

VITA

Name: David J. Love

Education:

<i>Degree</i>	<i>Date</i>	<i>School</i>
B.S.E.E.	Dec. 2000	The University of Texas at Austin
M.S.E.	May 2002	The University of Texas at Austin
Ph.D.	May 2004	The University of Texas at Austin

Dissertation: Feedback Methods for Multiple-Input Multiple-Output Wireless Systems

Professional and Honorary Society Memberships:

Inducted into Eta Kappa Nu (HKN)

Inducted into Tau Beta Pi

Institute of Electrical and Electronics Engineering (IEEE) - Communications Society, Information Theory Society, Signal Processing Society, Vehicular Technology Society, Aerospace and Electronic Systems Society

Fellow 2015 – Present

Senior Member 2009 – 2014

Member 2005 – 2009

Student Member 1998 – 2004

Royal Statistical Society

Fellow 2015 – Present

American Academy for Advancement of Science

Member 2018 – Present

Leadership

- 1. 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. Team accomplishments include securing well over \$10M in funding, reaching the finals in the DARPA Spectrum Challenge, top-ten finishes in both events of the DARPA Spectrum Collaboration Challenge (SC2), expansion of agriculture multidisciplinary research, Vertically Integrated Projects (VIP) educational activities, and joint student supervision with IU Maurer School of Law. Teams were chosen because the work they do has the potential for dramatic impact and international pre-eminence and is part of the college's strategic growth plan that will add as many as 107 faculty over five years. Team lead reports to the Dean of the College of Engineering.
- 2. Member of Engineering Area Promotions Committee (EAPC) (2018-Present):** 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 for Distinguished Engineering Alumni, Honorary Doctorates and Distinguished Professorships. Each school/department is represented by the department head and one elected member.

3. **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.
4. **Member of National Spectrum Consortium Executive Committee (Starting 2019):** 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 industry partners, academia and Government agencies. 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).
5. **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.
6. **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.
7. **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.

Honors and Accomplishments:

Major Internal and External Recognitions

1. **Thomson Reuters Highly Cited Researcher**, 2015 - According to the criteria, “researchers earned the distinction by writing the greatest numbers of reports officially designated by Essential Science Indicators as Highly Cited Papers ranking among the top 1% most cited for their subject field and year of publication, earning them the mark of exceptional impact.”
2. Thomson Reuters list of “**The World’s Most Influential Scientific Minds: 2015**”
3. **IEEE Fellow** “for contributions to feedback-adaptive wireless communication systems,” 2015
4. **Thomson Reuters Highly Cited Researcher**, 2014
5. Thomson Reuters list of “**The World’s Most Influential Scientific Minds: 2014**”
6. Purdue Innovator Hall of Fame, 2014
7. **Purdue University Faculty Scholar**, 2012-2017 - The University Faculty Scholars Program recognizes outstanding faculty members at the West Lafayette campus who are on an accelerated path for academic distinction. Eligible faculty must hold the rank of tenured associate or full professor and have been in that rank for no more than five years. Award provides \$50,000 in support spread over a period of five years.
8. IEEE Senior Member, November 2009.

Paper Awards, Conference Awards, Teaching Awards, and Fellowships

1. Purdue Seed for Success Award, 2017
2. Purdue HKN Outstanding Professor Award, Fall 2017
3. **IEEE Communications Society Stephen O. Rice Prize in the Field of Communications Theory** for “Millimeter Wave Beamforming for Wireless Backhaul and Access in Small Cell Networks,” with S. Hur, T. Kim, J. V. Krogmeier, T. A. Thomas, and A. Ghosh, 2016
4. **IEEE Signal Processing Society Best Paper Award** for “Downlink Training Techniques for FDD Massive MIMO Systems: Open-Loop and Closed-Loop Training With Memory,” with J. Choi and T. P. Bidigare, 2015

5. IEEE International Conference on Computing, Networking and Communication (ICNC) 2016 Outstanding Leadership Award
6. Purdue HKN Outstanding Professor Award, Spring 2015
7. IEEE Global Communications (Globecom) Conference best paper award for the paper “Downlink training codebook design and hybrid precoding in FDD massive MIMO Systems,” co-authored with S. Noh and M. Zoltowski, 2014
8. IEEE Global Communications (Globecom) Conference Signal Processing for Communications Symposium best paper award for the paper “Limited Feedback Design for the Spatially Correlated Multi-Antenna Broadcast Channel,” co-authored with J. Choi and V. Raghavan, 2013
9. Eaton Award for Design Excellence Faculty Mentor (w/ J. Krogmeier), 2011 - Recognition for faculty member that had the greatest impact on the education of 2011 Eaton Award winner (Dr. Tarkesh Pande of Texas Instruments). The Eaton award “recognizes outstanding work in the field of design by recent ECE alumni” (<https://engineering.purdue.edu/ECE/InfoFor/AlumniAndFriends/Eaton>).
10. Purdue HKN Outstanding Teacher Award, Fall 2010
11. **IEEE Transactions on Vehicular Technology Jack Neubauer Memorial Award** (the best systems paper published in the IEEE Transactions on Vehicular Technology in that year) for “Body - Worn Distributed MIMO System,” with Y. Ouyang and W. J. Chappell, 2009
12. IEEE Vehicular Technology Society Daniel E. Noble Fellowship, 2003
13. TxTec Graduate Fellowship, 2003 – 2004
14. UT-Austin A. D. Hutchison Student Endowment Fellowship, 2003 – 2004
15. UT-Austin Continuing Graduate Fellowship, 2003
16. UT-Austin Cockrell Doctoral Fellowship, 2001 – 2004
17. UT-Austin Microelectronics and Computer Development Fellowship, 2001 – 2002
18. TxTec Graduate Fellowship, 2001 – 2002
19. B.S.E.E. with Highest Honors, 2000
20. UT-Austin Distinguished Scholar, 2000
21. University Honors, UT-Austin, Fall 1997 – Spring 2000

Activities and Accomplishments

1. Co-advised DARPA Spectrum Collaboration Challenge (SC2) top-ten team BAM! Wireless. The team ranked in the top ten at Preliminary Event #1 held Dec. 2017, securing \$750,000 in funding. The team ranked in the top five before payline at Preliminary Event #2 held Dec. 2018. See <https://www.darpa.mil/news-events/2017-12-21a>
2. Invited Participant to the 2016 EU-US National Academy of Engineering Frontiers of Engineering Symposium in Espoo, Finland.
3. Two papers featured in IEEE COMSOC Best Readings in Massive MIMO. Featured work includes feedback and training signal design for FDD-based massive MIMO (see <http://www.comsoc.org/best-readings/massive-mimo>).
4. Featured engineer on EE Web (see <http://www.eeweb.com/spotlight/interview-with-david-love>), 2014.
5. Co-advised (with J. Krogmeier) DARPA Spectrum Challenge finalist team. The team qualified as the top seed for the tournament, finishing #1 out of 90 registered teams during qualifications. The team was composed of members from Purdue and Raytheon BBN. See <https://engineering.purdue.edu/ECE/Spotlights/ece-student-group-qualifies-in-top-seed-for-darpa-spectrum-challenge>.
6. Vertically Integrated Projects program highlighted in the U.S. National Academy of Engineering report *Infusing Real World Experiences into Engineering Education*. The report features 29 engineering programs at colleges and universities across the nation that effectively incorporate real world experiences into their curriculum and highlights best practices for schools seeking to create new programs. Information about the report is available at <http://nae.edu/Activities/MediaRoom/News/55955/65122.aspx>.
7. Invited Participant to the 2011 US National Academy of Engineering Frontiers of Engineering Educa-

tion Symposium in Irvine, CA.

