

Curriculum Vitae

KAPIL RAMESH DANDEKAR

Office Address: Department of Electrical and Computer Engineering, Drexel University
3141 Chestnut St, Room 7-313, Philadelphia, PA 19104
(215) 895-2004, dandekar@drexel.edu, <http://wireless.ece.drexel.edu>
ORCID: orcid.org/0000-0003-1936-2514
Google Scholar: <https://scholar.google.com/citations?user=I3lGtJwAAAAJ&hl=en>

Education:

2001 Ph.D. University of Texas, Austin, Electrical and Computer Engineering (advisor: G. Xu)
1998 M.S.E. University of Texas, Austin, Electrical and Computer Engineering (advisor: G. Xu)
1997 B.S.E.E. University of Virginia, Electrical Engineering (advisor: R. Weikle)
1993 Thomas Jefferson High School for Science and Technology

Employment:

2020 – E. Warren Colehower Chair Professor, Electrical and Computer Engineering, College of Engineering Drexel University
2019 – Associate Dean for Enrollment Management & Graduate Education, College of Engineering Drexel University
2017 – Affiliated Professor, Computer Science, College of Computing and Informatics, Drexel University
2014 – Affiliated Professor, School of Biomedical Engineering, Science and Health Systems, Drexel University
2013 – 2020 Professor, Electrical and Computer Engineering, College of Engineering Drexel University
2011 – 2019 Associate Dean for Research & Graduate Studies, College of Engineering Drexel University
2011 – 2015 Co-Founder, VariWaves, LLC, Exton, PA
2010 – Scientific Advisor, Adant, Inc., Santa Clara, CA
2009 – 2015 Co-Founder, MetaTenna, LLC, Exton, PA
2008 – 2011 Assistant Department Head for Graduate Affairs, Electrical & Computer Engineering, Drexel University
2007 – 2013 Associate Professor, Electrical & Computer Engineering, Drexel University
2001 – 2007 Assistant Professor, Electrical & Computer Engineering, Drexel University
1997 – 2001 Graduate Research Assistant, University of Texas, Austin
1993 – 1997 Engineer, United States Naval Research Laboratory, Washington, D.C.
1996 – 1996 Continuing Education Teacher, Fairfax County Public Schools, Fairfax, VA
1992 – 1992 Software Engineer, United States Naval Observatory, Washington, D.C.

Research Interests:

- Software defined/cognitive radio prototyping
- Reconfigurable, metamaterial, and non-traditional material antennas for wireless systems
- Functional fabrics for biomedical monitoring applications
- Smart antenna/MIMO systems for wireless communications
- Sensor networks for air quality and homeland security
- Free space optical and ultrasonic communication
- Wireless physical layer security
- Service learning and cybersecurity education

Scientific/Academic Honors:

2019	College Outstanding Innovation Award, Drexel University COE
2016	Provost's Award for Outstanding Mid-Career Scholarly Activity, Drexel University
2015	College Outstanding Research Award, Drexel University COE
2013	President's Award for Civic Engagement, Drexel University
2012	Meritorious Service Award, IEEE Educational Activities Board
2007	Department Research Award, Drexel University ECE
2006	Department Senior Design Advisor Award, Drexel University ECE Dept.
2006	Department Senior Design Advisor Award, Drexel University ECE Dept.
2006	Drexel Research Day (honorable mention), Drexel University College of Engineering
2005	Unisys Senior Design Advisor Award, Drexel University ECE Dept.
2005	Drexel Research Day (honorable mention), Drexel University College of Engineering
2004	Unisys Senior Design Advisor Award, Drexel Electrical and Computer Engineering
1999 – 2000	Microelectronics and Computer Development Fellowship, University of Texas, Austin
1997 – 1999	Basdall Gardner Endowed Graduate Fellowship, University of Texas, Austin
1997	Louis T. Rader Award, University of Virginia EE Dept.
1996	James S. Rader Award, University of Virginia EE Dept.
1998 –	Phi Kappa Phi National Honor Society
1997 –	Golden Key National Honor Society
1996 –	Eta Kappa Nu National Honor Society
1995 –	Tau Beta Pi National Honor Society
1993 – 1997	Rodman Scholar, University of Virginia School of Engineering and Applied Science
1993	Westinghouse Science Talent Search (top 300)

Research Activities

Notation used for publications in this document is as follows:

R	Refereed journal
S/R	Submitted refereed journal
C	Conference
S/C	Submitted conference
P	Patent / invention disclosure
T	Technical report / thesis / dissertation

Refereed Journal Publications:

available at <http://wireless.ece.drexel.edu>

1. S/R-2020 M. Han, Y. Liu, R. Rakhmanov, C. Israel, M. Tajin, G. Friedman, V. Volman, A. Hoorfar, K. Dandekar, and Y. Gogotsi, "Solution-processed Ti₃C₂Tx MXene antennas for radio-frequency communication," *Accepted and to appear in Advanced Materials*, 2020.
2. R-2020 M. Jacovic, K. Juretus, N. Kandasamy, I. Savidis, and K. R. Dandekar, "Physical layer encryption for wireless OFDM communication systems," *Journal of Hardware and Systems Security*, vol. 4, no. 3, pp. 230–245, Jul. 2020. DOI: 10.1007/s41635-020-00097-8. [Online]. Available: <https://doi.org/10.1007/s41635-020-00097-8>.

3. R-2020 V. Pano, I. Tekin, Y. Liu, K. R. Dandekar, and B. Taskin, "TSV-based antenna for on-chip wireless communication," *IET Microwaves, Antennas Propagation*, vol. 14, no. 4, pp. 302–307, 2020. DOI: 10.1049/iet-map.2019.0431.
4. R-2020 V. Pano, I. Tekin, I. Yilmaz, Y. Liu, K. R. Dandekar, and B. Taskin, "TSV antennas for multi-band wireless communication," *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, vol. 10, no. 1, pp. 100–113, 2020. DOI: 10.1109/JETCAS.2020.2974236.
5. R-2020 M. A. S. Tajin, O. Bshara, Y. Liu, A. Levitt, G. Dion, and K. R. Dandekar, "Efficiency measurement of the flexible on-body antenna at varying levels of stretch in a reverberation chamber," *IET Microwaves, Antennas Propagation*, vol. 14, no. 3, pp. 154–158, 2020. DOI: 10.1049/iet-map.2019.0503.
6. R-2020 M. A. S. Tajin and K. R. Dandekar, "Pattern reconfigurable UHF RFID reader antenna array," *IEEE Access*, vol. 8, pp. 187365–187372, 2020. DOI: 10.1109/ACCESS.2020.3031296.
7. R-2020 M. A. S. Tajin, A. S. Levitt, Y. Liu, C. E. Amanatides, C. L. Schauer, G. Dion, and K. R. Dandekar, "On the effect of sweat on sheet resistance of knitted conductive yarns in wearable antenna design," *IEEE Antennas and Wireless Propagation Letters*, vol. 19, no. 4, pp. 542–546, 2020. DOI: 10.1109/LAWP.2020.2971189.
8. R-2020 M. A. S. Tajin, W. M. Mongan, and K. R. Dandekar, "Passive RFID-based diaper moisture sensor," *IEEE Sensors Journal*, pp. 1–1, 2020. DOI: 10.1109/JSEN.2020.3021395.
9. R-2019 J. Chacko, K. Juretus, M. Jacovic, C. Sahin, N. Kandasamy, I. Savidis, and K. R. Dandekar, "Securing wireless communication via hardware-based packet obfuscation," *Journal of Hardware and Systems Security*, vol. 3, no. 3, pp. 261–272, Sep. 2019, ISSN: 2509-3436. DOI: 10.1007/s41635-019-00070-0. [Online]. Available: <https://doi.org/10.1007/s41635-019-00070-0>.
10. R-2019 Y. Liu, O. Bshara, I. Tekin, C. Israel, A. Hoorfar, B. Taskin, and K. R. Dandekar, "Design and fabrication of two-port three-beam switched beam antenna array for 60 GHz communication," *IET Microwaves, Antennas Propagation*, vol. 13, no. 9, pp. 1438–1442, 2019. DOI: 10.1049/iet-map.2018.6010.
11. R-2018 S. Acharya, W. M. Mongan, I. Rasheed, Y. Liu, E. Anday, G. Dion, A. Fontecchio, T. Kurzweg, and K. R. Dandekar, "Ensemble learning approach via kalman filtering for a passive wearable respiratory monitor," *IEEE Journal of Biomedical and Health Informatics*, pp. 1–1, 2018, ISSN: 2168-2194. DOI: 10.1109/JBHI.2018.2857924.
12. R-2018 D. Patron, Y. Liu, and K. R. Dandekar, "A miniaturized reconfigurable CRLH leaky-wave antenna using complementary split-ring resonators," *Journal of Electrical and Computer Engineering*, vol. 2018, pp. 1–12, 2018. DOI: 10.1155/2018/6839028. [Online]. Available: <https://doi.org/10.1155/2018/6839028>.
13. R-2018 X. R. Rey, T. J. Halpin, S. Hadgekar, K. Miu, and K. R. Dandekar, "Cybersecurity analysis of an IEEE 802.15.4 based wireless sensor network for smart grid power monitoring on a naval vessel," *Naval Engineers Journal*, vol. 130, no. 3, pp. 137–144, 2018, ISSN: 0028-1425. [Online]. Available: <https://www.ingentaconnect.com/content/asne/nej/2018/00000130/00000003/art00038>.

