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## **Professional Preparation**

- **Ph.D.** in Electrical Engineering, Clemson University, December 1998
  - *Dissertation:* “Nonuniform phase-shift-key modulation for multimedia transmission in mobile wireless communications.”
- **M.S.** in Electrical Engineering, Clemson University, August 1995
  - *Thesis:* “Phase-difference modulation and soft-decision decoding for mobile radio channels.”
- **B.S.** in Computer Engineering, Clemson University, May 1993
  - Minor in Mathematical Sciences

## **Professional Employment**

- *August 2015–present*, **Professor**, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida.
- *August 2005–present*, **Associate Professor**, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida.
- *July 2010–July 2012*, **Lead Developer**, Hey Squids! Mobile Apps, developing iPhone applications for technical conferences, Gainesville, Florida.
- *August 2004–August 2010*, **Vice President of Engineering**, Extemporal Wireless, Inc., Gainesville, Florida.
- *July 1999–July 2005*, **Assistant Professor**, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida.
- *January 1999–July 1999*, **Post-Doctoral Fellow**, Department of Electrical and Computer Engineering, Clemson University, Clemson, South Carolina.
- *August 1993–December 1998*, **Research Assistant**, Department of Electrical and Computer Engineering, Clemson University, Clemson, South Carolina.

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## Honors

- Office of Naval Research Summer Faculty Fellow, 2012, 2014
- Fred W. Ellersick Award for Best Paper in the Unclassified Technical Program, awarded by the IEEE Communications Society at the 2013 IEEE Military Communications Conference (MILCOM), November 2013 (only two-time winner)
- IEEE Military Communications Conference Lifetime Award for Technical Achievement; for Outstanding, Sustained Technical Contributions to Military Communications; awarded by IEEE Communications Society, 2012
- Outstanding Young Alumni, Clemson University College of Engineering and Science, 2011
- Finalist for Eta Kappa Nu Outstanding Young Electrical Engineer, 2004
- Fred W. Ellersick Award for Best Paper in the Unclassified Technical Program, awarded by the IEEE Communications Society at the 1996 IEEE Military Communications Conference (MILCOM), October 1996

## Publications

### Chapters in Books

- [1] Z. Kan, J. M. Shea, and W. E. Dixon, "Navigation function based decentralized control of a multi-agent system with network connectivity constraints," in *Examining Robustness and Vulnerability of Networked Systems*, ser. NATO Science for Peace and Security Series – D: Information and Communication Security, S. Butenko, E. L. Pasilio, and V. Shylo, Eds., vol. 37. IOS Press, 2014, pp. 104–119.
- [2] L. Navaravong, J. M. Shea, E. L. Pasilio, G. L. Barnette, and W. E. Dixon, "Optimizing network topology to reduce aggregate traffic in systems of mobile agents," in *Models, Algorithms, and Technologies for Network Analysis*, ser. Springer Proceedings in Mathematics & Statistics, B. Goldengorin, V. A. Kalyagin, and P. M. Pardalos, Eds., vol. 32. Springer New York, 2013, pp. 129–149.
- [3] S. Subramanian, E. Pasilio, J. M. Shea, J. W. Curtis, and W. E. Dixon, "Throughput maximization in CSMA networks with collisions and hidden terminals," in *Dynamics of Information Systems: Mathematical Foundations*, ser. Springer Proceedings in Mathematics & Statistics, A. Sorokin, R. Murphey, M. T. Thai, and P. M. Pardalos, Eds. Springer New York, 2012, vol. 20, pp. 195–205. [Online]. Available: [http://dx.doi.org/10.1007/978-1-4614-3906-6\\_10](http://dx.doi.org/10.1007/978-1-4614-3906-6_10)
- [4] J. M. Shea, T. F. Wong, C. W. Wong, and B. Choi, "Source and channel coding techniques for cooperative communications," in *Cooperative Communications for Improved Wireless Network Transmission: Frameworks for Virtual Antenna Array Applications*, M. Uysal, Ed. IGI Global, 2009.
- [5] A. Avudainayagam, J. M. Shea, T. F. Wong, and Y. Fang, "Cooperative diversity techniques in wireless communications," in *Ad Hoc and Sensor Networks*, Y. Pan and Y. Xiao, Eds. Nova Science, 2004, ch. 12.
- [6] J. M. Shea and T. F. Wong, "Multidimensional codes," in *Encyclopedia of Telecommunications*, J. G. Proakis, Ed. John Wiley & Sons, 2003, vol. 3, pp. 1538–1551.