8. Social Science Research Network (SSRN) "Recent Hits" Top Ten Download List for various topics, July 2011 to September 2011.
9. Served as technical expert (with J. Krogmeier) for the Association for Maximum Service Television, Inc. (MSTV) and the National Association of Broadcasters (NAB) in spectrum usage discussion for National Broadband Plan. See FCC Filing Comments of the Association for Maximum Service Television, Inc. and the National Association of Broadcasters, GN Docket Nos. 09-47, 09-51, 09-137, Dec. 22, 2009.
10. Journal article listed as one of the November 2008 and March 2010 Top 100 Documents Accessed from IEEEExplore ("An overview of limited feedback in wireless communication systems," # 91 (Nov. 2008), # 57 (March 2010)).
11. Participant in Samsung 4G Forum, August 31-September 1 2006. Forum is a by-invitation conference featuring Samsung executives, executives from Samsung-affiliated companies, and professors.
12. Cited almost 12,500 according to Google Scholar. Multiple highly cited papers including two papers with over 1000 citations, four papers with over 500 citations, and 21 papers with over 100 citations.

Student Awards

1. Bronze Prize in Samsung Electronics 23rd Humantech Paper Contest awarded to Ph.D. student Jiho Song for his work "Advanced Quantizer Designs for FDD-based FD-MIMO Systems Using Uniform Planar Arrays," 2017
2. Silver Prize in Samsung Electronics 21st Humantech Paper Contest awarded to Ph.D. student Song Noh for his work "Downlink Training Codebook Design and Hybrid Precoding in FDD Massive MIMO Systems," 2015
3. National Science Foundation Graduate Research Fellowship awarded to Ph.D. student Stephen Larew, 2014
4. Purdue College of Engineering Outstanding Research Award to Ph.D. student Junil Choi, 2014
5. Purdue ECE Graduate Student Association Outstanding Student of the Semester Award to Ph.D. student Junil Choi for fall semester, 2013
6. Department of Defense Science, Mathematics And Research for Transformation (SMART) Fellowship awarded to Ph.D. student Andrew Duly, 2010
7. Purdue ECE Outstanding Graduate Student Award to Ph.D. student Chun Kin Au Yeung, 2009

Professional Experience:

August 2018 - Present	Nick Trbovich Professor of Electrical and Computer Engineering, School of Electrical and Computer Engineering, Purdue University
April 2018 - August 2018	Reilly Professor of Electrical and Computer Engineering, School of Electrical and Computer Engineering, Purdue University
August 2013 - Present	Professor, School of Electrical and Computer Engineering, Purdue University
August 2009 - August 2013	Associate Professor, School of Electrical and Computer Engineering, Purdue University
August 2004 - August 2009	Assistant Professor, School of Electrical and Computer Engineering,

	Purdue University
June 2003 – August 2003	Graduate Research Assistant, Department of Electrical and Computer Engineering, The University of Texas at Austin
May 2002 - August 2002	Summer Research Co-op, DSPS R&D Center Texas Instruments, Dallas, TX
May 2000 - August 2000	Summer Research Co-op, DSPS R&D Center Texas Instruments, Dallas, TX

Editorial Positions:

1. Guest Editor, *IEEE Journal on Selected Areas in Communications*, Special Issue on “Exploiting Limited Feedback in Tomorrow’s Wireless Communications Networks,” 2008, (Other Editors: R. W. Heath, V. Lau, D. Gesbert, B. Rao, M. Andrews).
2. Editor, *IEEE Transactions on Communications*, October 2008 to September 2011.
3. Guest Editor, *EURASIP Journal on Wireless Communications and Networking*, Special Issue on “Recent advances in multiuser MIMO systems,” 2010-2011, (Other Editors: R. C. De Lamare, M. Haardt, M. Joham, D. Le Ruyet).
4. Associate Editor, *IEEE Transactions on Signal Processing*, January 2011 to January 2013.
5. Signal Processing Society Representative, Steering Committee, *IEEE Wireless Communication Letters*, January 2018-December 2021.
6. Senior Editor and Editorial Board Member, *IEEE Signal Processing Magazine*, April 2018 to Present.

External Activities:

Professional Society Committees and Government Service

1. IEEE Communication Society, Communication Theory Technical Committee, 2003 - Present.
2. IEEE Vehicular Technology Society, Dan Noble Fellowship Award Panel, August 2007.
3. IEEE Communication Society, Wireless Communications Technical Committee, 2008 - Present.
4. IEEE Signal Processing Society, Signal Processing for Communications and Networking Technical Committee, Associate Member, 2010.
5. IEEE Signal Processing Society, Signal Processing for Communications and Networking Technical Committee, Member, 2011 - 2016 (elected 2010, reelected 2013).
6. National Spectrum Consortium, Purdue University Contact, 2015 - Present.
7. IEEE Communication Society, Signal Processing for Communications (SPC) Technical Committee, 2016 - Present.

Professional Society Chapters

1. Chair, Central Indiana Chapter, IEEE Signal Processing Society, 2010 - 2013.

Conference TPC Chair and Organization Activities

1. Track Co-Chair (equivalent to TPC co-chair), IEEE Fall Vehicular Technology Conference (VTC), Multiple Antenna Systems Track, October 2007.

2. Communication Theory Technical Committee Representative to General Symposium, IEEE Global Telecommunications Conference (Globecom), December 2007.
3. Publicity Co-Chair, IEEE Communication Theory Workshop, May 2008.
4. Session Co-Organizer, IEEE Asilomar Conference on Signals, Systems, and Computers, "Feedback in MIMO Systems," October 2008.
5. Poster Co-Chair, IEEE Communication Theory Workshop, May 2010.
6. Session Organizer and TPC Member, IEEE Military Communications Conference (Milcom), "New Uses of Feedback in Communication Systems," October-November 2010.
7. Industry Liaison Co-Chair, IEEE Communication Theory Workshop, May 2012.
8. Member of Best Paper Award Committee, IEEE International Conference on Communications (ICC), June 2013.
9. Co-Chair of Symposium Technical Program Committee, IEEE International Conference on Communications in China, Symposium on Signal Processing for Communications, August 2013.
10. Student Paper Awards Committee, IEEE Asilomar Conference on Signals, Systems, and Computers, November 2013.
11. Lead Co-Chair of Symposium Technical Program Committee, IEEE Global Communications Conference (Globecom), Wireless Communications Symposium, December 2013.
12. Co-Organizer, IEEE International Conference on Communications (ICC), Workshop on Next Generation Backhaul/Fronthaul Networks (BackNets), June 2015.
13. Co-Chair, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Workshop on Wireless Communications in Millimeter Wave Bands, August 2015.
14. Technical Program Committee Area Chair for Track B MIMO Communications and Signal Processing, IEEE Asilomar Conference on Signals, Systems, and Computers, November 2015.
15. Co-Chair of Symposium Technical Program Committee, International Conference on Computing, Networking and Communications (ICNC), Wireless Communications Symposium, February 2016.
16. Co-Organizer, IEEE Vehicular Technology Conference (VTC), International Workshop on Emerging Technology on Massive MIMO System (E-MIMO 2016), May 2016.
17. Co-Chair, IEEE International Conference on Communications (ICC), Workshop on Next Generation Backhaul/Fronthaul Networks (BackNets 2016), May 2016.
18. Co-Chair for Track 1, IEEE Military Communications Conference, November 2016.
19. Co-Chair, IEEE Communication Theory Workshop, 2018.