14. R-2018 A. Sarycheva, A. Polemi, Y. Liu, K. Dandekar, B. Anasori, and Y. Gogotsi, “2D titanium carbide (MXene) for wireless communication,” *Science Advances*, vol. 4, no. 9, 2018. DOI: 10.1126/sciadv.aau0920. eprint: <http://advances.sciencemag.org/content/4/9/eaau0920.full.pdf>. [Online]. Available: <http://advances.sciencemag.org/content/4/9/eaau0920>.
15. R-2018 H. Wang, K. Smith, S. Rocheleau, J. Mohan, K. Dandekar, A. Fontecchio, and J. Stanford, “Early undergraduate research in an international setting: A pilot study,” *Scholarship and Practice of Undergraduate Research*, vol. 2, no. 2, pp. 40–48, Dec. 2018.
16. R-2017 H. Paaso, N. Gulati, D. Patron, A. Hakkarainen, J. Werner, K. R. Dandekar, M. Valkama, and A. Mammela, “DOA estimation using compact CRLH leaky-wave antennas: Novel algorithms and measured performance,” *IEEE Transactions on Antennas and Propagation*, vol. 65, no. 9, pp. 4836–4849, Sep. 2017, ISSN: 0018-926X. DOI: 10.1109/TAP.2017.2724584.
17. R-2017 H. Paaso, A. Hakkarainen, N. Gulati, D. Patron, K. R. Dandekar, M. Valkama, and A. Mammela, “Experimental results of novel DOA estimation algorithms for compact reconfigurable antennas,” *International Journal of Antennas and Propagation*, vol. 2017, pp. 1–13, 2017. DOI: 10.1155/2017/1613638. [Online]. Available: <https://doi.org/10.1155/2017/1613638>.
18. R-2016 A. Hakkarainen, J. Werner, K. R. Dandekar, and M. Valkama, “Analysis and augmented spatial processing for uplink OFDMA MU-MIMO receiver with transceiver I/Q imbalance and external interference,” *IEEE Transactions on Wireless Communications*, vol. 15, no. 5, pp. 3422–3439, May 2016, ISSN: 1536-1276. DOI: 10.1109/TWC.2016.2521382.
19. R-2016 R. Measel, C. S. Lester, D. J. Bucci, K. Wanuga, G. Tait, R. Primerano, K. R. Dandekar, and M. Kam, “An empirical study on the performance of wireless OFDM communications in highly reverberant environments,” *IEEE Transactions on Wireless Communications*, vol. 15, no. 7, pp. 4802–4812, Jul. 2016, ISSN: 1536-1276. DOI: 10.1109/TWC.2016.2546879.
20. R-2016 D. Patron, W. Mongan, T. P. Kurzweg, A. Fontecchio, G. Dion, E. K. Anday, and K. R. Dandekar, “On the use of knitted antennas and inductively coupled RFID tags for wearable applications,” *IEEE Transactions on Biomedical Circuits and Systems*, vol. 10, no. 6, pp. 1047–1057, Dec. 2016, ISSN: 1932-4545. DOI: 10.1109/TBCAS.2016.2518871.
21. R-2015 C. S. Lester, D. J. Bucci, R. Measel, K. Wanuga, R. Primerano, K. R. Dandekar, and M. Kam, “Performance of reconfigurable antennas in a below-decks environment,” *IEEE Antennas and Wireless Propagation Letters*, vol. 14, pp. 1093–1096, 2015, ISSN: 1536-1225. DOI: 10.1109/LAWP.2015.2394480.
22. R-2015 G. D. Sworo, K. R. Dandekar, and M. Kam, “Reconfigurable antennas and link adaptation algorithms for MIMO-OFDM wireless systems,” *EURASIP Journal on Wireless Communications and Networking*, vol. 2015, no. 1, pp. 1–15, 2015, ISSN: 1687-1499. DOI: 10.1186/s13638-015-0390-6. [Online]. Available: <http://dx.doi.org/10.1186/s13638-015-0390-6>.

23. R-2015 J. Werner, J. Wang, A. Hakkarainen, N. Gulati, D. Patron, D. Pfeil, K. Dandekar, D. Cabric, and M. Valkama, "Sectorized antenna-based DOA estimation and localization: Advanced algorithms and measurements," *IEEE Journal on Selected Areas in Communications*, vol. 33, no. 11, pp. 2272–2286, Nov. 2015, ISSN: 0733-8716. DOI: 10.1109/JSAC.2015.2430292.
24. R-2014 M. Bielinski, G. Sosa, K. Wanuga, R. Primerano, M. Kam, and K. R. Dandekar, "Bit-loaded PAPR reduction for high-data-rate through-metal control network applications," *IEEE Transactions on Industrial Electronics*, vol. 61, no. 5, pp. 2362–2369, May 2014, ISSN: 0278-0046. DOI: 10.1109/TIE.2013.2272283.
25. R-2014 N. Gulati and K. R. Dandekar, "Learning state selection for reconfigurable antennas: A multi-armed bandit approach," *IEEE Transactions on Antennas and Propagation*, vol. 62, no. 3, pp. 1027–1038, Mar. 2014, ISSN: 0018-926X. DOI: 10.1109/TAP.2013.2276414.
26. R-2014 D. Patron, A. S. Daryoush, and K. R. Dandekar, "Optical control of reconfigurable antennas and application to a novel pattern-reconfigurable planar design," *Journal of Lightwave Technology*, vol. 32, no. 20, pp. 3394–3402, Oct. 2014, ISSN: 0733-8724. DOI: 10.1109/JLT.2014.2321406.
27. R-2014 M. Sonkki, D. Pfeil, V. Hovinen, and K. R. Dandekar, "Wideband planar four-element linear antenna array," *IEEE Antennas and Wireless Propagation Letters*, vol. 13, pp. 1663–1666, 2014, ISSN: 1536-1225. DOI: 10.1109/LAWP.2014.2350259.
28. R-2014 K. Wanuga, R. Measel, C. S. Lester, D. J. Bucci, D. Gonzalez, R. Primerano, M. Kam, and K. R. Dandekar, "Performance evaluation of MIMO OFDM systems in on-ship below-deck environments," *IEEE Antennas and Wireless Propagation Letters*, vol. 13, pp. 173–176, 2014, ISSN: 1536-1225. DOI: 10.1109/LAWP.2014.2299758.
29. R-2013 M. Bielinski, K. Wanuga, G. Sosa, R. Primerano, M. Kam, and K. R. Dandekar, "Transceiver design for high-data rate through-metal communication in naval applications," *Naval Engineers Journal*, vol. 125, no. 1, pp. 121–126, 2013, ISSN: 0028-1425. [Online]. Available: <http://www.ingentaconnect.com/content/asne/nej/2013/00000125/00000001/art00019>.
30. R-2013 A. Hakkarainen, J. Werner, K. R. Dandekar, and M. Valkama, "Widely-linear beamforming and RF impairment suppression in massive antenna arrays," *Journal of Communications and Networks*, vol. 15, no. 4, pp. 383–397, Aug. 2013, ISSN: 1229-2370. DOI: 10.1109/JCN.2013.000069.
31. R-2013 P. Mookiah, J. M. Walsh, R. Greenstadt, and K. R. Dandekar, "Reconfigurable antenna assisted intrusion detection in wireless networks," *International Journal of Distributed Sensor Networks*, vol. 9, no. 10, 2013. DOI: 10.1155/2013/564503. eprint: <http://dsn.sagepub.com/content/9/10/564503.full.pdf+html>. [Online]. Available: <http://dsn.sagepub.com/content/9/10/564503.abstract>.
32. R-2013 D. Patron, D. Piazza, and K. R. Dandekar, "Wideband planar antenna with reconfigurable omnidirectional and directional radiation patterns," *Electronics Letters*, vol. 49, no. 8, pp. 516–518, Apr. 2013, ISSN: 0013-5194. DOI: 10.1049/e1.2013.0234.
33. R-2012 A. Fridman, S. Weber, C. Graff, D. E. Breen, K. R. Dandekar, and M. Kam, "OMAN: A mobile ad hoc network design system," *IEEE Transactions on Mobile Computing*, vol. 11, no. 7, pp. 1179–1191, Jul. 2012, ISSN: 1536-1233. DOI: 10.1109/TMC.2011.176.

34. R-2012 P. Mookiah and K. R. Dandekar, "A reconfigurable antenna-based solution for stationary device authentication in wireless networks," *International Journal of Antennas and Propagation*, 2012.
35. R-2012 K. Wanuga, M. Bielinski, R. Primerano, M. Kam, and K. R. Dandekar, "High-data-rate ultrasonic through-metal communication," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 59, no. 9, pp. 2051–2053, Sep. 2012, ISSN: 0885-3010. DOI: 10.1109/TUFFC.2012.2426.
36. R-2011 J. Kountouriotis, D. Piazza, P. Mookiah, M. D'Amico, and K. R. Dandekar, "Reconfigurable antennas and configuration selection methods for MIMO ad hoc networks," *EURASIP Journal on Wireless Communications and Networking*, vol. 2011, no. 1, pp. 1–14, 2011, ISSN: 1687-1499. DOI: 10.1186/1687-1499-2011-147. [Online]. Available: <http://dx.doi.org/10.1186/1687-1499-2011-147>.
37. R-2010 D. Hamel, M. Chwastek, S. Garcia, B. Farouk, M. Kam, and K. R. Dandekar, "Sensor placement for urban homeland security applications," *International Journal of Distributed Sensor Networks*, vol. 6, no. 1, 2010. DOI: 10.1155/2010/859263. eprint: <http://dsn.sagepub.com/content/6/1/859263.full.pdf+html>. [Online]. Available: <http://dsn.sagepub.com/content/6/1/859263.abstract>.
38. R-2010 X. Liu, J. Kountouriotis, A. P. Petropulu, and K. R. Dandekar, "ALOHA with collision resolution (ALOHA-cr): Theory and software defined radio implementation," *IEEE Transactions on Signal Processing*, vol. 58, no. 8, pp. 4396–4410, Aug. 2010, ISSN: 1053-587X. DOI: 10.1109/TSP.2010.2048315.
39. R-2010 D. Piazza, P. Mookiah, M. D'Amico, and K. R. Dandekar, "Experimental analysis of pattern and polarization reconfigurable circular patch antennas for MIMO systems," *IEEE Transactions on Vehicular Technology*, vol. 59, no. 5, pp. 2352–2362, Jun. 2010, ISSN: 0018-9545. DOI: 10.1109/TVT.2010.2043275.
40. R-2009 N. J. Kirsch, J. Kountouriotis, C. Liang, and K. R. Dandekar, "Experimental evaluation of game theoretic power allocation in MIMO ad-hoc networks," *IEEE Transactions on Wireless Communications*, vol. 8, no. 5, pp. 2292–2295, May 2009, ISSN: 1536-1276. DOI: 10.1109/TWC.2009.080863.
41. R-2009 P. Mookiah and K. R. Dandekar, "Metamaterial-substrate antenna array for MIMO communication system," *IEEE Transactions on Antennas and Propagation*, vol. 57, no. 10, pp. 3283–3292, Oct. 2009, ISSN: 0018-926X. DOI: 10.1109/TAP.2009.2028638.
42. R-2009 D. Piazza, M. D'Amico, and K. R. Dandekar, "Performance improvement of a wide-band MIMO system by using two-port RLWA," *IEEE Antennas and Wireless Propagation Letters*, vol. 8, pp. 830–834, 2009, ISSN: 1536-1225. DOI: 10.1109/LAWP.2009.2026594.
43. R-2009 D. Piazza, J. Kountouriotis, M. D'Amico, and K. R. Dandekar, "A technique for antenna configuration selection for reconfigurable circular patch arrays," *IEEE Transactions on Wireless Communications*, vol. 8, no. 3, pp. 1456–1467, Mar. 2009, ISSN: 1536-1276. DOI: 10.1109/TWC.2008.080212.
44. R-2008 R. Bhagavatula, R. W. Heath, A. Forenza, N. J. Kirsch, and K. R. Dandekar, "Impact of mutual coupling on adaptive switching between MIMO transmission strategies and antenna configurations," *Wireless Personal Communications*, vol. 52, no. 1, pp. 69–87, 2008, ISSN: 1572-834X. DOI: 10.1007/s11277-008-9513-2. [Online]. Available: <http://dx.doi.org/10.1007/s11277-008-9513-2>.