## Papers Published in Refereed Journals

- [1] T.-H. Cheng, Z. Kan, J. R. Klotz, J. Shea, and W. E. Dixon, "Event-triggered control of multi-agent systems for fixed and time-varying network topologies," accepted for publication in *IEEE Trans. Automat. Control*.
- [2] Z. Kan, J. Klotz, E. Doucette, J. M. Shea, and W. E. Dixon, "Decentralized rendezvous of nonholonomic robots with sensing and connectivity constraints," *ASME J. Dynamic Sys., Measur., and Contr.*, vol. 139, no. 2, pp. 024 501–1 – 024 501–7, 2017.
- [3] Z. Kan, J. M. Shea, and W. E. Dixon, "Leader-follower containment control over directed random graphs," *Automatica*, vol. 66, pp. 56–62, Apr. 2016.
- [4] J. Klotz, Z. Kan, J. M. Shea, E. L. Pasilio, Jr., and W. E. Dixon, "Asymptotic synchronization of a leader-follower network of uncertain Euler-Lagrange systems," *IEEE Trans. Control Network Syst.*, vol. 2, no. 2, pp. 174–182, June 2015.
- [5] Z. Kan, L. Navaravong, J. M. Shea, E. Pasilio, Jr., and W. E. Dixon, "Graph matching-based formation reconfiguration of networked agents with connectivity maintenance," *IEEE Trans. Control Network Syst.*, pp. 24–35, Mar. 2015.
- [6] S. Subramanian, J. M. Shea, and W. E. Dixon, "Power control for cellular communications with time-varying channel uncertainties," *Asian Journal of Control*, vol. 16, no. 5, pp. 1459–1469, Sept. 2014.
- [7] L. Navaravong, Z. Kan, J. M. Shea, and W. E. Dixon, "Formation reconfiguration for mobile robots with network connectivity constraints," *IEEE Network*, vol. 26, no. 4, pp. 18–24, July 2012.
- [8] B. Choi, T. F. Wong, and J. M. Shea, "Geographic transmission with optimized relaying (GATOR) for the uplink in mesh networks," *IEEE Trans. Wireless Commun.*, vol. 11, no. 6, pp. 2095–2105, June 2012.
- [9] Z. Kan, A. P. Dani, J. M. Shea, and W. E. Dixon, "Network connectivity preserving formation stabilization and obstacle avoidance via a decentralized controller," *IEEE Trans. Automatic Control*, vol. 57, no. 7, pp. 1827–1832, Dec. 2012.
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- [11] C. W. Wong, T. F. Wong, and J. M. Shea, "Secret-sharing LDPC codes for the BPSK-constrained Gaussian wiretap channel," *IEEE Trans. Inform. Forensics and Security*, vol. 6, no. 3, pp. 551–564, Sept. 2011, special issue on Using the Physical Layer for Securing the Next Generation of Communication Systems. [Online]. Available: [http://ieeexplore.ieee.org/xpls/abs\\_all.jsp?arnumber=5750045&tag=1](http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5750045&tag=1)
- [12] M. Rao, T. D. Goswami, J. M. Shea, and J. Glover, "On the optimal receiver activation function for distance-based geographic transmissions," *SIAM J. Applied Math.*, vol. 71, pp. 586–604, Apr. 2011. [Online]. Available: [http://epubs.siam.org/siap/resource/1/smjmap/v71/i2/p586\\_s1](http://epubs.siam.org/siap/resource/1/smjmap/v71/i2/p586_s1)
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- [14] T. F. Wong, M. Bloch, and J. M. Shea, "Secret sharing over fast-fading MIMO wiretap channels," *EURASIP J. Wireless Commun. and Networking special issue on Wireless Physical Layer Security*, vol. 2009, Sept. 2009, article ID 506973, 17 pages, 2009. [Online]. Available: <http://downloads.hindawi.com/journals/wcn/2009/506973.pdf>
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- [35] —, "Bit-by-bit soft-decision decoding of trellis-coded  $M$ -DPSK modulation," *IEEE Commun. Letters*, vol. 1, pp. 133–135, Sept. 1997.