Conference Technical Program Committees

1. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2004.
2. Technical Program Subcommittee Member, IEEE Radio & Wireless Conference (RAWCON), MIMO Technologies, September 2004.
3. Technical Program Committee Member, IEEE Global Telecommunications Conference (Globecom), Wireless Communications, Networks, and Systems Symposium, December 2004.
4. Technical Program Committee Member, IEEE Wireless Communications Conference (WIRELESS-COM), June 2005.

5. Technical Program Committee Member, IEEE International Symposium on Wireless Communication Systems, September 2005.
6. Technical Program Committee Member, IEEE Global Telecommunications Conference (Globecom), Wireless Communications, Networks, and Systems Symposium, December 2005.
7. Technical Program Subcommittee Member, IEEE Radio and Wireless Symposium, MIMO Technologies, January 2006.
8. Technical Program Committee Member, IEEE Wireless Communications and Networking Conference (WCNC), April 2006.
9. Technical Program Committee Member, IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM), July 2006.
10. Technical Program Committee Member, IEEE International Wireless Communications and Mobile Computing Conference, July 2006.
11. Technical Program Committee Member, IEEE Global Telecommunications Conference (Globecom), Communication Theory Symposium, December 2006.
12. Technical Program Subcommittee Member, IEEE Radio and Wireless Symposium, MIMO Technologies, January 2007.
13. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2007.
14. Technical Program Subcommittee Member, IEEE Radio and Wireless Symposium, MIMO Technologies, January 2008.
15. External Expert Reviewer (similar to TPC member), IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Signal Processing for Communications, March-April 2008.
16. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, May 2008.
17. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Wireless Communications Symposium, May 2008.
18. Technical Program Committee Member, European Wireless Conference, Czech Technical University (CTU), June 2008.
19. Technical Program Committee Member, International Wireless Communications and Mobile Computing (IWCMC), MIMO Symposium, August 2008.
20. Technical Program Committee Member, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Fundamentals & PHY Track, September 2008.
21. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Wireless Communications Symposium, November-December 2008.
22. Technical Program Committee Member, IEEE Wireless Communications & Networking Conference (WCNC), PHY Track, April 2009.
23. External Expert Reviewer (similar to TPC member), IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Signal Processing for Communications, April 2009.
24. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, May 2009.
25. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Wireless Communications, Symposium, May 2009.
26. Technical Program Committee Member, European Wireless Conference, Aalborg University, Denmark and by VTT, Finland, May 2009.
27. Technical Program Committee Member, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), July 2009.
28. Technical Program Committee Member, International Wireless Communications and Mobile Computing (IWCMC), MIMO Symposium, July 2009.

29. Technical Program Committee Member, IEEE International Workshop on Cross-Layer Designs, June 2009.
30. Technical Program Committee Member, IEEE Fall Vehicular Technology Conference (VTC), Multiple Antenna Systems and Space Time Processing Track, September 2009.
31. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Wireless Communications Symposium, November-December 2009.
32. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, November-December 2009.
33. External Expert Reviewer (similar to TPC member), IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Signal Processing for Communications, March 2010.
34. Technical Program Committee Member, IEEE Wireless Communications and Networking Conference (WCNC), PHY Track, April 2010.
35. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, May 2010.
36. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Wireless Communications Symposium, May 2010.
37. Technical Program Committee Member, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), June 2010.
38. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Wireless Communications Symposium, December 2010.
39. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2011.
40. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Wireless Communications Symposium, June 2011.
41. Technical Program Committee Member, IEEE Wireless Communications and Networking Conference (WCNC), PHY Track, March 2011.
42. External Expert Reviewer (similar to TPC member), IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Signal Processing for Communications, May 2011.
43. Technical Program Committee Member, IEEE Fall Vehicular Technology Conference (VTC), Multiple Antenna Systems and Space Time Processing Track, September 2011.
44. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Wireless Communications Symposium, December 2011.
45. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2011.
46. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2012.
47. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Wireless Communications Symposium, June 2012.
48. Technical Program Committee Member, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), June 2012.
49. Technical Program Committee Member, IEEE Fall Vehicular Technology Conference (VTC), Signal Processing for Wireless Communications Track, September 2012.
50. Technical Program Committee Member, Military Communications Conference (MILCOM), Track 1: Waveforms and Signal Processing, October-November 2012.
51. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2012.
52. Technical Program Committee Member, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), June 2013.

53. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2013.
54. Technical Program Committee, IEEE International Conference on Communications (ICC), Workshop on LTE-B: Beyond LTE-A, June 2013.
55. Technical Program Committee Member, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Signal Processing for Communications, May 2014.
56. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2014.
57. Technical Program Committee Member, IEEE Military Communications Conference (Milcom), Waveforms and Signal Processing Track, October 2014.
58. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2014.
59. Technical Program Committee Member, IEEE Global Conference on Signal and Information Processing (GlobalSIP), Massive MIMO Symposium, December 2014.
60. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, June 2015.
61. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2015.
62. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Signal Processing for Communications Symposium, December 2015.
63. Technical Program Committee Member, IEEE Global Conference on Signal and Information Processing (GlobalSIP), Massive MIMO and Full-Dimension MIMO (FD-MIMO) Symposium, December 2015.
64. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, May 2016.
65. Technical Program Committee Member, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), July 2017.
66. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2017.
67. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Mobile and Wireless Networks, December 2017.
68. Technical Program Committee Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2018.
69. Technical Program Committee Member, IEEE International Conference on Communications (ICC), Communication Theory Symposium, May 2019.
70. Member, IEEE Global Communications Conference (Globecom), Communication Theory Symposium, December 2019.

Session Chairman

1. Session Chairman, The University of Texas at Austin Wireless Networking and Communications Group (WNCG) Symposium, "Space-Time Coding & Diversity Session," October 2003.
2. Session Chairman, University of Illinois at Urbana-Champaign, Forty-Second Annual Allerton Conference On Communication, Control, and Computing, "MIMO I," September 2004.
3. Session Chairman, IEEE Global Telecommunications Conference (Globecom), "Diversity I," December 2004.
4. Session Chairman, IEEE Vehicular Technology Conference Conference (VTC), "MIMO III," September 2005.
5. Session Chairman, IEEE Global Telecommunications Conference (Globecom), "Space-Time Coding II," December 2005.

6. Session Chairman, IEEE Global Telecommunications Conference (Globecom), "MIMO I," December 2006.
7. Session Chairman, IEEE Radio and Wireless Symposium, "Implementation and Evaluation of Smart Antenna," January 2008.
8. Session Co-Chairman, IEEE Asilomar Conference on Signals, Systems, and Computers, "Feedback in MIMO Systems," October 2008.
9. Session Chairman, IEEE Global Communications Conference (Globecom), "MIMO Broadcast Channels," December 2008.
10. Session Chairman, IEEE International Symposium on Information Theory, "Finite-Rate and Limited Feedback," June 2010.
11. Session Chairman, IEEE Military Communications Conference (Milcom), "Feedback in Communication Systems," November 2010.
12. Session Chairman, IEEE Radar Conference (RadarCon), "Multistatic/ MIMO Processing," May 2011.
13. Session Chairman, IEEE Asilomar Conference on Signals, Systems, and Computers, "MIMO Processing," November 2013.
14. Session Chairman, IEEE Global Communications Conference (Globecom), "Advanced Powering and Adaptation Approaches for Future Cellular Systems," December 2013.
15. Session Chairman, UCSD Information Theory and Applications (ITA) Workshop, "Millimeter Wave," February 2018.
16. Session Chairman, IEEE International Conference on Communications (ICC), "MASSIVE MIMO - Precoding," May 2018.
17. Session Co-Chairman, IEEE Asilomar Conference on Signals, Systems, and Computers, "MP1b: mmWave Communications II," October 2018.

