DAVID J. LOVE

Nick Trbovich Professor
School of Electrical and Computer Engineering
Purdue University
djlove@purdue.edu
765-496-6797

Education:

The University of Texas at Austin, Austin, TX, Electrical Engineering, B.S.E.E. 2000
The University of Texas at Austin, Austin, TX, Electrical Engineering, M.S.E. 2002
The University of Texas at Austin, Austin, TX, Electrical Engineering, Ph.D. 2004

Appointments:

Nick Trbovich Professor, Purdue University	August 2018 – Present
Reilly Professor, Purdue University	April 2018 – August 2018
Professor, Purdue University	August 2013 – Present
Associate Professor, Purdue University	August 2009 – August 2013
Assistant Professor, Purdue University	August 2004 – August 2009
Co-op, Texas Instruments DSPS R&D Center	Summers 2000, 2002

Leadership:

- **Leader of Purdue College of Engineering Preeminent Team on Flexible and Efficient Spectrum Usage** (2013-Present): Lead a team of nine faculty working on research and education topics related to spectrum, ranging from applications to hardware experimentation to public policy. Team awarded in 2013-2014 with two faculty positions and equipment funding. Expanded team to include three other hires from other tracks. Teams were chosen because the work they do has the potential for dramatic impact and international preeminence and is part of the college's strategic growth plan. Team lead reports to the Dean of the College of Engineering.
- Member of Engineering Area Promotions Committee (EAPC) (2018-2020): The constitution of the College of Engineering defines the EAPC as a committee that will “act on faculty promotions and tenure concordant with the West Lafayette Campus Promotions Policy." The role of the EAPC is: (a) to identify and promote the qualities necessary for promotion and tenure based on the strategic goals for preeminence of the faculty and the institution; (b) to communicate these standards to the entire engineering faculty and the Primary Committees in the schools; (c) to assess the suitability of candidates for promotion and tenure and provide feedback; (d) to consider the guidance provided by the University Committee in order to account for the needs of the institution; (e) to establish processes that provide transparency and consistency both within engineering as

well as throughout the institution, while recognizing the diversity of pathways to impact and excellence; (f) to consider nominations or Distinguished Engineering Alumni, Honorary Doctorates and Distinguished Professorships. Each school/department is represented by the department head and one elected member.

- Member of Purdue University Senate (2018-Present): Elected ECE representative to Senate. The Purdue University Senate is the governing body of the Purdue faculty. Purdue University Senate exercises the legislative and policy-making powers assigned to the faculty.
- **Member of National Spectrum Consortium Executive Committee** (2019-Present): National Spectrum Consortium is a research and development organization that incubates new technologies to revolutionize the way in which spectrum is utilized. It operates as a collaboration between government agencies, industry partners, and academia. NSC was kick-started through a 5 year, $1.25 Billion, Section 815 Prototype Other Transaction Agreement (OTA) with the Office of the Deputy Assistant Secretary of Defense, Emerging Capabilities and Prototyping (ODASD, EC&P).
- **Member of Center for Education and Research in Information Assurance and Security (CERIAS) Research Leadership Board** (2019-Present): CERIAS is one of the world's leading centers for research and education in areas of information security that are crucial to the protection of critical computing and communication infrastructure. CERIAS is unique among such national centers in its multidisciplinary approach to the problems, ranging from purely technical issues (e.g., intrusion detection, network security, etc) to ethical, legal, educational, communicational, linguistic, and economic issues, and the subtle interactions and dependencies among them. The RLB advises CERIAS on how to support faculty and students, with the goal of increasing funded research for cyber and cyber-physical security, resiliency, privacy, autonomy, trusted electronics and explainable AI at Purdue.
- **Purdue Lead for NSF Platforms for Advanced Wireless Research (PAWR) Aerial Experimentation and Research Platform for Advanced Wireless (AERPAW) Testbed** (2019-Present): The PAWR program aims to support advanced wireless research platforms conceived by the U.S. academic and industrial wireless research community. AERPAW is an over-the-air wireless testbed funded by a $24 million grant from the NSF. The team is led by NC State.
- **Thrust Co-Lead for NSF Engineering Research Center (ERC) Internet of Things for Precision Agriculture (IoT4Ag)** (2020-Present): This NSF ERC aims to ensure food, energy, and water security by advancing technology to increase crop production, while minimizing the use of energy and water resources and the impact of agricultural practices on the environment. IoT4Ag is organized into three thrusts. Serve as co-lead of Thrust 2 Communication and Energy Systems, which will enable advanced approaches for powering of drones in the field and communication of data from heterogeneous sensor and drone platforms.