### Papers at Refereed Conferences

- [1] J. Feng, W. E. Dixon, and J. M. Shea, "Fast algorithms for jammer placement to partition a wireless network," to appear in *Proc. 2017 IEEE Int. Conf. Commun.* [Online]. Available: [http://wireless.ece.ufl.edu/jshea/pubs/jixin\\_icc17.pdf](http://wireless.ece.ufl.edu/jshea/pubs/jixin_icc17.pdf)
- [2] T. Ward, E. L. Pasilio, Jr., J. M. Shea, and T. F. Wong, "Autonomous navigation to an RF source in multipath environments," in *Proc. IEEE Military Commun. Conf.*, Baltimore, MD, Nov. 2016, pp. 198–203.
- [3] Z. Kan, J. M. Shea, E. A. Doucette, J. W. Curtis, and W. E. Dixon, "Coverage control based effective jamming strategy for wireless networks," in *Proc. Am. Contr. Conf. (ACC)*, July 2016, pp. 4655–4660.
- [4] J. Feng, E. L. Pasilio, Jr., W. E. Dixon, and J. M. Shea, "An optimal jamming strategy to partition a wireless network," in *Proc. IEEE Military Commun. Conf.*, Tampa, FL, Oct. 2015, pp. 978–984.
- [5] T.-H. Cheng, Z. Kan, J. R. Klotz, J. M. Shea, and W. E. Dixon, "Decentralized event-triggered control of networked systems—Part 1: Leader-follower consensus under switching topologies," in *Proc. Am. Contr. Conf. (ACC)*, Chicago, IL, July 2015, pp. 5438–5443.
- [6] —, "Decentralized event-triggered control of networked systems—Part 2: Containment control," in *Proc. Am. Contr. Conf. (ACC)*, Chicago, IL, July 2015, pp. 5438–5443.

- [7] J. Feng, X. Li, E. L. Pasilliao, Jr., and J. M. Shea, “Jammer placement to partition wireless network,” in *Proc. IEEE Global Commun. Conf. Workshop on Wireless Networking and Control for Unmanned Autonomous Vehicles*, Austin, TX, Dec. 2014, pp. 1487–1492.
- [8] B. Choi and J. M. Shea, “Multi-hop geographic transmission scheme for the uplink in mesh networks,” in *Proc. IEEE Military Commun. Conf.*, Baltimore, MD, Oct. 2014, pp. 871–878.
- [9] O. Adeladan and J. M. Shea, “Link-layer throughput of FHSS with interference mitigation: Analysis and cross layer design,” in *Proc. IEEE Military Commun. Conf.*, Baltimore, MD, Oct. 2014, pp. 897–903.
- [10] T.-H. Cheng, Z. Kan, J. M. Shea, and W. E. Dixon, “Decentralized event-triggered control for leader-follower consensus,” in *Proc. IEEE Conf. Decision and Control*, Los Angeles, CA, Dec. 2014, pp. 1244–1249.
- [11] S. Subramanian, J. M. Shea, E. L. Pasilliao, Jr., M. M. Carvalho, and W. Dixon, “Efficient spectrum allocation in multiband CSMA networks,” in *Proc. IEEE Wireless Commun. and Networking Conf. (WCNC)*, Istanbul, Turkey, Apr. 2014, pp. 1591–1596.
- [12] J. Klotz, Z. Kan, J. M. Shea, E. Pasilliao, and W. E. Dixon, “Asymptotic synchronization of leader-follower networks of uncertain Euler-Lagrange systems,” in *Proc. IEEE Conf. Decision and Control*, Florence, Italy, Dec. 2013, pp. 6536–6541.
- [13] L. Navaravong, J. M. Shea, E. L. Pasilliao, Jr., and W. Dixon, “Graph matching-based topology reconfiguration algorithm for systems of networked autonomous vehicles,” in *Proc. IEEE/AFCEA Military Commun. Conf.*, San Diego, CA, Nov. 2013, pp. 888–893.
- [14] J. M. Shea and J. P. Macker, “Automatic selection of number of clusters in networks using relative eigenvalue quality,” in *Proc. IEEE/AFCEA Military Commun. Conf.*, San Diego, CA, Nov. 2013, pp. 131–136.
- [15] O. Adeladan and J. M. Shea, “Multiple-access interference mitigation and iterative demodulation of CPFSK in asynchronous slow FHSS systems,” in *Proc. IEEE/AFCEA Military Commun. Conf.*, San Diego, CA, Nov. 2013, pp. 1581–1586.
- [16] S. Subramanian, J. W. Curtis, E. L. Pasilliao, J. M. Shea, and W. E. Dixon, “Continuous congestion control for differentiated-services networks,” in *Proc. IEEE Conf. on Decision and Control (CDC)*, Maui, Hawaii, Dec. 2012, pp. 4591–4596.
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- [26] C. W. Wong, T. F. Wong, and J. M. Shea, "An LDPC-based key-agreement scheme over the fast-fading wiretap channel," in *Proc. IEEE/AFCEA Military Commun. Conf. (MILCOM)*, Baltimore, MD, Nov. 2011, pp. 347–352.
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- [63] J. M. Shea, T. F. Wong, Y. Fang, A. Avudainayagam, W.-H. Wong, and X. Li, "Cooperative diversity in tactical networks," poster at Workshop on 'Cross-Layer Issues in the Design of Tactical Mobile Ad Hoc Wireless Networks: Integration of Communication and Networking Functions to Support Optimal