45. R-2008 D. Piazza, N. J. Kirsch, A. Forenza, R. W. Heath, and K. R. Dandekar, "Design and evaluation of a reconfigurable antenna array for MIMO systems," *IEEE Transactions on Antennas and Propagation*, vol. 56, no. 3, pp. 869–881, Mar. 2008, ISSN: 0018-926X. DOI: 10.1109/TAP.2008.916908.
46. R-2007 K. R. Dandekar, "Reviews and abstracts [review of wireless communications by andreas f. molisch; 2005]," *IEEE Antennas and Propagation Magazine*, vol. 49, no. 1, pp. 132–133, Feb. 2007, ISSN: 1045-9243. DOI: 10.1109/MAP.2007.370999.
47. R-2007 C. Liang and K. R. Dandekar, "Power management in MIMO ad hoc networks: A game-theoretic approach," *IEEE Transactions on Wireless Communications*, vol. 6, no. 4, pp. 1164–1170, Apr. 2007, ISSN: 1536-1276. DOI: 10.1109/TWC.2007.348307.
48. R-2006 M. Garfield, C. Liang, T. P. Kurzweg, and K. R. Dandekar, "MIMO space-time coding for diffuse optical communication," *Microwave and Optical Technology Letters*, vol. 48, no. 6, pp. 1108–1110, 2006, ISSN: 1098-2760. DOI: 10.1002/mop.21558. [Online]. Available: <http://dx.doi.org/10.1002/mop.21558>.
49. R-2006 D. Piazza and K. R. Dandekar, "Reconfigurable antenna solution for MIMO-OFDM systems," *Electronics Letters*, vol. 42, no. 8, pp. 446–447, Apr. 2006, ISSN: 0013-5194. DOI: 10.1049/e1:20060221.
50. R-2003 K. R. Dandekar, G. Xu, and H. Ling, "Computational electromagnetic simulation of smart antenna systems in urban microcellular environments," *IEEE Transactions on Vehicular Technology*, vol. 52, no. 4, pp. 733–742, Jul. 2003, ISSN: 0018-9545. DOI: 10.1109/TVT.2003.814936.
51. R-2002 A. Arredondo, K. R. Dandekar, and G. Xu, "Vector channel modeling and prediction for the improvement of downlink received power," *IEEE Transactions on Communications*, vol. 50, no. 7, pp. 1121–1129, Jul. 2002, ISSN: 0090-6778. DOI: 10.1109/TCOMM.2002.800827.
52. R-2002 K. R. Dandekar and R. W. Heath, "Modelling realistic electromagnetic effects on MIMO system capacity," *Electronics Letters*, vol. 38, no. 25, pp. 1624–1625, Dec. 2002, ISSN: 0013-5194. DOI: 10.1049/e1:20021147.
53. R-2002 K. R. Dandekar, H. Ling, and G. Xu, "Experimental study of mutual coupling compensation in smart antenna applications," *IEEE Transactions on Wireless Communications*, vol. 1, no. 3, pp. 480–487, Jul. 2002, ISSN: 1536-1276. DOI: 10.1109/TWC.2002.800546.
54. R-2002 K. R. Dandekar, A. Arredondo, H. Ling, and G. Xu, "Modeling and prediction of the wireless vector channel encountered by smart antenna systems," *Microwave and Optical Technology Letters*, vol. 35, no. 4, pp. 281–283, 2002, ISSN: 1098-2760. DOI: 10.1002/mop.10582. [Online]. Available: <http://dx.doi.org/10.1002/mop.10582>.
55. R-2000 K. R. Dandekar, H. Ling, and G. Xu, "Effect of mutual coupling on direction finding in smart antenna applications," *Electronics Letters*, vol. 36, no. 22, pp. 1889–1891, Oct. 2000, ISSN: 0013-5194. DOI: 10.1049/e1:20001309.
56. R-2000 T. Su, K. Dandekar, and H. Ling, "Simulation of mutual coupling effect in circular arrays for direction-finding applications," *Microwave and Optical Technology Letters*, vol. 26, no. 5, pp. 331–336, 2000, ISSN: 1098-2760. DOI: 10.1002/1098-2760(20000905)26:5<331::AID-MOP17>3.0.CO;2-M. [Online]. Available: [http://dx.doi.org/10.1002/1098-2760\(20000905\)26:5%3C331::AID-MOP17%3E3.0.CO;2-M](http://dx.doi.org/10.1002/1098-2760(20000905)26:5%3C331::AID-MOP17%3E3.0.CO;2-M).

Patents / Patent Applications:

1. P-2020 D. H. Nguyen, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, "Adaptive pursuit learning method to mitigate small-cell interference through directionality," Granted Patent US 10694526 B2, Jun. 23, 2020. [Online]. Available: <https://lens.org/140-320-713-494-557>.
2. P-2020 V. Pano, I. Tekin, B. Taskin, K. R. Dandekar, and Y. Liu, "TSV-based on-chip antennas, measurement, and evaluation," Patent Application US 2020/0212538 A1, Jul. 2, 2020. [Online]. Available: <https://lens.org/001-445-072-790-020>.
3. P-2020 R. A. Primerano, M. Kam, K. R. Dandekar, and C. Gindhart, "System for ultrasonic communication across curved metal surfaces," Granted Patent US 10594409 B2, Mar. 17, 2020. [Online]. Available: <https://lens.org/059-225-021-997-283>.
4. P-2019 K. R. Dandekar, J. J. Chacko, K. J. Juretus, M. Jacovic, C. Sahin, N. Kandasamy, and I. Savidis, "Physical layer key based interleaving for secure wireless communication," Patent Application US 2019/0373458 A1, Dec. 5, 2019. [Online]. Available: <https://lens.org/043-697-232-511-276>.
5. P-2019 K. R. Dandekar, C. Sahin, L. J. Henderson, D. H. Nguyen, J. J. Chacko, and X. R. Rey, "Beam visualization and using augmented reality for control and interaction," Granted Patent US 10515483 B2, Dec. 24, 2019. [Online]. Available: <https://lens.org/131-778-764-863-760>.
6. P-2019 D. H. Nguyen, M. Jacovic, C. Sahin, and K. R. Dandekar, "Energy-efficient reactive jamming of frequency-hopping spread spectrum FHSS signals using software-defined radios," Patent Application US 2019/0268087 A1, Aug. 29, 2019. [Online]. Available: <https://lens.org/058-910-072-937-191>.
7. P-2018 J. Chacko, K. Dandekar, M. Jacovic, K. Juretus, N. Kandasamy, C. Sahin, and I. Savidis, "Physical gate based preamble obfuscation for securing wireless communication," Patent Application WO 2018/132796 A1, Jul. 19, 2018. [Online]. Available: <https://lens.org/028-722-143-130-103>.
8. P-2018 G. Dion, K. R. Dandekar, Y. Gogotsi, D. Patron, K. A. Jost, M. N. Le, J. W. Fisher, S. J. Watt, and A. C. Cook, "Wearable power harvesting system," Granted Patent US 9972894 B2, May 15, 2018. [Online]. Available: <https://lens.org/047-361-587-033-396>.
9. P-2018 D. H. Nguyen, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, "Adaptive pursuit learning method to mitigate small-cell interference through directionality," Patent Application US 2018/0098330 A1, Apr. 5, 2018. [Online]. Available: <https://lens.org/033-736-469-221-177>.
10. P-2018 D. Patron and K. R. Dandekar, "Miniaturized reconfigurable CRLH metamaterial leaky-wave antenna using complementary split-ring resonators," Granted Patent US 10014585 B2, Jul. 3, 2018. [Online]. Available: <https://lens.org/148-181-643-423-713>.
11. P-2018 D. Patron, K. R. Dandekar, and D. Piazza, "Wide band reconfigurable planar antenna with omnidirectional and directional radiation patterns," Granted Patent US 10038240 B2, Jul. 31, 2018. [Online]. Available: <https://lens.org/122-647-100-814-513>.