Ph.D. Thesis Supervision Completed:

1. Peilu Ding, "Open-Loop and Close-Loop Transmit Diversity Designs for Multiple Antenna Wireless Systems," December 2005 (Co-advised by Prof. M. D. Zoltowski)
2. Tarkesh Pande, "Limited Feedback Precoding for MIMO-OFDM and Non-Coherent Demodulation for Orthogonal Space Time Coded Continuous Phase Modulation," December 2006 (Co-advised by Prof. J. V. Krogmeier)
3. Amir D. Dabbagh, "Multiuser MIMO Wireless Communication Systems," May 2007
4. Jianqi Wang, "Transceiver Design for Wireless Downlink Channels with Multiple Antennas," December 2008 (Co-advised by Prof. M. D. Zoltowski)
5. Il Han Kim, "Adaptive MIMO Communications in Multiuser Scenarios," December 2008
6. Chun Kin Au Yeung, "Feedback Design and Application of Beamforming in Cellular and Multicell Environment," December 2010
7. Obadamilola Aluko, "Frameworks to Enhance Performance in Precoded Multi-User MIMO Systems," December 2010 (Co-advised by Prof. J. V. Krogmeier)
8. Taejoon Kim, "Adaptive Signaling for Closed-Loop MIMO Communications," August 2011
9. Zachary Chance, "Harnessing the Benefits of Noisy Feedback," August 2012
10. Mayur Agrawal, "On Making Channel Output Feedback Practical for Communication Systems," December 2012 (Co-advised by Prof. V. Balakrishnan)
11. Sooyoung Hur, "Millimeter Wave Beamforming for Wireless Backhaul and Access in Small Cell Networks and Practical Approaches in Software-defined Radio," August 2013 (Co-advised by Prof. J. V. Krogmeier)

12. Andrew Duly, "Transmit Signal Design for MIMO Radar and Massive MIMO Channel Estimation," December 2013 (Co-advised by Prof. J. V. Krogmeier)
13. Junil Choi, "Advanced Wireless Communications Using Large Numbers of Transmit Antennas and Receive Nodes," May 2015
14. Deepan Palguna, "Prediction, Estimation and Detection Problems with Quantization Considerations: Applications to Financial Markets and Wireless Communication," August 2015 (Co-advised by Prof. I. Pollak)
15. Andrew Marcum, "Wireless Network Optimization for Cognitive Radio," December 2015 (Co-advised by Prof. J. V. Krogmeier)
16. Song Noh, "Advanced Design of Space-Time Training and Beamforming for Large-Scale Multi-Antenna Communication Systems," December 2015 (Co-advised by Prof. M. D. Zoltowski)
17. Dawei Ying, "Capacity Analysis for MIMO systems with User Exposure Constraints," December 2015
18. Ziad Ahmad, "Throughput Enhancements In Multiuser Downlink Systems Using Imperfect Feedback," May 2016
19. Jiho Song, "Advanced Channel Training and Quantization for Large-Scale Multi-Antenna Communication Systems," May 2017
20. Hongyi Zhu, "Throughput and Efficiency Analysis of Network-Coded HARQ for Two-Way Wireless Systems," August 2018 (Co-advised by Prof. B. Smida)
21. Ahmed Ibrahim, "Adaptive Communication for Wireless Massive MIMO Systems," August 2018

M.S. Research Supervision Completed:

1. Jackie Bryson, December 2007 (course option, co-advised by Prof. V. Balakrishnan)
2. Kamesh Krishnamurthy, May 2008 (course option)
3. Xu Chen, "MIMO Precoder Design in the Relay-assisted Cellular Network," May 2009 (thesis option)
4. Andrew Duly, "Transmit Signal Design using Linear Precoding for MIMO Radar," December 2010 (thesis option, co-advised by Prof. J. Krogmeier)
5. Stephen Beckley, "A Multiple-Input Multiple-Output (MIMO) Signal Processing Approach to Parallel Transmit and Receive MRI," December 2012 (thesis option)

M.S. and Ph.D. Students Currently Being Supervised:

Tomohiro Arakawa	Ph.D. (co-advised by Prof. J. Krogmeier)
Matthew Booth	Ph.D.
M. Rodrigo Castellanos	Ph.D.(co-advised by Prof. B. Peleato)
Jing Guo	Ph.D.
Stephen Larew	Ph.D.
Xianglun Mao	Ph.D. (co-advised by Prof. T. Talavage)
Dennis Ogbe	Ph.D.
Eric Ruzomberka	Ph.D.
Vinayak Suresh	Ph.D.

External Ph.D. Committee Membership or Examiner:

Marthe Kassouf, Department of Electrical and Computer Engineering, McGill University, Fall 2007
 Renaud-Alexandre Pitaval, School of Electrical Engineering, Aalto University, Summer 2013
 Malcolm Egan, Graduate School of Engineering & IT, University of Sydney, Fall 2013
 Karthik Upadhyaya, School of Electrical Engineering, Aalto University, Summer 2018

Post-Doctoral and Visiting Scholar Supervision:

Prof. Seung Young Park (now a Professor at Kangwon National University)	2006-2007 2012-2013
Dr. Kyeongyeon Kim (now at Samsung)	2007-2008
Prof. A-Imam Al-Sammak (Associate Professor at University of Bahrain)	2008
Dr. Jaesang Ham (now at Samsung)	2009-2010
Prof. Youngju Kim (Chungbuk National University)	2011-2012
Prof. Jaekwon Kim (Yonsei University)	2014-2015
Dr. Byungju Lee (now at Samsung)	2015 - 2017

Courses Developed:

ECE 695D Multiple Antenna Wireless Communication (course material now integrated into ECE 679)

Courses “In Charge of”:

ECE 695D Multiple Antenna Wireless Communication (no longer offered,
 course material now integrated into ECE 679)
 ECE 440 Transmission of Information

Undergraduate Advising:

Vertically Integrated Projects (VIP) Software Defined Radio Team, Intellectual Property Team (joint with the Indiana University Maurer School of Law), and Minimizing Electromagnet Exposure Team: The VIP program couples undergraduates, M.S. students, Ph.D. students, and faculty in a meaningful long-term project-based research and learning setting. The Software Defined Radio Team focuses on using the Universal Software Radio Peripheral (USRP) to prototype different communication and signal processing systems. The team began operation in Fall 2008. Approximately 5 students per semester were involved with this team. The Intellectual Property Team involves Purdue engineering undergraduates in technology-based legal research with law school faculty. This team was initiated in Spring 2014. Students in the Minimizing Electromagnetic Exposure Team, initiated during Fall 2014, are developing signal processing techniques to minimize electromagnetic exposure.