- **Co-Lead of DARPA Spectrum Challenge and DARPA Spectrum Collaboration Challenge (SC2) Teams:** DARPA Spectrum Challenge was a competition organized by DARPA aimed at achieving enhanced spectral efficiency in competitive and collaborative spectral environments. The Purdue team reach the final round and qualified as the top seed for the tournament, finishing #1 out of 90 registered teams during qualifications. DARPA SC2 was a grand challenge event aimed at addressing spectrum scarcity using advanced collaboration and machine learning. The Purdue-led BAM! Wireless team ranked #10 at Preliminary Event 1 held Dec. 2017, securing $750,000 in funding; #5 before payline at Preliminary Event 2 held Dec. 2018; and #11 in the final phase.
- Chair of ECE External Awards Committee (2015-2018): Committee handles alumni and faculty awards. Worked closely with the ECE development office to identify and engage potential donors. Reported to ECE department head.
- Area Chair for Communications, Networking, Signal, and Image Processing (CNSIP) Area (2013-2016): Coordinated area activities on education, hiring, and resource allocation. During time as area chair, area secured five new tenure-track positions. Area members also obtained significant new space to accommodate faculty hires. Reported to ECE department head.
- IEEE (2004-Present): Held variety of positions in IEEE Communication Society and Signal Processing Society. Recent activity includes serving as lead co-chair for 2018 IEEE Communication Theory Workshop. Handled transition of workshop from Puerto Rico to Destin, FL due to hurricane.

Sample of Major Awards:

2020 IEEE Communications Society Fred W. Ellersick Prize
2020 Purdue College of Engineering Faculty Excellence Award for Research
2016 IEEE Communications Society Stephen O. Rice Prize
2016 EU-US NAE Frontiers of Engineering Symposium
2015 IEEE Signal Processing Society Best Paper Award
2015 IEEE Fellow
2014, 2015 Thomson Reuters Highly Cited Researcher
2011 US NAE Frontiers of Engineering Education Symposium
2009 IEEE Transactions on Vehicular Technology Jack Neubauer Memorial Award

Sample of Funding Activities:

Over 50 funded research awards from sources such as NSF, DARPA, DoD, Sandia, and industry (e.g., Samsung, Nokia, Motorola, Texas Instruments, Ford, etc.). Large funded efforts include NSF IoT4AG Engineering Research Center, OSD 5G Tranche 1 funding through National Spectrum Consortium, and DARPA Spectrum Collaboration Challenge (SC2).

Editorial Activities:

- Senior Editor for IEEE Signal Processing Magazine (2018-Present)
- Guest Editor for IEEE Journal on Selected Areas in Communications special issues
- Associate Editor for IEEE Transactions on Signal Processing (2011-2013)
- Editor for IEEE Transactions on Communications (2008-2011)

Sample of Advising and Educational Activities:

- 26 graduated Ph.D. students
- Advisor for Vertically Integrated Projects (VIP) teams on software defined radio and beyond 5G for approximately 15 years. Former advisor for joint VIP team with IU Maurer School of Law.
- Purdue HKN Outstanding Processor Award, Fall 2017 and Spring 2015
- Eaton Award for Design Excellence Faculty Mentor, 2011

Research Publications and Patents:

- Over 110 journal publications (see full CV)
- 32 issued US Patents