12. P-2017 P. Mookiah, K. R. Dandekar, J. M. Walsh, and R. Greenstadt, "Reconfigurable antenna based solutions for device authentication and intrusion detection in wireless networks," Granted Patent US 9560073 B2, Jan. 31, 2017. [Online]. Available: <https://lens.org/106-813-625-021-285>.
13. P-2017 D. Piazza, J. Kountouriotis, M. D'amico, K. R. Dandekar, and P. Mookiah, "Reconfigurable antennas and configuration selection methods for ad-hoc networks," Granted Patent US 9565717 B2, Feb. 7, 2017. [Online]. Available: <https://lens.org/154-431-661-889-695>.
14. P-2016 R. Bahl, N. Gulati, K. R. Dandekar, and D. L. Jaggard, "Reconfigurable antennas for performance enhancement of interference networks employing interference alignment," Granted Patent US 9236955 B2, Jan. 12, 2016. [Online]. Available: <https://lens.org/055-323-420-597-758>.
15. P-2016 C. Sahin and K. R. Dandekar, "Symmetric encryption key generation using wireless physical layer information without sharing any information pertinent to the key," Patent Application WO 2016/160546 A1, Oct. 6, 2016. [Online]. Available: <https://lens.org/117-717-482-567-887>.
16. P-2016 B. Shishkin, D. H. Nguyen, C. Sahin, K. R. Dandekar, N. Kandasamy, and D. J. Dorsey, "Real-time and protocol-aware reactive jamming in wireless networks," Granted Patent US 9531497 B2, Dec. 27, 2016. [Online]. Available: <https://lens.org/027-425-829-451-932>.
17. P-2015 A. K. Fontecchio, K. R. Dandekar, and T. Kurzweg, "Transparent conformal polymer antennas for RFID and other wireless communications applications," Granted Patent US 8922435 B2, Dec. 30, 2015. [Online]. Available: <https://lens.org/152-136-971-858-718>.
18. P-2015 N. Gulati, D. Gonzalez, and K. R. Dandekar, "Method for selecting state of a reconfigurable antenna in a communication system via machine learning," Granted Patent US 8942659 B2, Jan. 27, 2015. [Online]. Available: <https://lens.org/060-411-476-783-550>.
19. P-2015 P. Mookiah and K. Dandekar, "Bi-directional magnetic permeability enhanced metamaterial (MPEM) substrate for antenna miniaturization," Granted Patent US 9035831 B2, May 19, 2015. [Online]. Available: <https://lens.org/155-431-023-245-162>.
20. P-2015 D. Piazza, M. D Amico, and K. R. Dandekar, "Metamaterial reconfigurable antennas," Granted Patent US 9196970 B2, Nov. 24, 2015. [Online]. Available: <https://lens.org/149-550-978-764-779>.
21. P-2015 D. Piazza, J. Kountouriotis, M. D Amico, and K. R. Dandekar, "Systems and methods for selecting reconfigurable antennas in MIMO systems," Granted Patent CN 102362439 B, Jun. 10, 2015. [Online]. Available: <https://lens.org/187-910-870-614-060>.
22. P-2014 K. R. Dandekar and P. Mookiah, "MIMO antenna arrays built on metamaterial substrates," Granted Patent US 8836608 B2, Sep. 16, 2014. [Online]. Available: <https://lens.org/186-769-156-760-11X>.
23. P-2014 K. R. Dandekar, G. Dion, A. K. Fontecchio, T. P. Kurzweg, D. Patron, and O. Montgomery, "Smart knitted fabrics," Patent Application WO 2014/138204 A1, Sep. 12, 2014. [Online]. Available: <https://lens.org/136-412-983-697-622>.

Conference Publications:available at <http://wireless.ece.drexel.edu>

1. C-2020 S. Hansen, D. Schwartz, J. Stover, M. A. S. Tajin, W. M. Mongan, and K. R. Dandekar, "Fusion learning on multiple-tag RFID measurements for respiratory rate monitoring," in *2020 IEEE 20th International Conference on Bioinformatics and Bioengineering (BIBE 2020)*, Oct. 2020.
2. C-2020 A. Lackpour, X. R. Rey, G. Mainland, and K. R. Dandekar, "Greedy channel selection for dynamic spectrum access radios," in *2020 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2020, pp. 1–4. DOI: 10.1109/ISCAS45731.2020.9180882.
3. C-2020 M. Liston and K. Dandekar, "Entropy based exploration in cognitive radio networks using deep reinforcement learning for dynamic spectrum access," in *2020 IEEE 21st Annual Wireless and Microwave Technology Conference (WAMICON) (WAMICON 2020)*, Clearwater Beach, USA, Dec. 2020.
4. C-2020 M. A. S. Tajin, M. Jacovic, and K. R. Dandekar, "Channel emulation for the characterization of wearable RFID systems," in *2020 IEEE 21st Annual Wireless and Microwave Technology Conference (WAMICON) (WAMICON 2020)*, Clearwater Beach, USA, Dec. 2020.
5. C-2020 M. A. S. Tajin, A. S. Levitt, Y. Liu, C. E. Amanatides, C. L. Schauer, G. Dion, and K. R. Dandekar, "Extraction of knitted RFID antenna design parameter from transmission line measurements," in *2020 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting (APS/URSI)*, 2020.
6. C-2019 O. Bshara, Y. Liu, and K. R. Dandekar, "Radar cross section measurement comparison of UAVs at C-band and V-band," in *2019 IEEE 20th Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2019, pp. 1–6. DOI: 10.1109/WAMICON.2019.8765431.
7. C-2019 K. R. Dandekar, S. Begashaw, M. Jacovic, A. Lackpour, I. Rasheed, X. R. Rey, C. Sahin, S. Shaher, and G. Mainland, "Grid software defined radio network testbed for hybrid measurement and emulation," in *2019 16th Annual IEEE International Conference on Sensing, Communication, and Networking (SECON)*, Jun. 2019, pp. 1–9. DOI: 10.1109/SAHCN.2019.8824901.
8. C-2019 A. Gentry, W. Mongan, B. Lee, O. Montgomery, and K. Dandekar, "Activity segmentation using wearable sensors for DVT/PE risk detection," in *2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC)*, vol. 2, Jul. 2019, pp. 477–483. DOI: 10.1109/COMPSAC.2019.10252.
9. C-2019 M. Jacovic, M. Kraus, G. Mainland, and K. R. Dandekar, "Evaluation of physical layer secret key generation for IoT devices," in *2019 IEEE 20th Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2019, pp. 1–6. DOI: 10.1109/WAMICON.2019.8765465.
10. C-2019 P. O'Neill, W. M. Mongan, R. Ross, S. Acharya, A. Fontecchio, and K. R. Dandekar, "An adaptive search algorithm for detecting respiratory artifacts using a wireless passive wearable device," in *2019 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, 2019, pp. 1–6. DOI: 10.1109/SPMB47826.2019.9037861.
11. C-2018 S. Begashaw, X. R. Rey, and K. R. Dandekar, "Impact of reconfigurable antennas on MU-MIMO over measurements in a reverberation chamber," in *2018 IEEE 88th Vehicular Technology Conference (VTC-Fall)*, Aug. 2018, pp. 1–5. DOI: 10.1109/VTCFall.2018.8690597.

12. C-2018 O. Bshara, Y. Liu, I. Tekin, B. Taskin, and K. R. Dandekar, "mmWave antenna gain switching to mitigate indoor blockage," in *2018 IEEE International Symposium on Antennas and Propagation USNC/URSI National Radio Science Meeting*, Jul. 2018, pp. 1205–1206. DOI: 10.1109/APUSNCURSINRSM.2018.8608384.
13. C-2018 M. Jacovic, O. Bshara, and K. R. Dandekar, "Waveform design of UAV data links in urban environments for interference mitigation," in *2018 IEEE 88th Vehicular Technology Conference (VTC-Fall)*, Aug. 2018, pp. 1–5. DOI: 10.1109/VTCFall.2018.8690581.
14. C-2018 Y. Liu, O. Bshara, I. Tekin, and K. R. Dandekar, "A 4 by 10 series 60 GHZ microstrip array antenna fed by butler matrix for 5G applications," in *2018 IEEE 19th Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2018, pp. 1–4. DOI: 10.1109/WAMICON.2018.8363899.
15. C-2018 X. Rivas Rey, T. J. Halpin, S. Hadgekar, K. Miu, and K. R. Dandekar, "Cybersecurity analysis of an IEEE 802.15.4 based wireless sensor network for smart grid power monitoring on a naval vessel," in *American Society of Naval Engineers (ASNE) Technology, Systems and Ships Symposium*, 2018.
16. C-2018 S. Wolfe, S. Begashaw, Y. Liu, and K. R. Dandekar, "Adaptive link optimization for 802.11 UAV uplink using a reconfigurable antenna," in *MILCOM 2018 - 2018 IEEE Military Communications Conference (MILCOM)*, Oct. 2018, pp. 1–6. DOI: 10.1109/MILCOM.2018.8599696.
17. C-2017 S. G. Begashaw and K. R. Dandekar, "Performance analysis of a reconfigurable antenna array in WLAN channel models," in *2017 IEEE International Symposium on Antennas and Propagation USNC/URSI National Radio Science Meeting*, Jul. 2017, pp. 1977–1978. DOI: 10.1109/APUSNCURSINRSM.2017.8073031.
18. C-2017 O. Bshara, Y. Liu, S. Begashaw, and K. R. Dandekar, "Computational electromagnetic simulation and performance analysis of reconfigurable antennas for outdoor 60 GHZ applications," in *2017 IEEE Radio and Wireless Symposium (RWS)*, Jan. 2017, pp. 38–41. DOI: 10.1109/RWS.2017.7885939.
19. C-2017 J. Chacko, M. Jacovic, C. Sahin, N. Kandasamy, and K. R. Dandekar, "Independent source architecture for developing FPGA-based physical layer security techniques," in *MILCOM 2017 - 2017 IEEE Military Communications Conference (MILCOM)*, Oct. 2017, pp. 666–671. DOI: 10.1109/MILCOM.2017.8170751.
20. C-2017 J. Chacko, K. Juretus, M. Jacovic, C. Sahin, N. Kandasamy, I. Savidis, and K. Dandekar, "Physical gate based preamble obfuscation for securing wireless communication," in *2017 International Conference on Computing, Networking and Communications (ICNC)*, Jan. 2017, pp. 293–297. DOI: 10.1109/ICNC.2017.7876142.
21. C-2017 A. Lackpour, C. Hamilton, M. Jacovic, I. Rasheed, X. R. Rey, and K. R. Dandekar, "Enhanced 5G spectrum sharing using a new adaptive NC-OFDM waveform with reconfigurable antennas," in *2017 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, Mar. 2017, pp. 1–2. DOI: 10.1109/DySPAN.2017.7920778.
22. C-2017 A. Lackpour, S. Mason, C. Hamilton, D. Tigreros, M. Giovannucci, M. Marcou, Y. Liu, M. Jacovic, and K. R. Dandekar, "Design and implementation of the secondary user-enhanced spectrum sharing (SUESS) radio," in *2017 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, Mar. 2017, pp. 1–2. DOI: 10.1109/DySPAN.2017.7920785.