University Committee Activities:

Committee: University Senate, Purdue University
 Activity: ECE Representative
 Fall 2018 to Present

College Committee Activities:

Committee: Faculty Affairs Committee, College of Engineering, Purdue University
 Activity: Member
 2006 to 2007

Committee: Data Science Hiring Committee, College of Engineering, Purdue University
 Activity: Member
 2017 to 2018

Committee: Engineering Area Promotions Committee, College of Engineering, Purdue University
 Activity: ECE Elected Representative
 Fall 2018 to Spring 2020

Committee: ECE Department Head Search Committee, College of Engineering, Purdue University
 Activity: Member
 Summer 2018 to Fall 2018

School Committee Activities:

Committee: Graduate Admissions Committee, ECE, Purdue University
 Activity: Member
 2004 to 2014

Committee: Graduate Committee, ECE, Purdue University
 Activity: Member
 2007 to 2008, 2011 to 2014

Committee: Head's Advisory (Strategic Planning) Committee, ECE, Purdue University
 Activity: Member
 2007 to 2010

Committee: CNSIP Faculty Search Committee, ECE, Purdue University
 Activity: Member
 2008

Committee: Curriculum Committee for MS in EW, Purdue West Lafayette Representative
 Activity: Member
 2011 to 2012

Committee: Communications, Networking, Signal, and Image Processing (CNSIP), ECE, Purdue University
 Activity: Area Chair
 2013 to 2016

Committee: Qualifying Exam Committee, ECE, Purdue University
 Activity: Member
 2013 to 2016

Committee: External Awards Committee, ECE, Purdue University
 Activity: Chair
 2015 to 2018

Committee: Committee to Study Merger of BSEE and BS in Computer Engineering, ECE, Purdue University
 Activity: Member
 2015

Committee: Self-Study Committee, ECE, Purdue University
 Activity: Member
 2016 to 2017

Committee: ECE Lab Coordinator Search Committee, ECE, Purdue University
 Activity: Member
 Fall 2018

Student Activities:

Organization: IEEE - Purdue University Student Chapter
 Activity: Faculty advisor
 2007 to 2011

Organization: Purdue Center for Wireless Systems and Applications
 Activity: Co-organizer of seminar series
 2004 to 2007

Book Reviews:

1. Prentice Hall, *Analog and Digital Communication Systems* by O. Alkin, 2008
2. John Wiley, *Principles of Communications* by R. E. Zimer and W. H. Tranter, 7th edition, 2012
3. John Wiley, *Green Heterogeneous Wireless Networks* by M. Ismail, M. Z. Shakir, K. Qarage, and E. Serpedin, 2014

Proposal Reviews:

1. National Science Foundation
2. Army Research Office
3. Israel Science Foundation, 2006
4. Korea Research Foundation, 2008

FCC Filings:

1. Comments of the Association for Maximum Service Television, Inc. and the National Association of Broadcasters, GN Docket Nos. 09-47, 09-51, 09-137, Dec. 22, 2009. Attachment A: Technical Review, "The Ongoing Need for Over-The-Air Broadcasting: Current and Future Roles in the U.S. Economy and Society," (with J. Krogmeier).

Research Book Contributions and Books Published:

1. D. J. Love and R. W. Heath Jr., "Feedback techniques for MIMO channels," in *MIMO System Technology for Wireless Communications*, edited by George Tsoulos, ISBN number 0-8493-4190-6, pp. 113-146, CRC Taylor & Francis Group, Boca Raton, FL, 2006.
2. J. Song, M. R. Castellanos, and D. J. Love, "Millimeter Wave Communications for 5G Networks," in *Key Technologies for 5G Wireless Systems*, edited by Vincent W. S. Wong, Robert Schober, Derrick Wing Kwan Ng, and Li-Chun Wang, pp. 188-213, Cambridge University Press, Cambridge, UK, 2017.

Editorials:

1. R. W. Heath, Jr., D. J. Love, B. D. Rao, V. Lau, D. Gesbert, and M. Andrews, "Guest Editorial: Exploiting limited feedback in tomorrow's wireless communication networks," *IEEE Journal on Selected Areas in Communications*, vol. 26, no. 8, pp. 1337-1340, Oct. 2008.
2. R. C. de Lamare, M. Haardt, M. Joham, D. Le Ruyet, and D. J. Love, "Editorial for Special Issue on Recent Advances in Multiuser MIMO Systems," *EURASIP Journal on Wireless Communications and Networking (JWCN)*, 2011.

Serial Journal Articles:

1. D. J. Love and R. W. Heath Jr., "Equal Gain Transmission in Multiple-Input Multiple-Output Wireless Systems," *IEEE Transactions on Communications*, vol. 51, no. 7, pp. 1102-1110, July 2003.
2. D. J. Love, R. W. Heath Jr., and T. Strohmer, "Grassmannian Beamforming for Multiple-Input Multiple-Output Wireless Systems," *IEEE Transactions on Information Theory*, vol. 49, no. 10, pp. 2735-2747, Oct. 2003.
3. D. J. Love and R. W. Heath Jr., "Diversity Performance of Precoded Orthogonal Space-Time Block Codes Using Limited Feedback," *IEEE Communications Letters*, vol. 8, no. 5, pp. 305-307, May 2004.
4. D. J. Love, R. W. Heath Jr., W. Santipach, and M. L. Honig, "What is the Value of Limited Feedback for MIMO Channels?," *IEEE Communications Magazine*, vol. 42, no. 10, pp. 54-59, Oct. 2004.
5. D. J. Love and R. W. Heath Jr., "Necessary and Sufficient Conditions for Full Diversity Order in Correlated Rayleigh Fading Beamforming and Combining Systems," *IEEE Transactions on Wireless Communications*, vol. 4, no. 1, pp. 20-23, Jan. 2005.
6. D. J. Love and R. W. Heath Jr., "Limited Feedback Unitary Precoding for Orthogonal Space-Time Block Codes," *IEEE Transactions on Signal Processing*, vol. 53, no. 1, pp. 64-73, Jan. 2005.
7. R. W. Heath Jr. and D. J. Love, "Multimode Antenna Selection for Spatial Multiplexing Systems with Linear Receivers," *IEEE Transactions on Signal Processing*, vol. 53, no. 8, pp. 3042-3056, Aug. 2005.
8. D. J. Love and R. W. Heath Jr., "Limited Feedback Unitary Precoding for Spatial Multiplexing Systems," *IEEE Transactions Information Theory*, vol. 51, no. 8, pp. 2967-2976, Aug. 2005.
9. D. J. Love and R. W. Heath Jr., "Multimode Precoding for MIMO Wireless Systems," *IEEE Transactions on Signal Processing*, vol. 53, no. 10, part 1, pp. 3674-3687, Oct. 2005.
10. D. J. Love, S. Hosur, A. Batra, and R. W. Heath Jr., "Space-Time Chase Decoding," *IEEE Transactions on Wireless Communications*, vol. 4, no. 5, pp. 2035-2039, Sept. 2005.
11. D. J. Love and R. W. Heath Jr., "OFDM Power Loading Using Limited Feedback," *IEEE Transactions on Vehicular Technology*, vol. 54, no. 5, pp. 1773-1780, Sept. 2005.
12. D. J. Love, "On the Probability of Error of Antenna-Subset Selection with Space-Time Block Codes," *IEEE Transactions on Communications*, vol. 53, no. 11, pp. 1799-1803, Nov. 2005.
13. D. J. Love, "Duplex Distortion Models for Limited Feedback MIMO Communication," *IEEE Transactions on Signal Processing*, vol. 54, no. 2, pp. 766-774, Feb. 2006.
14. D. J. Love and R. W. Heath Jr., "Limited Feedback Diversity Techniques for Correlated Channels," *IEEE Transactions on Vehicular Technology*, vol. 55, no. 2, pp. 718-722, March 2006.
15. C. K. Au-Yeung and D. J. Love, "A Performance Analysis Framework for Limited Feedback Beamforming in Correlated Fading," *IEEE Communications Letters*, vol. 10, no. 5, pp. 344-346, May 2006.
16. A. D. Dabbagh and D. J. Love, "Feedback Rate-Capacity Loss Tradeoff for Limited Feedback MIMO Systems," *IEEE Transactions on Information Theory*, vol. 52, no. 5, pp. 2190-2202, May 2006.
17. P. Ding, D. J. Love, J. Wang, and M. D. Zoltowski, "Low Complexity Adaptive Design for Full-Diversity Full-Rate Space-Time Codes," *IEEE Transactions on Signal Processing*, vol. 54, no. 8, pp. 3180-3189, August 2006.
18. T. Pande, D. J. Love, and J. V. Krogmeier, "A Weighted Least Squares Approach to Precoding with Pilots for MIMO-OFDM," *IEEE Transactions on Signal Processing*, vol. 54, no. 10, pp. 4067-4073, Oct. 2006.