Information Management', NATO Research and Technology Organization, Information Science and Technology Panel, Task Group 12, June 2004.

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- [77] J. M. Shea and T. F. Wong, "Concatenated codes based on multidimensional parity-check codes and turbo codes," in *Proc. 2001 IEEE Military Commun. Conf.*, vol. 2, Washington, D.C., Oct. 2001, pp. 1152–1156.

- [78] J. M. Shea, "Improving the performance of turbo codes through concatenation with rectangular parity check codes," in *Proc. 2001 IEEE Int. Symp. Inform. Theory*, Washington, D.C., June 2001, p. 144.
- [79] T. F. Wong and J. M. Shea, "Multi-dimensional parity check codes for bursty channels," in *Proc. 2001 IEEE Int. Symp. Inform. Theory*, Washington, D.C., June 2001, p. 123.
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- [83] —, "Adaptive signaling for multimedia transmission in CDMA cellular radio systems," in *Proc. 1998 IEEE Military Commun. Conf.*, Boston, MA, Oct. 1998, pp. 113–117.
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- [85] M. B. Pursley and J. M. Shea, "Convolutionally encoded phase-shift-key modulation for multimedia multicast transmission in mobile wireless networks," in *Proc. 1997 IEEE Military Commun. Conf.*, vol. 2, Monterey, CA, Nov. 1997, pp. 978–982.
- [86] —, "Phase-shift-key modulation for multimedia multicasting transmission in mobile wireless networks," in *Proc. 1996 IEEE Military Commun. Conf.*, vol. 1, McLean, VA, Oct. 1996, pp. 210–214.
- [87] —, "Soft-decision decoding for trellis coding and phase-difference modulation," in *Proc. 1995 IEEE Int. Symp. Inform. Theory*, Whistler, British Columbia, Canada, Sept. 1995, p. 60.

#### **Invited Papers at Conferences and Workshops**

- [1] T. D. Goswami, J. M. Shea, M. Rao, and J. Glover, "Enhancing transport capacity with optimum energy allocation for geographic transmissions," in *Proc. Asilomar Sig. & Syst. Conf.*, Monterey, CA, Nov. 2009, 5 pages.
- [2] S. Boppana and J. M. Shea, "Overlapped transmission in wireless ad hoc networks," in *Proc. 2006 Int. Conf. Commun. Circuits and Systems*, vol. 2, Guilin, China, Jun. 2006, pp. 1309–1314.
- [3] J. M. Shea, "Adaptive nonuniform PSK signaling in CDMA wireless communications," in *Proc. 1999 IEEE Inform. Theory and Commun. Workshop*, Kruger National Park, South Africa, June 1999, pp. 48–50.
- [4] M. B. Pursley and J. M. Shea, "Modulation and coding for multimedia capability in multicast transmissions," in *Proc. 1997 Int. Symp. Commun. Theory and Applications*, Charlotte Mason College, Amble-side, U.K., July 1997, pp. 280–281.

## Patents

- [1] J. M. Shea, “Method and coding means for error-correction utilizing concatenated parity and turbo codes,” Gainesville, FL, Aug. 2006.

