge, Tennessee, (January 2000).

## **Patents**

### Issued

1. *Functional Electrical Stimulation Cycling Device for People with Impaired Mobility*  
M. Bellman and W. Dixon  
U.S. Patent 10,537,733B2, Jan. 21, 2020.
2. *Closed-Loop Hybrid Orthotic System for Rehabilitation and Functional Mobility Assistance*  
M. Bellman and W. Dixon

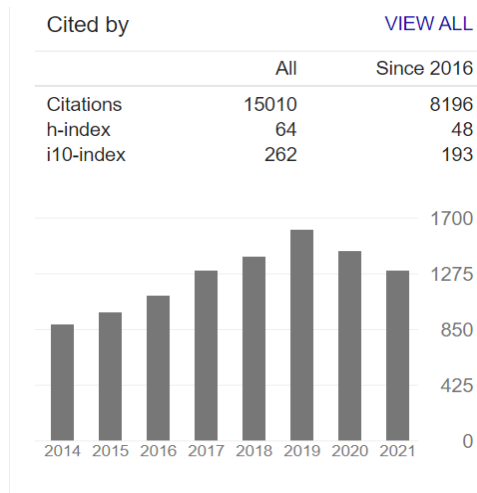
- U.S. Patent 15,105,149, Dec. 24, 2019.
3. *Systems and Methods for Estimating the Geographic Location at which Image Data was Captured*  
H. Kim and W. E. Dixon  
U. S. Patent 9,501,699B2, October 17, 2019.
  4. *Systems And Methods For Maintaining Multiple Objects Within A Camera Field-of-View*  
N. Gans and W. E. Dixon  
U. S. Patent 9,288,449B2. March 15, 2016.
  5. *Systems and Methods for Estimating Pose*  
S. Mehta, P. Barooah, and W. E. Dixon  
US Patent 9,213,938, Dec. 15, 2015.
  6. *Systems and Methods for Estimating the Structure and Motion of an Object*  
A. Dani and W. E. Dixon  
US Patent 9,179,047 Nov. 3, 2015.
  7. *Protecting Airways*  
D. Bolser, W. E. Dixon, S. McCoy, and T. Pitts  
US Patent 9,042,992, May 26, 2015
  8. *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.
  9. *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.

Pending

10. *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
11. *Reducing apnea or snoring using afferent stimulation*  
T. Pitts, D. Bolser, and W. E. Dixon  
U.S. Provisional Patent Application No. PCT/US2015/030589

## Publications

### Google Scholar Citation Metrics



Google scholar citation metrics are used to capture citations of research monographs and to capture citations of IEEE conference papers, which are peer-reviewed publications that are archived via IEEE Xplore and are highly cited as a means to convey more current research than journal publications: journal publications are still considered the gold standard publication in my community.

### Edited Books

1. W. E. Dixon, Section Editor, *Complexity and Nonlinearity in Autonomous Robotics*, *Encyclopedia of Complexity and System Science*, Springer, 2009, ISBN: 978-0-387-75888-6.

### Research Monographs

1. R. Kamalapurkar, P. S. Walters, J. A. Rosenfeld, W. E. Dixon, *Reinforcement Learning for Optimal Feedback Control: A Lyapunov-based Approach*, Springer, 2018, ISBN 978-3-319-78384-0.
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. M. L. Greene, P. Deptula, R. Kamalapurkar, and W. E. Dixon, "Mixed Density Methods for Approximate Dynamic Programming" in *Handbook of Reinforcement Learning and Control*, Edited by K. G. Vamvoudakis, Y. Wan, F. L. Lewis, and D. Cansever, Springer International Publishing, pp. 139–172, 2021.
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### Conference Papers

1. F. M. Zegers, D. P. Guralnik, and W. E. Dixon, "Event/Self-Triggered Multi-Agent System Rendezvous with Graph Maintenance," *IEEE Conference on Decision and Control*, to appear, December 2021.
2. E. Griffis, D. Le, K. Stubbs, and W. E. Dixon, "Closed-Loop Deep Neural Network-Based FES Control for Human Limb Tracking," *IEEE Conference on Decision and Control*, to appear, December 2021.
3. A. Kanellopoulos, F. Fotiadis, C. Sun, Z. Xu, K. G. Vamvoudakis, U. Topcu, and W. E. Dixon, "Temporal-Logic-Based Intermittent, Optimal, and Safe Continuous-Time Learning for Trajectory Tracking," *IEEE Conference on Decision and Control*, to appear, December 2021.
4. H. M. Sweatland, B. C. Allen, M. L. Greene, and W. E. Dixon, "Deep Neural Network Real-Time Control of a Motorized FES Cycle with an Uncertain Time-Varying Electromechanical Delay," *ASME International Mechanical Engineering Congress and Exposition (IMECE)*, November 2021.
5. F. Zegers, S. Phillips, and W. E. Dixon, "Consensus over Clustered Networks with Asynchronous Inter-Cluster Communication," *American Control Conference*, New Orleans, LA May 2021.
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