19. C. K. Au-Yeung and D. J. Love, "On the Performance of Random Vector Quantization Limited Feedback Beamforming in a MISO System," *IEEE Transactions on Wireless Communications*, vol. 6, no. 2, pp. 458-462, Feb. 2007.
20. T. Pande, D. J. Love, and J. V. Krogmeier, "Reduced Feedback MIMO-OFDM Precoding and Antenna Selection," *IEEE Transactions on Signal Processing*, vol. 55, no. 5, part 2, pp. 2284-2293, May 2007.
21. S. Y. Park, D. Park, and D. J. Love, "On Scheduling for Multiple-Antenna Wireless Networks Using Contention-Based Feedback," *IEEE Transactions on Communications*, vol. 55, no. 6, pp. 1174-1190, June 2007.
22. P. Ding, D. J. Love, and M. D. Zoltowski, "Multiple Antenna Broadcast Channels with Shape Feedback and Limited Feedback," *IEEE Transactions on Signal Processing*, vol. 55, no. 7, pp. 3417-3428, July 2007.
23. A. Forenza, D. J. Love, and R. W. Heath Jr., "Simplified Spatial Correlation Models for Clustered MIMO Channels with Different Array Configurations," *IEEE Transactions on Vehicular Technology*, vol. 56, no. 4, pp. 1924-1934, July 2007.
24. A. D. Dabbagh and D. J. Love, "Precoding for Multiple Antenna Gaussian Broadcast Channels With Successive Zero-Forcing," *IEEE Transactions on Signal Processing*, vol. 55, no. 7, pp. 3837-3850, July 2007.
25. S. Y. Park and D. J. Love, "Capacity Limits of Multiple Antenna Multicasting Using Antenna Subset Selection," *IEEE Transactions on Signal Processing*, vol. 56, no. 6, pp. 2524-2534, June 2008.
26. J. Wang, D. J. Love, and M. D. Zoltowski, "User Selection With Zero-Forcing Beamforming Achieves the Asymptotically Optimal Sum Rate," *IEEE Transactions on Signal Processing*, vol. 56, no. 8, pp. 3713-3726, Aug. 2008.
27. I. H. Kim and D. J. Love, "On the Capacity and Design of Limited Feedback Multiuser MIMO Uplinks," *IEEE Transactions on Information Theory*, vol. 54, no. 10, pp. 4712-4724, Oct. 2008.
28. D. J. Love, R. W. Heath, Jr., V. K. N. Lau, D. Gesbert, B. D. Rao, and M. Andrews, "An Overview of Limited Feedback in Wireless Communication Systems," *IEEE Journal on Selected Areas in Communications*, vol. 26, no. 8, pp. 1341-1365, Oct. 2008.
29. S. Y. Park, D. Park, and D. J. Love, "On the Delay Performance in Multi-Antenna Wireless Networks Using Contention-Based Feedback," *IEEE Transactions on Communications*, vol. 56, no. 11, pp. 1769-1774, Nov. 2008.
30. A. D. Dabbagh and D. J. Love, "Multiple Antenna MMSE Based Downlink Precoding with Quantized Feedback or Channel Mismatch," *IEEE Transactions on Communications*, vol. 56, no. 11, pp. 1859-1868, Nov. 2008.
31. S. Y. Park and D. J. Love, "Outage Performance of Multi-Antenna Multicasting for Wireless Networks," *IEEE Transactions on Wireless Communications*, vol. 8, no. 4, pp. 1996-2005, April 2009.
32. A. Jalali and D. J. Love, "Closed-Form Expression for Optimal Two-User MIMO Unitary Precoding," *IEEE Communications Letters*, vol. 13, no. 4, pp. 251-253, April 2009.
33. C. K. Au-Yeung, S. Y. Park, and D. J. Love, "A Simple Dual-Mode Limited Feedback Multiuser Downlink System," *IEEE Transactions on Communications*, vol. 57, no. 5, pp. 1514-1522, May 2009.
34. C. K. Au-Yeung and D. J. Love, "Optimization and Tradeoff Analysis of Two-Way Limited Feedback Beamforming Systems," *IEEE Transactions on Wireless Communications*, vol. 8, no. 5, pp. 2570-2579, May 2009.

35. Y. Ouyang, D. J. Love, and W. J. Chappell, "Body-Worn Distributed MIMO System," *IEEE Transactions on Vehicular Technology*, vol. 58, no. 4, pp. 1752-1765, May 2009. (recipient of 2009 **IEEE Transactions on Vehicular Technology Jack Neubauer Memorial Award**)
36. T. Pande, H. Huh, J. V. Krogmeier, and D. J. Love, "Non-Coherent Receivers for Orthogonal Space-Time CPM," *IEICE Transactions on Communications*, vol. E92-B, no. 6, pp. 2072-2084, June 2009.
37. I. H. Kim, S. Y. Park, D. J. Love, and S. J. Kim, "Improved Multiuser MIMO Unitary Precoding Using Partial Channel State Information and Insights from the Riemannian Manifold," *IEEE Transactions on Wireless Communications*, vol. 8, no. 8, pp. 4014-4023, Aug. 2009.
38. O. Aluko, D. J. Love, J. V. Krogmeier, J. Suh, J. S. Kim, "Feedforward Frameworks to Enhance Decoding in Precoded Multiuser MIMO Systems," *IEEE Signal Processing Letters*, vol. 16, no. 11, pp. 945-948, Nov. 2009.
39. S. Y. Park, D. J. Love, and D. H. Kim, "Capacity Limits of Multi-Antenna Multicasting Under Correlated Fading Channels," *IEEE Transactions on Communications*, vol. 58, no. 7, pp. 2002-2013, July 2010.
40. J. Wang, S.Y. Park, D. J. Love, M. D. Zoltowski, "Throughput Delay Tradeoff for Wireless Multicast Using Hybrid-ARQ Protocols," *IEEE Transactions on Communications*, vol. 58, no. 9, pp. 2741-2751, Sept. 2010.
41. T. Kim, B. Clerckx, D. J. Love, and S. J. Kim, "Limited Feedback Beamforming Systems for Dual-Polarized MIMO Channels," *IEEE Transactions on Wireless Communications*, vol. 9, no. 11, pp. 3425-3439, Nov. 2010.
42. T. Kim, D. J. Love, and B. Clerckx, "Does Frequent Low Resolution Feedback Outperform Infrequent High Resolution Feedback for Multiple Antenna Beamforming Systems?," *IEEE Transactions on Signal Processing*, vol. 59, no. 4, pp. 1654-1669, April 2011.
43. T. Kim, D. J. Love, and B. Clerckx, "MIMO Systems with Limited Rate Differential Feedback in Slowly Varying Channels," *IEEE Transactions on Communications*, vol. 59, no. 4, pp. 1175-1189, April 2011.
44. S. Y. Park and D. J. Love, "Hybrid ARQ Protocol for Multi-Antenna Multicasting Using a Common Feedback Channel," *IEEE Transactions on Communications*, vol. 59, no. 6, pp. 1530-1542, June 2011.
45. C. K. Au Yeung, D. J. Love, and S. Sanayei, "Trellis Coded Line Packing: Large Dimensional Beamforming Vector Quantization and Feedback Transmission," *IEEE Transactions on Wireless Communications*, vol. 10, no. 6, pp. 1844-1853, June 2011.
46. S. Y. Park and D. J. Love, "Measurement-Based Contention Feedback for Multiuser Diversity With Transmit Antenna Selection in Wireless Networks," *IEEE Transactions on Vehicular Technology*, vol. 60, no. 6, pp. 2857-2863, July 2011.
47. I. H. Kim, D. J. Love, and S. Y. Park, "Optimal and Successive Approaches to Signal Design for Multiple Antenna Physical Layer Multicasting," *IEEE Transactions on Communications*, vol. 59, no. 8, pp. 2316-2327, Aug. 2011.
48. Z. Chance and D. J. Love, "Concatenated Coding for the AWGN Channel with Noisy Feedback," *IEEE Transactions on Information Theory*, vol. 57, no. 10, pp. 6633-6649, Oct. 2011.
49. Y. J. Kim, X. Li, T. Kim, and D. J. Love, "Combination Lock-Like Differential Codebook for Temporally Correlated Channels," *Electronics Letters*, vol. 48, no. 1, pp. 45-47, Jan. 2012.
50. K. Kim, T. Kim, D. J. Love, and I. H. Kim, "Differential Feedback in Codebook-Based Multiuser MIMO Systems in Slowly Varying Channels," *IEEE Transactions on Communications*, vol. 60, no. 2, pp. 578-588, Feb. 2012.