## Invited Seminars

- [1] J. M. Shea, 1st Annual Workshop of the Florida Institute for National Security, Fort Walton Beach, FL, Apr.. 2016.
- [2] —, “Formation control and attack for networked autonomous vehicles,” 3rd Workshop on Cognition and Control, University of Florida, Gainesville FL, Jan. 2015.
- [3] —, “Opportunistic reception and geographic transmission in wireless networks,” Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, Dec. 2009.
- [4] —, “Coding techniques for cooperative communications,” Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea, Dec. 2009.
- [5] —, “Attack and defense in wireless networks,” Department of Electrical and Computer Engineering Brown Bag Seminar, University of Florida, Gainesville, FL, Apr. 2008.
- [6] —, “Overlapped transmission in wireless ad hoc networks,” Tsinghua Information Forum, Tsinghua University, Beijing, China, June 2006.
- [7] —, “Collaborative reception and interference excision,” IEEE Seminar, West Virginia University, Morgantown, WV, Oct. 2003.
- [8] —, “Iterative decoding: problems and opportunities,” Communications Seminar, Clemson University, Clemson, SC, Oct. 2002.
- [9] —, “Advanced error-control coding techniques: Turbo codes and beyond,” Department of Electrical and Computer Engineering Brown Bag Seminar, University of Florida, Gainesville, FL, Oct. 2000.

## Research Funding

- \$99,363, “EAGER: SC2: Intelligent spectrum collaboration via a dynamically reconfigurable radio architecture,” **Co-PI** with Tan Wong (**PI**).
- \$402,950, “EARS: Cloud-based Oblivious Spectrum Mapping and Allocation,” October 2016 to September 2019, **PI** with Tan Wong and Patrick Traynor (**Co-PIs**).
- \$201,002, “Assured Communication for Cooperative Engagement,” Air Force Research Laboratory, May 2015 to November 2017. **PI** with Tan Wong(**Co-PI**).
- \$2,815,668, “AFRL Mathematical Modeling and Optimization Institute,” Air Force Research Laboratory, May 2015 to May 2017 (second two years of continuing institute). **Co-PI** with David Hahn (**PI**) and Warren E. Dixon (**Co-PI**).
- \$1,798,078, “AFRL Mathematical Modeling and Optimization Institute,” Air Force Research Laboratory, May 2013 to May 2015 (first two years of continuing institute). **Co-PI** with David Hahn (**PI**) and Warren E. Dixon (**Co-PI**).

- \$380,000, “NeTS: Small: Network Connectivity and Security for Cooperative Autonomous Vehicles”, National Science Foundation (NSF), **PI** with Warren E. Dixon (**Co-PI**).
- \$468,000, “Vision-Based Guidance and Control Algorithms Research,” Air Force Research Lab (AFRL) Munitions and Guidance Directorate, May 2011 – August 2013. **Co-PI**. With Warren E. Dixon (**PI**).
- \$51,275, “MILCOM 2010,” Lockheed-Martin Corp., Feb. 2009 to Dec. 2010, **PI**.
- \$130,000 (UF’s portion), “USE: Using Spectrum Efficiently,” Air Force Office of Scientific Research (AFOSR), June 2007 to Nov. 2009. **Co-PI** with T. F. Wong (**PI** of UF subcontract from Purdue, J. Lehnert (**PI**)).
- \$419,998, “NeTS-NBD: Simulcast Enhanced Wireless Networks,” National Science Foundation (NSF), Aug. 2006 to July 2009. **Co-PI** with T. F. Wong.
- \$109,604, “HANET: Heterogeneous Ad Hoc Network Testbed,” Army Research Office, Defense University Research Instrumentation Program (DURIP), May 2004 to Oct. 2005. **PI** with T. F. Wong and Y. Fang.
- \$67,200, “Reconfigurable Multi-node Wireless Communication Testbed,” *National Science Foundation*, Sept. 2002–Aug. 2006 **Co-PI** with T. F. Wong (**PI**) and Y. Fang.
- \$449,998 + \$13,080 cost sharing by University of Florida, “ITR: Cooperative Communications Schemes for Wireless Networks,” *National Science Foundation*, July 1, 2002–June 30, 2006, **Co-PI** with T. F. Wong (**PI**) and Y. Fang.
- \$212,631, “Adaptive Protocols for Mobile Wireless Networks,” Multidisciplinary Research of the University Research Initiative (MURI) funded by the Department of Defense, **PI** of subcontract from Clemson University, with M. B. Pursley (**PI**) et al., Apr. 2000–Nov. 2005.
- \$275,199, “Collaborative transmission and reception,” Office of Naval Research, May 1, 2002–Sept. 2004, **Co-PI** with T. F. Wong (**PI**) and Y. Fang.
- \$72,145, “Cross-layer Optimization: Network Diversity Through Relaying in Ad Hoc Networks,” Harris Corporation, Oct. 2003–July 2004, **PI** with Y. Fang and T. F. Wong.
- \$280,472, “Proof of Concept for Using Airborne Traffic Surveillance Systems for Florida and ITS Applications”, Florida Department of Transportation, Nov. 2002–July 2004, with H. Latchman (**PI**), T. F. Wong, Y. Fang, J. McNair, D. Bloomquist, and I. Lei.
- \$298,216, “Comparative Study of Spread Spectrum and Time Modulation Ultra-Wideband Communications,” *Air Force Research Lab*, June 1, 2002–Oct. 31, 2003, **Co-PI** with T. F. Wong (**PI**) and Y. Fang.
- \$57,609, “Research and Development Study to Evaluate the Power Bandwidth-Efficient Signaling in a Jamming Environment,” MIT Lincoln Laboratories, Mar. 2000–Mar. 2002, **PI**.
- \$22,500, “Concatenated Coding Schemes for Mobile Wireless Communications,” Southeastern Center for Electrical Engineering Education Development Fund Grant, July 2001–June 2002, **PI**.
- \$114,541, “OFDM Technologies and QoS MAC Protocols for Fixed Wireless LAN,” Samsung Electro-Mechanics, July 2001–June 2002, **Co-PI** with T. F. Wong (**PI**) and Y. Fang.
- \$10,068, “Research in Residential Powerline Communications,” Intellon Corp., June 2000–Dec. 2001, **Co-PI** with T. F. Wong (**PI**).