23. C-2017 W. M. Mongan, I. Rasheed, K. Ved, S. Vora, K. Dandekar, G. Dion, T. Kurzweg, and A. Fontecchio, "On the use of radio frequency identification for continuous biomedical monitoring," in *2017 IEEE/ACM Second International Conference on Internet-of-Things Design and Implementation (IoTDI)*, Apr. 2017, pp. 197–202.
24. C-2017 W. Mongan, R. Ross, I. Rasheed, Y. Liu, K. Ved, E. Anday, K. Dandekar, G. Dion, T. Kurzweg, and A. Fontecchio, "Data fusion of single-tag RFID measurements for respiratory rate monitoring," in *2017 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Dec. 2017, pp. 1–6. DOI: 10.1109/SPMB.2017.8257028.
25. C-2017 D. H. Nguyen, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, "Sub-microsecond network synchronization for distributed wireless PHY protocols," in *Proceedings of the 9th ACM Workshop on Wireless of the Students, by the Students, and for the Students*, ser. S3 '17, Snowbird, Utah, USA: ACM, 2017, pp. 3–5, ISBN: 978-1-4503-5145-4. DOI: 10.1145/3131348.3131349. [Online]. Available: <http://doi.acm.org/10.1145/3131348.3131349>.
26. C-2017 A. Paatelma, D. H. Nguyen, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, "Reinforcement learning system to mitigate small-cell interference through directionality," in *2017 IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, Oct. 2017, pp. 1–7. DOI: 10.1109/PIMRC.2017.8292393.
27. C-2017 V. Pano, Y. Liu, I. Yilmaz, A. More, B. Taskin, and K. Dandekar, "Wireless NoCs using directional and substrate propagation antennas," in *2017 IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, Jul. 2017, pp. 188–193. DOI: 10.1109/ISVLSI.2017.41.
28. C-2017 S. A. Vora, W. M. Mongan, E. K. Anday, K. R. Dandekar, G. Dion, A. K. Fontecchio, and T. P. Kurzweg, "On implementing an unconventional infant vital signs monitor with passive RFID tags," in *2017 IEEE International Conference on RFID (RFID)*, May 2017, pp. 47–53. DOI: 10.1109/RFID.2017.7945586.
29. C-2016 S. Begashaw, J. Chacko, N. Gulati, D. H. Nguyen, N. Kandasamy, and K. R. Dandekar, "Experimental evaluation of a reconfigurable antenna system for blind interference alignment," in *2016 IEEE 17th Annual Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2016, pp. 1–6. DOI: 10.1109/WAMICON.2016.7483855.
30. C-2016 S. Begashaw, D. H. Nguyen, and K. R. Dandekar, "Enhancing blind interference alignment with reinforcement learning," in *2016 IEEE Global Communications Conference (GLOBECOM)*, Dec. 2016, pp. 1–7. DOI: 10.1109/GLOCOM.2016.7841815.
31. C-2016 B. Z. Katz, C. Sahin, and K. R. Dandekar, "Real-time wireless physical layer encryption," in *2016 IEEE 17th Annual Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2016, pp. 1–4. DOI: 10.1109/WAMICON.2016.7483851.
32. C-2016 Y. Liu, A. Levitt, C. Kara, C. Sahin, G. Dion, and K. R. Dandekar, "An improved design of wearable strain sensor based on knitted RFID technology," in *2016 IEEE Conference on Antenna Measurements Applications (CAMA)*, Oct. 2016, pp. 1–4. DOI: 10.1109/CAMA.2016.7815769.
33. C-2016 W. M. Mongan, I. Rasheed, K. Ved, A. Levitt, E. Anday, K. Dandekar, G. Dion, T. Kurzweg, and A. Fontecchio, "Real-time detection of apnea via signal processing of time-series properties of RFID-based smart garments," in *2016 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Dec. 2016, pp. 1–6. DOI: 10.1109/SPMB.2016.7846871.

34. C-2016 W. Mongan, E. Anday, G. Dion, *et al.*, “A multi-disciplinary framework for continuous biomedical monitoring using low-power passive RFID-based wireless wearable sensors,” in *2016 IEEE International Conference on Smart Computing (SMARTCOMP)*, May 2016, pp. 1–6. DOI: 10.1109/SMARTCOMP.2016.7501674.
35. C-2016 D. H. Nguyen, L. Henderson, J. Chacko, C. Sahin, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, “Beamviewer: Visualization of dynamic antenna radiation patterns using augmented reality,” in *2016 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPs)*, Apr. 2016, pp. 794–795. DOI: 10.1109/INFOCOMW.2016.7562185.
36. C-2016 D. H. Nguyen, J. Chacko, L. Henderson, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, “WiART - visualize and interact with wireless networks using augmented reality: Demo,” in *Proceedings of the 22Nd Annual International Conference on Mobile Computing and Networking*, ser. MobiCom '16, New York City, New York: ACM, 2016, pp. 511–512, ISBN: 978-1-4503-4226-1. DOI: 10.1145/2973750.2985626. [Online]. Available: <http://doi.acm.org/10.1145/2973750.2985626>.
37. C-2016 D. H. Nguyen, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, “Enabling synchronous directional channel access on SDRs for spectrum sharing applications,” in *Proceedings of the Tenth ACM International Workshop on Wireless Network Testbeds, Experimental Evaluation, and Characterization*, ser. WiNTECH '16, New York City, New York: ACM, 2016, pp. 57–64, ISBN: 978-1-4503-4252-0. DOI: 10.1145/2980159.2980166. [Online]. Available: <http://doi.acm.org/10.1145/2980159.2980166>.
38. C-2016 —, “Enhancing indoor spatial reuse through adaptive antenna beamsteering: Demo,” in *Proceedings of the Tenth ACM International Workshop on Wireless Network Testbeds, Experimental Evaluation, and Characterization*, ser. WiNTECH '16, New York City, New York: ACM, 2016, pp. 81–82, ISBN: 978-1-4503-4252-0. DOI: 10.1145/2980159.2980170. [Online]. Available: <http://doi.acm.org/10.1145/2980159.2980170>.
39. C-2016 V. Pano, I. Yilmaz, Y. Liu, B. Taskin, and K. Dandekar, “Wireless network-on-chip analysis of propagation technique for on-chip communication,” in *2016 IEEE 34th International Conference on Computer Design (ICCD)*, Oct. 2016, pp. 400–403. DOI: 10.1109/ICCD.2016.7753313.
40. C-2016 C. Sahin, B. Katz, and K. R. Dandekar, “Secure and robust symmetric key generation using physical layer techniques under various wireless environments,” in *2016 IEEE Radio and Wireless Symposium (RWS)*, Jan. 2016, pp. 211–214. DOI: 10.1109/RWS.2016.7444407.
41. C-2016 C. Sahin, D. Nguyen, S. Begashaw, B. Katz, J. Chacko, L. Henderson, J. Stanford, and K. R. Dandekar, “Wireless communications engineering education via augmented reality,” in *2016 IEEE Frontiers in Education Conference (FIE)*, Oct. 2016, pp. 1–7. DOI: 10.1109/FIE.2016.7757366.
42. C-2016 G. D. Sworo, K. R. Dandekar, and M. Kam, “Performance of pattern diversity in reconfigurable antenna arrays,” in *2016 Annual Conference on Information Science and Systems (CISS)*, Mar. 2016, pp. 59–63. DOI: 10.1109/CISS.2016.7460477.
43. C-2016 S. Vora, W. Mongan, K. Dandekar, A. Fontecchio, and T. Kurzweg, “Wireless heart and respiration monitoring for infants using passive RFID tags,” in *2016 IEEE Proceedings of the International Conference on Biomedical and Health Informatics*, IEEE, 2016.