51. B. J. Love, D. J. Love, J. V. Krogmeier, "Like Deck Chairs on the Titanic: Why Spectrum Reallocation Won't Avert the Coming Data Crunch But Technology Might Keep the Wireless Industry Afloat," *Washington University in St. Louis Law Review*, vol. 89, pp. 705-719, 2012.
52. M. Agrawal, Z. Chance, D. J. Love, and V. Balakrishnan, "Using Channel Output Feedback to Increase Throughput in Hybrid-ARQ," *IEEE Transactions on Signal Processing*, vol. 60, no. 12, pp. 6465-6480, Dec. 2012.
53. A. J. Duly, D. J. Love, and J. V. Krogmeier, "Time-Division Beamforming for MIMO Radar Waveform Design," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 49, no. 2, pp. 1210-1223, April 2013.
54. S. Hur, T. Kim, D. J. Love, J. V. Krogmeier, T. Thomas, A. Ghosh, "Millimeter Wave Beamforming for Wireless Backhaul and Access in Small Cell Networks," *IEEE Transactions on Communications*, vol. 61, no. 10, pp. 4391-4403, Oct. 2013. (recipient of 2016 **IEEE Communications Society Stephen O. Rice Prize**)
55. J. Choi, Z. Chance, D. J. Love, and U. Madhow, "Noncoherent Trellis Coded Quantization: A Practical Limited Feedback Technique for Massive MIMO Systems," *IEEE Transactions on Communications*, vol. 61, no. 12, pp. 5016-5029, Dec. 2013.
56. S. Park, J. Choi, D. J. Love, "Multicell Cooperative Scheduling for Two-Tier Cellular Networks," *IEEE Transactions on Communications*, vol. 62, no. 2, pp. 536-551, Feb. 2014.
57. R. Johari, J. V. Krogmeier, and D. J. Love, "Analysis and Practical Considerations in Implementing Multiple Transmitters for Wireless Power Transfer via Coupled Magnetic Resonance," *IEEE Transactions on Industrial Electronics*, vol. 61, no. 4, pp. 1774-1783, April 2014.
58. D. R. Brown III and D. J. Love, "On the Performance of MIMO Nullforming with Random Vector Quantization Limited Feedback," *IEEE Transactions on Wireless Communications*, vol. 13, no. 5, pp. 2884-2893, May 2014.
59. A. Duly, T. Kim, D. J. Love and J. Krogmeier, "Closed-Loop Beam Alignment for Massive MIMO Channel Estimation," *IEEE Communications Letters*, vol. 18, no. 8, pp. 1439-1442, Aug. 2014.
60. J. Choi and D. J. Love. "Bounds on Eigenvalues of Spatial Correlation Matrix," *IEEE Communications Letters*, vol. 18, no. 8, pp. 1391-1394, Aug. 2014.
61. B. M Hochwald, D. J. Love, S. Yan, P. Fay, and J. Jin, "Incorporating Specific Absorption Rate (SAR) Constraints into Wireless Signal Design," *IEEE Communications Magazine*, vol. 52, no. 9, pp. 126-133, Sept. 2014.
62. S. Noh, M. D. Zoltowski, Y. Sung, and D. J. Love, "Pilot Beam Pattern Design for Channel Estimation in Massive MIMO Systems," *IEEE Journal of Selected Topics in Signal Processing*, vol. 8, no. 5, pp. 787-801, Oct. 2014.
63. J. Choi, D. J. Love, and P. Bidigare, "Downlink Training Techniques for FDD Massive MIMO Systems: Open-Loop and Closed-Loop Training with Memory," *IEEE Journal of Selected Topics in Signal Processing*, vol. 8, no. 5, pp. 802-814, Oct. 2014. (recipient of 2015 **IEEE Signal Processing Society Best Paper Award**)
64. T. Kim, D. J. Love, M. Skoglund, and Z.-Y. Jin, "An Approach to Sensor Network Throughput Enhancement by PHY aided MAC," *IEEE Transactions on Wireless Communications*, vol. 14, no. 3, pp. 670-684, Feb. 2015.
65. J. Choi, D. J. Love, and T. P. Bidigare, "Coded Distributed Diversity: A Novel Distributed Reception Technique for Wireless Communication Systems," *IEEE Transactions on Signal Processing*, vol. 63, no. 5, pp. 1310-1321, March 2015.