## Professional Activities

- Editor/Associate Editor
  - *IEEE Wireless Communications* magazine, November 2010–present
  - *IEEE Transactions on Wireless Communications*, July 2008–July 2012
  - *IEEE Transactions on Vehicular Technology*, 2002–2007
- Technical Program Committee Chair
  - IEEE Military Communications Conference, Unclassified Program, 2010
- Conference Board Member
  - IEEE Military Communications Conference, January 2014–present
  - IEEE Military Communications Conference, Non-voting Member, 2011–2013
- Steering Committee Member
  - IEEE Military Communications Conference, Technical Program, 2014–present
  - IEEE Military Communications Conference, Technical Program, 2007–2009
- Technical Program Committee Track Co-chair
  - IEEE Military Communications Conference 2015, Track 5: Selected Topics in Communications
  - IEEE Military Communications Conference 2014, Networking: Architectures, Management, Protocols, and Performance Track
  - IEEE Personal, Indoor and Mobile Radio Communications (PIMRC) 2008, MAC and Cross-layer Design Track
  - IEEE Military Communications Conference 2007, Modulation, Coding, and Signal Processing (MCS) Track
  - IEEE Vehicular Technology Conference Fall 2007, Transmission Technology Track
- Technical Program Committee Member
  - IEEE Wireless Communications and Networking Conference, Track 2, MAC and Cross-Layer Design, 2012, 2014, 2015
  - IEEE Military Communications Conference, Track 2, Network Protocols and Performance, 2011, 2012, 2013, 2015
  - IEEE Military Communications Conference, Track 1, Waveforms and Signal Processing, 2012, 2013
  - IEEE Global Communications Conference (GlobeCom), Wireless Communications Symposium, 2007, 2013, 2014, 2015
  - IEEE Global Communications Conference, Communications Theory Symposium, 2010, 2011, 2012
  - IEEE International Conference on Communications, Signal Processing for Communications Symposium, 2010