44. C-2015 J. Chacko, C. Sahin, D. Pfeil, N. Kandasamy, and K. Dandekar, “Rapid prototyping of wireless physical layer modules using flexible software/hardware design flow,” in *Proceedings of the 2015 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays*, ser. FPGA '15, Monterey, California, USA: ACM, 2015, pp. 32–35, ISBN: 978-1-4503-3315-3. DOI: 10.1145/2684746.2689084. [Online]. Available: <http://doi.acm.org/10.1145/2684746.2689084>.
45. C-2015 A. Hakkarainen, J. Werner, M. Renfors, K. R. Dandekar, and M. Valkama, “Transceiver I/Q imbalance and widely-linear spatial processing in large antenna systems,” in *2015 International Symposium on Wireless Communication Systems (ISWCS)*, Aug. 2015, pp. 651–655. DOI: 10.1109/ISWCS.2015.7454428.
46. C-2015 M. Jacovic, J. Chacko, D. Pfeil, N. Kandasamy, and K. R. Dandekar, “Hardware implementation of low-overhead data aided timing and carrier frequency offset correction for OFDM signals,” in *MILCOM 2015 - 2015 IEEE Military Communications Conference*, Oct. 2015, pp. 495–500. DOI: 10.1109/MILCOM.2015.7357491.
47. C-2015 M. Jacovic, J. Chacko, D. Pfeil, N. Kandasamy, and K. R. Dandekar, “FPGA implementation of trained coarse carrier frequency offset estimation and correction for OFDM signals (abstract only),” in *Proceedings of the 2015 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays*, ser. FPGA '15, Monterey, California, USA: ACM, 2015, pp. 271–271, ISBN: 978-1-4503-3315-3. DOI: 10.1145/2684746.2689128. [Online]. Available: <http://doi.acm.org/10.1145/2684746.2689128>.
48. C-2015 Y. Liu, V. Pano, D. Patron, K. Dandekar, and B. Taskin, “Innovative propagation mechanism for inter-chip and intra-chip communication,” in *2015 IEEE 16th Annual Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2015, pp. 1–6. DOI: 10.1109/WAMICON.2015.7120367.
49. C-2015 W. Mongan, K. Dandekar, G. Dion, T. Kurzweg, and A. Fontecchio, “Statistical analytics of wearable passive RFID-based biomedical textile monitors for real-time state classification,” in *2015 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Dec. 2015, pp. 1–2. DOI: 10.1109/SPMB.2015.7405465.
50. C-2015 D. H. Nguyen, M. Rauhanummi, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, “Leveraging an agile RF transceiver for rapid prototyping of small-cell systems,” in *2015 IEEE 82nd Vehicular Technology Conference (VTC2015-Fall)*, Sep. 2015, pp. 1–5. DOI: 10.1109/VTCFall.2015.7391006.
51. C-2015 D. Patron, G. Dion, A. Fontecchio, T. Kurzweg, and K. Dandekar, “Wearable biomedical strain sensing via knitted antennas and inductively-coupled RFID tags,” in *2015 IEEE Proceedings of the WAMICON Conference*, IEEE, 2015.
52. C-2015 D. Patron, D. Piazza, and K. R. Dandekar, “On the use of lumped filters for designing dual-band planar antennas with omnidirectional and directional radiation patterns,” in *2015 IEEE 16th Annual Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2015, pp. 1–3. DOI: 10.1109/WAMICON.2015.7120378.
53. C-2015 C. Sahin, D. Nguyen, J. Chacko, and K. R. Dandekar, “Wireless cybersecurity education via a software defined radio laboratory,” in *2015 IEEE Frontiers in Education Conference (FIE)*, Oct. 2015, pp. 1–8. DOI: 10.1109/FIE.2015.7344153.
54. C-2015 G. D. Sworo, K. R. Dandekar, and M. Kam, “Analyzing the benefits of pattern diversity for MIMO wireless systems,” in *2015 International Conference on Computing, Networking and Communications (ICNC)*, Feb. 2015, pp. 999–1003. DOI: 10.1109/ICNC.2015.7069483.

55. C-2015 G. D. Sworo, D. Patron, K. R. Dandekar, and M. Kam, "Characterization of pattern reconfigurable antenna arrays for MIMO systems," in *2015 49th Annual Conference on Information Sciences and Systems (CISS)*, Mar. 2015, pp. 1–3. DOI: 10.1109/CISS.2015.7086425.
56. C-2015 G. D. Sworo, C. Sahin, K. R. Dandekar, and M. Kam, "Towards integrating pattern reconfigurable antennas in WIMAX/LTE radios," in *2015 IEEE 16th Annual Wireless and Microwave Technology Conference (WAMICON)*, Apr. 2015, pp. 1–5. DOI: 10.1109/WAMICON.2015.7120310.
57. C-2015 S. Vora, K. Dandekar, and T. Kurzweg, "Passive RFID tag based heart rate monitoring from an ECG signal," in *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Aug. 2015, pp. 4403–4406. DOI: 10.1109/EMBC.2015.7319371.
58. C-2014 J. Chacko, C. Sahin, D. Nguyen, D. Pfeil, N. Kandasamy, and K. Dandekar, "FPGA-based latency-insensitive OFDM pipeline for wireless research," in *2014 IEEE High Performance Extreme Computing Conference (HPEC)*, Sep. 2014, pp. 1–6. DOI: 10.1109/HPEC.2014.7040969.
59. C-2014 A. Hakkarainen, J. Werner, K. R. Dandekar, and M. Valkama, "Precoded massive MU-MIMO uplink transmission under transceiver I/Q imbalance," in *2014 IEEE Globecom Workshops (GC Wkshps)*, Dec. 2014, pp. 320–326. DOI: 10.1109/GLOCOMW.2014.7063451.
60. C-2014 A. Hakkarainen, J. Werner, K. Dandekar, and M. Valkama, "Interference suppression with antenna arrays in OFDM systems under transceiver I/Q imbalance," in *2014 9th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM)*, Jun. 2014, pp. 278–284. DOI: 10.4108/icst.crowncom.2014.255187.
61. C-2014 A. Hakkarainen, J. Werner, N. Gulati, D. Patron, D. Pfeil, H. Paaso, A. Mammela, K. Dandekar, and M. Valkama, "Reconfigurable antenna based DOA estimation and localization in cognitive radios: Low complexity algorithms and practical measurements," in *2014 9th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM)*, Jun. 2014, pp. 454–459. DOI: 10.4108/icst.crowncom.2014.255730.
62. C-2014 C. S. Lester, R. Measel, D. J. Bucci, K. Wanuga, R. Primerano, M. Kam, and K. Dandekar, "Effects of reconfigurable antennas on wireless network performance within a ticonderoga-class engine room," in *American Society of Naval Engineers (ASNE) Electric Machines Technology Symposium (EMTS)*, 2014.
63. C-2014 R. Measel, D. J. Bucci, C. S. Lester, K. Wanuga, R. Primerano, K. R. Dandekar, and M. Kam, "A matlab platform for characterizing MIMO-OFDM communications with software-defined radios," in *2014 IEEE International Workshop Technical Committee on Communications Quality and Reliability (CQR)*, May 2014, pp. 1–6. DOI: 10.1109/CQR.2014.7152637.
64. C-2014 R. Measel, C. S. Lester, D. J. Bucci, K. Wanuga, G. Tait, R. Primerano, K. R. Dandekar, and M. Kam, "Reconfigurable antennas in highly multipath environments," in *2014 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, Jul. 2014, pp. 394–395. DOI: 10.1109/APS.2014.6904529.

65. C-2014 D. Nguyen, C. Sahin, B. Shishkin, N. Kandasamy, and K. R. Dandekar, "A real-time and protocol-aware reactive jamming framework built on software-defined radios," in *Proceedings of the 2014 ACM Workshop on Software Radio Implementation Forum*, ser. SRIF '14, Chicago, Illinois, USA: ACM, 2014, pp. 15–22, ISBN: 978-1-4503-2995-8. DOI: 10.1145/2627788.2627798. [Online]. Available: <http://doi.acm.org/10.1145/2627788.2627798>.
66. C-2014 D. Patron and K. R. Dandekar, "Planar reconfigurable antenna with integrated switching control circuitry," in *The 8th European Conference on Antennas and Propagation (EuCAP 2014)*, Apr. 2014, pp. 2737–2740. DOI: 10.1109/EuCAP.2014.6902391.
67. C-2014 D. Patron, K. Gedin, T. Kurzweg, A. Fontecchio, G. Dion, and K. R. Dandekar, "A wearable RFID sensor and effects of human body proximity," in *2014 IEEE Benjamin Franklin Symposium on Microwave and Antenna Sub-systems for Radar, Telecommunications, and Biomedical Applications (BenMAS)*, Sep. 2014, pp. 1–3. DOI: 10.1109/BenMAS.2014.7529464.
68. C-2014 D. Patron, K. Jost, A. Cook, J. Fisher, M. Le, S. Watt, Y. Gogotsi, K. Dandekar, and G. Dion, "Knitted wireless power harvesting and storage," in *2014 Proceedings of the Fiber Society Conference*, 2014.
69. C-2014 D. Patron, T. Kurzweg, A. Fontecchio, G. Dion, and K. R. Dandekar, "Wireless strain sensor through a flexible tag antenna employing inductively-coupled RFID microchip," in *WAMICON 2014*, Jun. 2014, pp. 1–3. DOI: 10.1109/WAMICON.2014.6857765.
70. C-2014 K. Wanuga, N. Gulati, H. Saarnisaari, and K. R. Dandekar, "Online learning for spectrum sensing and reconfigurable antenna control," in *2014 9th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWN-COM)*, Jun. 2014, pp. 508–513. DOI: 10.4108/icst.crowncom.2014.255737.
71. C-2014 M. Williams, D. Patron, and K. Dandekar, "Investigation of switching techniques for reconfigurable multiband planar antennas," in *2014 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, Jul. 2014, pp. 1095–1096. DOI: 10.1109/APS.2014.6904874.
72. C-2013 N. Gulati, R. Greenstadt, K. R. Dandekar, and J. M. Walsh, "GMM based semi-supervised learning for channel-based authentication scheme," in *2013 IEEE 78th Vehicular Technology Conference (VTC Fall)*, Sep. 2013, pp. 1–6. DOI: 10.1109/VTCFall.2013.6692216.
73. C-2013 A. Hakkarainen, J. Werner, K. R. Dandekar, and M. Valkama, "RF-aware widely-linear beamforming and null-steering in cognitive radio transmitters," in *8th International Conference on Cognitive Radio Oriented Wireless Networks*, Jul. 2013, pp. 172–177. DOI: 10.1109/CROWNCom.2013.6636813.
74. C-2013 A. Hakkarainen, J. Werner, M. Renfors, K. Dandekar, and M. Valkama, "RF-aware widely-linear mmse beamforming," in *ISWCS 2013; The Tenth International Symposium on Wireless Communication Systems*, Aug. 2013, pp. 1–5.
75. C-2013 S. Herbert, D. Patron, T. Kurzweg, F. A., K. Dandekar, and G. Dion, "The creation of deformation sensor using 'smart' fabrics: Applications to in vivo monitoring of pregnant women," in *Proceedings of the Smart Fabrics and Wearable Technology Conference*, 2013.