66. J. Choi, D. J. Love, and T. Kim, "Trellis-Extended Codebooks and Successive Phase Adjustment: A Path from LTE-Advanced to FDD Massive MIMO Systems," *IEEE Transactions on Wireless Communications*, vol. 14, no. 4, pp. 2007-2016, April 2015.
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68. V. Raghavan, J. Choi, and D. J. Love "Design Guidelines for Limited Feedback in the Spatially Correlated Broadcast Channel," *IEEE Transactions on Communications*, vol. 63, no. 7, pp. 2524-2540, July 2015.
69. B. Lee, J. Choi, J.-Y. Seol, D. J. Love, and B. Shim, "Antenna Grouping Based Feedback Compression for FDD-Based Massive MIMO Systems," *IEEE Transactions on Communications*, vol. 63, no. 9, pp. 3261-3274, Sept. 2015.
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71. J. Song, J. Choi, S. G. Larew, D. J. Love, T. A. Thomas, and A. Ghosh, "Adaptive Millimeter Wave Beam Alignment for Dual-Polarized MIMO Systems," *IEEE Transactions on Wireless Communications*, vol. 14, no. 11, pp. 6283-6296, Nov. 2015.
72. Z. Ahmad, Z. Chance, D. J. Love, and C.C. Wang, "Concatenated Coding Using Linear Schemes for Gaussian Broadcast Channels With Noisy Channel Output Feedback," *IEEE Transactions on Communications*, vol. 63, no. 11, pp. 4576-4590, Nov. 2015.
73. A. Marcum, J. V. Krogmeier, D. J. Love, and A. Sprintson, "Analysis and Implementation of Asynchronous Physical Layer Network Coding," *IEEE Transactions on Wireless Communications*, vol. 14, no. 12, pp. 6595-6607, Dec. 2015.
74. D. Palguna, D. J. Love, and I. Pollak, "Secondary Spectrum Auctions for Markets With Communication Constraints," *IEEE Transactions on Wireless Communications*, vol. 15, no. 1, pp. 1536-1276, Jan. 2016.
75. S. Noh, M. D. Zoltowski, and D. J. Love, "Training Sequence Design for Feedback Assisted Hybrid Beamforming in Massive MIMO Systems," *IEEE Transactions on Communications*, vol. 64, no. 1, pp. 187-200, Jan. 2016.
76. M. Agrawal, D. J. Love, and V. Balakrishnan, "Communicating Over Filter-and-Forward Relay Networks With Channel Output Feedback," *IEEE Transactions on Signal Processing*, vol. 64, no. 5, pp. 1117-1131, March 2016.
77. A. A. I. Ibrahim, T. Kim, and D. J. Love, "On the Achievable Rate of Generalized Spatial Modulation Using Multiplexing Under a Gaussian Mixture Model," *IEEE Transactions on Communications*, vol. 64, no. 4, pp. 1588-1599, April 2016.
78. J. Park, J. Kim, and D. J. Love, "Antenna Reliability Ordering Technique for Unequal Error Protection in Jointly Detected MIMO Systems" *IEEE Transactions on Vehicular Technology*, vol. 65, no. 9, pp. 7136-7148, September 2016.
79. D. Palguna, D. J. Love, T. A. Thomas, and A. Ghosh, "Millimeter Wave Receiver Design Using Low Precision Quantization and Parallel $\Delta\Sigma$ Architecture," *IEEE Transactions on Wireless Communications*, vol. 15, no. 10, pp. 6556-6569, October 2016.
80. I. Y. Chun, S. Noh, D. J. Love, T. M. Talavage, S. Beckley, and S. J. Kisner, "Mean Squared Error Based Excitation Pattern Design for Parallel Transmit and Receive SENSE MRI Image Reconstruction," *IEEE Transactions on Computational Imaging*, vol. 2, no. 4, pp. 424-439, December 2016.

81. W. Shin, M. Vaezi, B. Lee, D. J. Love, J. Lee, and H. V. Poor, "Coordinated Beamforming for Multi-Cell MIMO-NOMA," *IEEE Communications Letters*, vol. 21, no.1, pp. 84-87, January 2017.
82. J. Song, J. Choi, and D. J. Love, "Common Codebook Millimeter Wave Beam Design: Designing Beams for Both Sounding and Communication with Uniform Planar Arrays," *IEEE Transactions on Communications*, vol. 65, no. 4, pp. 1859-1872, April 2017.
83. Y. Han, J. Lee, and D. J. Love, "Compressed Sensing-Aided Downlink Channel Training for FDD Massive MIMO Systems," *IEEE Transactions on Communications*, vol. 65, no. 7, pp. 2852-2862, July 2017.
84. S. Noh, M. D. Zoltowski, and D. J. Love, "Multi-Resolution Codebook and Adaptive Beamforming Sequence Design for Millimeter Wave Beam Alignment," *IEEE Transactions on Wireless Communications*, vol. 16, no. 9, pp. 5689-5701, Sept. 2017.
85. W. Shin, M. Vaezi, B. Lee, D. J. Love, J. Lee, and H. V. Poor, "Non-Orthogonal Multiple Access in Multi-Cell Networks: Theory, Performance, and Practical Challenges," *IEEE Communications Magazine*, vol. 55, no. 10, pp. 176-183, Oct. 2017.
86. D. Ogbe, D. J. Love, and V. Raghavan, "Noisy Beam Alignment Techniques for Reciprocal MIMO Channels," *IEEE Transactions on Signal Processing*, vol. 65, no. 19, pp. 5092-5107, Oct. 2017.
87. D. Ying, D. J. Love, and B. M. Hochwald, "Sum-Rate Analysis for Multi-User MIMO Systems with User Exposure Constraints," *IEEE Transactions on Wireless Communications*, vol. 16, no. 11, pp. 7376-7388, Nov. 2017.
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92. J. Song, J. Choi, T. Kim and D. J. Love, "Advanced Quantizer Designs for FDD-Based FD-MIMO Systems Using Uniform Planar Arrays," *IEEE Transactions on Signal Processing*, vol. 16, no. 14, pp. 3891-3905, July 2018.
93. M. R. Castellanos, V. Raghavan, J. H. Ryu, O. H. Koymen, J. Li, D. J. Love, and B. Peleato, "Channel Reconstruction-Based Hybrid Precoding for Millimeter Wave Multi-User MIMO Systems," accepted to *IEEE Journal of Selected Topics in Signal Processing*, March 2018.
94. W. Zhang, T. Kim, D. J. Love, and E. Perrins, "Leveraging the Restricted Isometry Property: Improved Low-Rank Subspace Decomposition for Hybrid Millimeter-Wave Systems," accepted to *IEEE Transactions on Communications*, June 2018.
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26. B. Clerckx, D.-D. Hwang, C. K. Au Yeung, D. J. Love, and T. J. Kim "Method and Apparatus for Interference Alignment in a Wireless Communication System," U.S. Patent # 9,391,730, July 12, 2016.
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Multiple international patents also filed.

Short Courses and Workshops:

1. Participated in Samsung 4G Forum, Jeju, S. Korea, August 31-September 1 2006.
2. Taught “Multiple-Input Multiple-Output Wireless Systems: Signaling, Design, and Fundamental Limits” short course at the IEEE Radio and Wireless Symposium, San Diego, CA, Jan. 22, 2009. (with N. Prasad and V. Raghavan)
3. Participated in National Science Foundation (NSF) Workshop on “Beyond Cognitive Radios,” Urbana, IL, June 13-14, 2011.
4. Organized Purdue Defense Spectrum Workshop held as part of the Institute for Defense Innovation (IDI) Summit, West Lafayette, IN, May 3, 2012.
5. Participated in Federal Networking and Information Technology Research & Development (NITRD) Wireless Spectrum Research and Development (WSRD) Workshop III, Boulder, CO, July 24, 2012. WSRD was formed to inventory, coordinate, and make recommendations on Federal programs to advance the goals of the June 28, 2010 Presidential Memorandum: Unleashing the Wireless Broadband Revolution, Section 3. In addition, WSRD will work with academia and the private sector to help develop priorities, encourage private investment, and develop public/private partnerships when appropriate.
6. Attended “Leadership Skills for Engineering and Science Faculty” presented by Charles E. Leiserson and Chuck McVinney, West Lafayette, IN, March 3-4, 2014.
7. Participated in National Science Foundation (NSF) Millimeter Wave RCN Workshop, Washington, D.C., Dec. 7-8, 2016.
8. Participated in ADVANCE/OVPEC Faculty Search Committee Workshop, West Lafayette, IN, Jan. 31, 2018.
9. Participated in Strategies to Attract and Support URM Graduate Students Workshop, West Lafayette, IN, April 19, 2018.