- IEEE International Conference on Communications, Wireless Communications Symposium, 2007, 2009
  - IEEE International Conference on Communications, Cooperative Networks Workshop, 2008
  - IEEE Vehicular Technology Conference, 2003
- Session Organizer and/or Chair
    - Session Chair, IEEE Wireless Communications and Networking Conference, 2014, session PHY01 “Capacity 1”
    - Session Chair, IEEE Wireless Communications and Networking Conference, 2014, session MAC08 “Poster Session II”
    - Session Chair, IEEE Military Communications Conference, 2013, Track 2, Session 31, “Vehicular Networks”
    - Session Chair, IEEE Global Communications Conference, session WC07M2 “Network Coding”
    - Session Chair, Conference on Information Sciences and Systems 2007, session WA5 “MIMO I”
    - Session Organizer and Chair, IEEE Military Communications Conference 2004, session on Spatial Diversity in Mobile Networks
    - Session Co-organizer and Chair, IEEE Military Communications Conference 2003, session on Iterative Decoding and Detection Techniques
- Reviewer
    - *IEEE Transactions on Communications*
    - *IEEE Transactions on Information Theory*
    - *IEEE Transactions on Wireless Communications*
    - *IEEE Journal on Selected Areas in Communications*
    - *IEEE Transactions on Mobile Computing*
    - *IEEE/ACM Transactions on Networking*
    - *IEEE Transactions on Vehicular Technologies*
    - *IEEE Transactions on Education*
    - *Computational Optimization and Applications*
    - *EURASIP Journal on Applied Signal Processing*
    - *IEEE Signal Processing Letters*
    - *IEEE Transactions on Signal Processing*
    - *IEEE Communications Letters*
    - *IEEE Communications Magazine*
    - *International Journal of Wireless Information Networks*
    - *IEEE International Symposium on Information Theory*
    - *IEEE International Communications Conference*

- *IEEE Global Communications Conference*
- *IEEE Military Communications Conference*
- *IEEE Vehicular Technologies Conference*
- *IEEE Wireless Communications and Networking Conference*
- *IEEE International Symposium on Circuits and Systems*
- *IEEE Conference on Decision and Control*

- Panelist

- National Science Foundation proposals, August 2002, October 2003, October 2006, February 2007, April 2010, May 2012, February 2013

- Graduate Coordinator, Department of Electrical and Computer Engineering, University of Florida, July 2015–present
- IEEE Gainesville Section Chair, 2006, 2007, 2010, 2011
- IEEE Gainesville Section Secretary, 2002–2005, 2008–2009, 2012–present
- Faculty mentor, University Minority Mentoring Program, 2012–present

## **Collaborators & Other Affiliations**

**Collaborators:** Prabir Barooah (U. Florida), Matthieu Bloch (GA Tech), Warren E. Dixon (U. Florida), Yuguang Fang (U. Florida), Sweden, Nicholas Gans (U.T. Dallas), Tat M. Lok (Chinese University of Hong Kong), Haniph Latchman (U. Florida), Janise McNair (U. Florida), Eduardo L. Pasilliao, Jr (AFRL), Michael Pursley (Clemson U.), Tan Wong (U. Florida), Dapeng Wu (U. Florida)

**Graduate & Postdoctoral Advisors:** Michael Pursley (Clemson U.)

## **Thesis Advisor and Postgraduate-Scholar Sponsor**

### **Graduate advising**

- Leenapat Navaravong, Ph. D., May 2013, dissertation: “Topology reconfiguration for systems of networked autonomous vehicles with network connectivity constraints”
- Oluwatosin Adeladan, Ph. D., Dec. 2012, dissertation: “Iterative partially coherent demodulation and its application to frequency shift key (FSK) modulated signals”
- Sankrith Subramanian, Ph. D., Dec. 2012, (co-advisor with Warren E. Dixon), dissertation: “Control techniques in dynamic communication networks”, currently a postdoc at AFRL Munitions & Guidance directorate
- Chan-Wong Wong, Ph. D., Dec. 2011, dissertation: “LDPC-based secret-sharing schemes for wiretap channels”, currently employed at Statistics Department, University of Florida