76. C-2013 H. Paaso, A. Mammela, D. Patron, and K. R. Dandekar, "DOA estimation through modified unitary music algorithm for CRLH leaky-wave antennas," in *2013 IEEE 24th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, Sep. 2013, pp. 311–315. DOI: 10.1109/PIMRC.2013.6666152.
77. C-2013 —, "Modified music algorithm for DOA estimation using CRLH leaky-wave antennas," in *8th International Conference on Cognitive Radio Oriented Wireless Networks*, Jul. 2013, pp. 166–171. DOI: 10.1109/CROWNCom.2013.6636812.
78. C-2013 D. Patron, K. R. Dandekar, and A. S. Daryoush, "Optical control of pattern-reconfigurable planar antennas," in *2013 IEEE International Topical Meeting on Microwave Photonics (MWP)*, Oct. 2013, pp. 33–36. DOI: 10.1109/MWP.2013.6724012.
79. C-2013 D. Patron, K. R. Dandekar, and D. Piazza, "A reconfigurable antenna with omnidirectional and directional patterns for MIMO systems," in *2013 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, Jul. 2013, pp. 204–205. DOI: 10.1109/APS.2013.6710763.
80. C-2013 D. Patron, A. S. Daryoush, K. R. Dandekar, and D. Piazza, "Design and harmonic balance analysis of a wideband planar antenna having reconfigurable omnidirectional and directional patterns," in *WAMICON 2013*, Apr. 2013, pp. 1–5. DOI: 10.1109/WAMICON.2013.6572770.
81. C-2013 D. Patron, H. Paaso, A. Mammela, D. Piazza, and K. R. Dandekar, "Improved design of a CRLH leaky-wave antenna and its application for DOA estimation," in *2013 IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC)*, Sep. 2013, pp. 1343–1346. DOI: 10.1109/APWC.2013.6624937.
82. C-2013 G. D. Sworo, K. R. Dandekar, and M. Kam, "Design and analysis of reconfigurable antennas for WIMAX applications," in *WAMICON 2013*, Apr. 2013, pp. 1–3. DOI: 10.1109/WAMICON.2013.6572732.
83. C-2012 R. Bahl, N. Gulati, K. R. Dandekar, and D. Jaggard, "Impact of pattern reconfigurable antennas on interference alignment over measured channels," in *2012 IEEE Globecom Workshops*, Dec. 2012, pp. 557–562. DOI: 10.1109/GLOCOMW.2012.6477634.
84. C-2012 N. Gulati, D. Gonzalez, and K. R. Dandekar, "Learning algorithm for reconfigurable antenna state selection," in *2012 IEEE Radio and Wireless Symposium*, Jan. 2012, pp. 31–34. DOI: 10.1109/RWS.2012.6175375.
85. C-2012 G. D. Sworo, M. Kam, and K. R. Dandekar, "Performance of link adaptation algorithms and reconfigurable antennas for MIMO-OFDM wireless systems," in *2012 46th Annual Conference on Information Sciences and Systems (CISS)*, Mar. 2012, pp. 1–5. DOI: 10.1109/CISS.2012.6310795.
86. C-2012 K. Wanuga, D. Pfeil, D. Gonzalez, and K. Dandekar, "A software defined testbed for reconfigurable antenna cognitive radio," in *2012 7th International ICST Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM)*, Jun. 2012, pp. 1–6. DOI: 10.4108/icst.crowncom.2012.249582.
87. C-2011 M. Bielinski, K. Wanuga, R. Primerano, M. Kam, and K. R. Dandekar, "Application of adaptive OFDM bit loading for high data rate through-metal communication," in *2011 IEEE Global Telecommunications Conference - GLOBECOM 2011*, Dec. 2011, pp. 1–5. DOI: 10.1109/GLOCOM.2011.6134139.

88. C-2011 —, “High data rate adaptive ultrasonic OFDM physical layer for through-metal communications,” in *American Society of Naval Engineers (ASNE) Intelligent Ships Symposium*, 2011.
89. C-2011 K. R. Dandekar, S. Sinha, and N. Ampofo-Anti, “IEEE-based implementation of engineering projects in community service,” in *2011 IEEE Global Humanitarian Technology Conference*, Oct. 2011, pp. 481–486. DOI: 10.1109/GHTC.2011.70.
90. C-2011 D. Gonzalez, J. Kountouriotis, D. Lach, R. Bertolazzi, P. Das, and K. Dandekar, “Performance of a reconfigurable antenna configuration selection scheme in a MIMO-OFDM system with modulation rate adaptation,” in *2011 International Symposium of Modeling and Optimization of Mobile, Ad Hoc, and Wireless Networks*, May 2011, pp. 307–313. DOI: 10.1109/WIOPT.2011.5930032.
91. C-2011 J. Kountouriotis, D. Piazza, K. R. Dandekar, M. D’Amico, and C. Guardiani, “Performance analysis of a reconfigurable antenna system for MIMO communications,” in *Proceedings of the 5th European Conference on Antennas and Propagation (EUCAP)*, Apr. 2011, pp. 543–547.
92. C-2011 B. Shishkin, D. Pfeil, D. Nguyen, K. Wanuga, J. Chacko, J. Johnson, N. Kandasamy, T. P. Kurzweg, and K. R. Dandekar, “SDC testbed: Software defined communications testbed for wireless radio and optical networking,” in *2011 International Symposium of Modeling and Optimization of Mobile, Ad Hoc, and Wireless Networks*, May 2011, pp. 300–306. DOI: 10.1109/WIOPT.2011.5930031.
93. C-2011 G. D. Sworo, R. Measel, M. Kam, and K. Dandekar, “Optimization of adaptive modulation and coding techniques for OFDM systems,” in *2011 5th International Conference on Signal Processing and Communication Systems (ICSPCS)*, Dec. 2011, pp. 1–5. DOI: 10.1109/ICSPCS.2011.6140882.
94. C-2011 K. Wanuga, P. Mookiah, and K. R. Dandekar, “Measurement of the MIMO UWB OFDM channel,” in *2011 IEEE Radio and Wireless Symposium*, Jan. 2011, pp. 21–24. DOI: 10.1109/RWS.2011.5725508.
95. C-2010 N. J. Kirsch, N. A. Vacirca, T. P. Kurzweg, A. K. Fontecchio, and K. R. Dandekar, “Performance of transparent conductive polymer antennas in a MIMO ad-hoc network,” in *2010 IEEE 6th International Conference on Wireless and Mobile Computing, Networking and Communications*, Oct. 2010, pp. 9–14. DOI: 10.1109/WIMOB.2010.5644868.
96. C-2010 J. Kountouriotis and K. R. Dandekar, “Reconfigurable antennas and distributed bit loading for MIMO ad-hoc networks,” in *2010 - MILCOM 2010 MILITARY COMMUNICATIONS CONFERENCE*, Oct. 2010, pp. 381–386. DOI: 10.1109/MILCOM.2010.5680450.
97. C-2010 J. Kountouriotis, X. Liu, A. P. Petropulu, and K. R. Dandekar, “ALOHA with collision resolution: MAC layer analysis and software defined radio implementation,” in *2010 44th Annual Conference on Information Sciences and Systems (CISS)*, Mar. 2010, pp. 1–6. DOI: 10.1109/CISS.2010.5464810.
98. C-2010 A. Lackpour, P. Mookiah, M. Olivieri, and K. Dandekar, “Evaluation of the reconfigurable printed fractal tree antenna for enhanced pattern diversity in MIMO systems,” in *2010 IEEE Radio and Wireless Symposium (RWS)*, Jan. 2010, pp. 96–99. DOI: 10.1109/RWS.2010.5434232.

99. C-2010 X. Liu, J. Kountouriotis, A. P. Petropulu, and K. R. Dandekar, "ALOHA with collision resolution: Physical layer description and software defined radio implementation," in *2010 IEEE International Conference on Acoustics, Speech and Signal Processing*, Mar. 2010, pp. 3330–3333. DOI: 10.1109/ICASSP.2010.5496007.
100. C-2010 P. Mookiah and K. R. Dandekar, "Enhancing wireless security through reconfigurable antennas," in *2010 IEEE Radio and Wireless Symposium (RWS)*, Jan. 2010, pp. 593–596. DOI: 10.1109/RWS.2010.5434129.
101. C-2010 P. Mookiah, J. Kountouriotis, R. Dorsey, B. Shishkin, and K. R. Dandekar, "Securing wireless links at the physical layer through reconfigurable antennas," in *2010 IEEE Antennas and Propagation Society International Symposium*, Jul. 2010, pp. 1–4. DOI: 10.1109/APS.2010.5561248.
102. C-2009 S. V. Chinta, T. P. Kurzweg, D. S. Pfeil, and K. R. Dandekar, "4x4 space-time codes for free-space optical interconnects," vol. 7221, 2009, pp. 722116–722116–8. DOI: 10.1117/12.809506. [Online]. Available: <http://dx.doi.org/10.1117/12.809506>.
103. C-2009 C. Chrysanthou, J. Boksiner, M. Zankel, *et al.*, "Simulation of waveform interactions for interference analysis of military networks," in *MILCOM 2009 - 2009 IEEE Military Communications Conference*, Oct. 2009, pp. 1–7. DOI: 10.1109/MILCOM.2009.5379994.
104. C-2009 N. J. Kirsch, N. A. Vacirca, E. E. Plowman, T. P. Kurzweg, A. K. Fontecchio, and K. R. Dandekar, "Optically transparent conductive polymer RFID meandering dipole antenna," in *2009 IEEE International Conference on RFID*, Apr. 2009, pp. 278–282. DOI: 10.1109/RFID.2009.4911205.
105. C-2009 X. Liu, S. Oymak, A. P. Petropulu, and K. R. Dandekar, "Collision resolution based on pulse shape diversity," in *2009 IEEE 10th Workshop on Signal Processing Advances in Wireless Communications*, Jun. 2009, pp. 409–413. DOI: 10.1109/SPAWC.2009.5161817.
106. C-2009 D. S. Pfeil, S. Vamsidhar, T. P. Kurzweg, and K. R. Dandekar, "BER performance of MIMO diffuse free-space optical systems," vol. 7199, 2009, pp. 71990M–71990M–9. DOI: 10.1117/12.809481. [Online]. Available: <http://dx.doi.org/10.1117/12.809481>.
107. C-2009 D. Piazza, M. Capacchione, J. Kountouriotis, M. D'Amico, and K. R. Dandekar, "Stacked reconfigurable circular patch antenna for adaptive MIMO systems," in *2009 International Conference on Electromagnetics in Advanced Applications*, Sep. 2009, pp. 636–639. DOI: 10.1109/ICEAA.2009.5297270.
108. C-2009 D. Piazza, D. Michele, and K. R. Dandekar, "Two port reconfigurable CRLH leaky wave antenna with improved impedance matching and beam tuning," in *2009 3rd European Conference on Antennas and Propagation*, Mar. 2009, pp. 2046–2049.
109. C-2009 D. Piazza, P. Mookiah, M. D'Amico, and K. R. Dandekar, "Pattern and polarization reconfigurable circular patch for MIMO systems," in *2009 3rd European Conference on Antennas and Propagation*, Mar. 2009, pp. 1047–1051.
110. C-2009 R. Primerano, M. Kam, and K. Dandekar, "High bit rate ultrasonic communication through metal channels," in *2009 43rd Annual Conference on Information Sciences and Systems*, Mar. 2009, pp. 902–906. DOI: 10.1109/CISS.2009.5054845.