- Byonghyok Choi, Ph. D., Aug. 2011, dissertation: “Utilizing multiuser diversity in multicast transmissions and geographic communications”, currently employed at Samsung Electro-Mechanics, Korea
- Tathagata Deb Goswami, Ph. D., Aug. 2009, dissertation: “Multiuser diversity-enhanced geographic transmissions in wireless channels”
- Surendra Boppana, Ph. D., Aug. 2008, dissertation, “Overlapped transmission in wireless networks,” currently employed by Qualcomm, Inc, San Diego, California
- Kiung Jung, Ph. D., Aug. 2006, dissertation: “Simulcasting using slotted ALOHA in ad-hoc networks,” currently employed by Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea
- Arun Avudainayagam, Ph. D., May 2006, dissertation: “Cooperative diversity in wireless networks using soft-input soft-output decoders,” currently Senior Powerline Research Engineer, Qualcomm, Ocala, Florida
- Xin Li, Ph. D. (Co-Chair), Dec. 2005, dissertation: “Collaborative decoding and its performance analysis”, 2Wire, Inc., San Jose, California
- Abhinav Roongta, Ph. D., Aug. 2005, dissertation: “Reliability-based hybrid-ARQ using convolutional codes,” currently Software Engineer, Intel, Sensor Networks Division, Hillsboro, Oregon
- Jangwook Moon, Ph. D., Aug. 2005, dissertation: “Jamming mitigation through collaboration,” currently Senior Software Engineer, Airvana, Boston, Massachusetts
- Hanjo Kim, Ph. D., Dec. 2005, dissertation: “Improving turbo codes through code design and hybrid ARQ”, currently employed by Samsung, South Korea
- Ravi Teja, M.S. (Co-chair), Aug. 2009, thesis: “Jamming and anti-jamming in IEEE 802.11 Wireless LANs”
- Sankrith Subramanian, M.S. (Co-chair), May 2009, thesis: “Power control of CDMA-based cellular communication networks with time-varying stochastic channel uncertainties”
- Bart Blanchard, M.S., 2002, thesis: “Quantization effects and implementation considerations for turbo decoders”
- Tao Chen, M.S., 2002, thesis: “Channel quality estimation and adaptive error control coding”
- Oluwatosin Adeladan, Gregory Barnette, Eric Graves – current Ph. D. students, University of Florida

### **Undergraduate research advising**

- Jasmine Perez – conducting research under the NSF Research Experience for Undergraduates (REU) on spectral clustering for wireless networks, Summer 2013–present
- Art King – conducting research under the NSF Research Experience for Undergraduates (REU) on wireless sensor networks, Summer 2010
- Jason Li – conducting research under the NSF Research Experience for Undergraduates (REU) and working on wireless sensor networks, Fall 2009–Summer 2010

- Alexander Chebaro – conducting research under the NSF Research Experience for Undergraduates (REU) on multiuser diversity, Fall 2009
- Kareem Graham, conducting research under NSF South East Alliance for Graduate Education and the Professoriate (SEAGEP) funding, Summer 2008
- Erik Mclean, Sien Wu – conducting research under the NSF Research Experience for Undergraduates (REU) and working on the Wireless Information Networking Group (WING) testbed, Summer 2008
- Jonathon Dustin Hill – undergraduate University Scholar research participant, University of Florida, 2005
- Eric Cho – independent research project in the ECE department, 2004
- Jose Cancino – independent research project in the ECE department, 2004
- Ahmed El-Kouche, undergraduate University Scholar research participant, University of Florida, 2003
- Paul Hart – senior design project in the ECE department, 2001
- Andy Lin – senior design project in the CISE department, 2001
- Anton Yen – undergraduate University Scholar research participant, University of Florida, 2000–2001

## Teaching

- EEL 6550, Error Correction Coding, graduate course on error control coding, including block, convolutional, and turbo codes. Taught in Spring 2001, Spring 2002, Fall 2003, Fall 2005, and Spring 2008, Spring 2010, Spring 2012, Spring 2014.
- EEL 6535, Digital Communications, graduate course on theory of digital communications. Taught in Fall 1999, Spring 2007, 2009, 2011, 2012, 2013.
- EEL 6509, Wireless Communications, graduate course on wireless, mobile, and cellular communications. Taught in Spring 2000, 2001, and 2011.
- EEL 5544, Noise in Linear Systems, graduate course on probability, random variables, and random processes. Taught in Fall 2000–2002, 2006–2015.
- EEL 4930, Probability and Statistics in ECE. New course using Python in and out of class for statistical analysis. Taught in Fall 2012.
- EEL 4516, Noise in Devices and Communication Systems, undergraduate course on probability and its application to communication systems. Taught in Spring 2003, 2004, and 2006.
- EEL 4514, Communication System and Components, undergraduate course on analog and digital communications without considering noise. Taught in Fall 2004, Spring 2005, and Spring 2015.
- EEL 3112, Circuits, Systems and Signals, undergraduate second circuits course, which also includes continuous-time signals and systems and sampling theory. Four credits. Taught in Spring 2009.