111. C-2008 A. Fridman, S. Weber, K. R. Dandekar, and M. Kam, "Cross-layer multicommodity capacity expansion on ad hoc wireless networks of cognitive radios," in *2008 42nd Annual Conference on Information Sciences and Systems*, Mar. 2008, pp. 676–680. DOI: 10.1109/CISS.2008.4558608.
112. C-2008 J. Kountouriotis, D. Piazza, P. Mookiah, M. D’Amico, and K. R. Dandekar, "Reconfigurable antennas for MIMO ad-hoc networks," in *2008 IEEE Radio and Wireless Symposium*, Jan. 2008, pp. 563–566. DOI: 10.1109/RWS.2008.4463554.
113. C-2008 P. Mookiah and K. R. Dandekar, "Performance analysis of metamaterial substrate based MIMO antenna arrays," in *IEEE GLOBECOM 2008 - 2008 IEEE Global Telecommunications Conference*, Nov. 2008, pp. 1–4. DOI: 10.1109/GLOCOM.2008.ECP.909.
114. C-2008 P. Mookiah, D. Piazza, and K. R. Dandekar, "Reconfigurable spiral antenna array for pattern diversity in wideband MIMO communication systems," in *2008 IEEE Antennas and Propagation Society International Symposium*, Jul. 2008, pp. 1–4. DOI: 10.1109/APS.2008.4619210.
115. C-2008 D. Piazza, M. D’Amico, and K. R. Dandekar, "MIMO communication system with reconfigurable circular patch antennas," in *2008 IEEE Antennas and Propagation Society International Symposium*, Jul. 2008, pp. 1–4. DOI: 10.1109/APS.2008.4619208.
116. C-2008 D. Piazza, P. Mookiah, M. D’Amico, and K. Dandekar, "Pattern reconfigurable circular patch antenna for MIMO communications," in *Proceedings of RILEM Conference*, Citeseer, 2008.
117. C-2007 R. Bhagavatula, R. W. Heath, A. Forenza, D. Piazza, and K. R. Dandekar, "Impact of mutual coupling and antenna efficiencies on adaptive switching between MIMO transmission strategies," in *2007 IEEE 66th Vehicular Technology Conference*, Sep. 2007, pp. 749–753. DOI: 10.1109/VETECF.2007.166.
118. C-2007 R. Dragone, J. Kountouriotis, P. Mookiah, and K. R. Dandekar, "Modeling MIMO-UWB OFDM systems with computational electromagnetics," in *IEEE GLOBECOM 2007 - IEEE Global Telecommunications Conference*, Nov. 2007, pp. 4527–4531. DOI: 10.1109/GLOCOM.2007.860.
119. C-2007 N. J. Kirsch, C. Liang, and K. R. Dandekar, "Experimental characterization of resource allocation algorithms in MIMO-OFDM ad hoc networks," in *2007 IEEE Radio and Wireless Symposium*, Jan. 2007, pp. 91–94. DOI: 10.1109/RWS.2007.351739.
120. C-2007 D. Piazza, P. Mookiah, M. D’Amico, and K. R. Dandekar, "Two port reconfigurable circular patch antenna for MIMO systems," in *The Second European Conference on Antennas and Propagation, EuCAP 2007*, Nov. 2007, pp. 1–7. DOI: 10.1049/ic.2007.0883.
121. C-2007 D. Piazza, P. Mookiah, M. D’Amico, and K. Dandekar, "Computational electromagnetic analysis of a reconfigurable multiport circular patch antenna for MIMO communications," in *Proceedings of the International Symposium on Electromagnetic Theory, EMTS*, 2007.
122. C-2007 R. Primerano, K. Wanuga, J. Dorn, M. Kam, and K. Dandekar, "Echo-cancellation for ultrasonic data transmission through a metal channel," in *2007 41st Annual Conference on Information Sciences and Systems*, Mar. 2007, pp. 841–845. DOI: 10.1109/CISS.2007.4298426.

123. C-2007 V. A. Rammohan, H. Sethu, M. R. Hosaagrahara, and K. R. Dandekar, "A new protocol to mitigate the unheard RTS/CTS problem in networks with switched beam antennas," in *2007 2nd International Symposium on Wireless Pervasive Computing*, Feb. 2007. DOI: 10.1109/ISWPC.2007.342587.
124. C-2007 K. Wanuga, D. Dorsey, R. Primerano, M. Kam, and K. Dandekar, "Hybrid ultrasonic and wireless networks for naval control applications," in *Proceedings of the 2007 ASNE Intelligent Ships Symposium VII*, 2007.
125. C-2006 A. Fridman, R. Grote, S. Weber, K. R. Dandekar, and M. Kam, "Robust optimal power control for ad hoc networks," in *2006 40th Annual Conference on Information Sciences and Systems*, Mar. 2006, pp. 729–733. DOI: 10.1109/CISS.2006.286562.
126. C-2006 D. Hamel, M. Chwastek, B. Farouk, K. Dandekar, and M. Kam, "A computational fluid dynamics approach for optimization of a sensor network," in *2006 IEEE International Workshop on Measurement Systems for Homeland Security, Contraband Detection and Personal Safety*, Oct. 2006, pp. 38–42. DOI: 10.1109/MSHS.2006.314347.
127. C-2006 J. Kountouriotis, N. J. Kirsch, and K. R. Dandekar, "Software defined radio demonstration of MIMO-OFDM rate adaptation," in *2006 1st IEEE Workshop on Networking Technologies for Software Defined Radio Networks*, Sep. 2006, pp. 52–58. DOI: 10.1109/SDR.2006.4286326.
128. C-2004 N. J. Kirsch and K. R. Dandekar, "Modeling effects of mutual coupling considered at both ends of a MIMO channel using computational electromagnetics," in *IEEE 60th Vehicular Technology Conference, 2004. VTC2004-Fall. 2004*, vol. 6, Sep. 2004, 4352–4355 Vol. 6. DOI: 10.1109/VETEFC.2004.1404901.
129. C-2004 C. Liang and K. R. Dandekar, "Modeling MIMO-OFDM ad-hoc communication systems with computational electromagnetics," in *IEEE 60th Vehicular Technology Conference, 2004. VTC2004-Fall. 2004*, vol. 6, Sep. 2004, 4340–4344 Vol. 6. DOI: 10.1109/VETEFC.2004.1404898.
130. C-2003 K. R. Dandekar and R. W. Heath, "Physical layer characterization of smart-antenna equipped mobile ad-hoc network nodes in an urban environment," in *IEEE Military Communications Conference, 2003. MILCOM 2003.*, vol. 2, Oct. 2003, 1376–1381 Vol.2. DOI: 10.1109/MILCOM.2003.1290427.
131. C-2003 K. R. Dandekar and R. W. Heath Jr, "Large-scale electromagnetic characterization of urban MIMO communication systems," in *Proc. of 2003 IEEE AP-S International Symposium and USNC/CNC/URSI National Radio Science Meeting*, 2003.
132. C-2003 M. J. Fakhereddin and K. R. Dandekar, "Combined effect of polarization diversity and mutual coupling on MIMO capacity," in *IEEE Antennas and Propagation Society International Symposium. Digest. Held in conjunction with: USNC/CNC/URSI North American Radio Sci. Meeting (Cat. No.03CH37450)*, vol. 2, Jun. 2003, 495–498 vol.2. DOI: 10.1109/APS.2003.1219283.
133. C-2002 R. W. Heath Jr and K. R. Dandekar, "Characterizations of narrowband MIMO channels," in *IEEE International Symposium on Wireless Communications*, Citeseer, 2002.
134. C-2000 K. R. Dandekar, H. Ling, and G. Xu, "Smart antenna array calibration procedure including amplitude and phase mismatch and mutual coupling effects," in *2000 IEEE International Conference on Personal Wireless Communications. Conference Proceedings (Cat. No.00TH8488)*, Dec. 2000, pp. 293–297. DOI: 10.1109/ICPWC.2000.905822.

135. C-1999 A. Arredondo, K. R. Dandekar, and G. Xu, "The quantitative effects of inaccurate uplink spatial signature observations on downlink signal to interference ratio," in *1999 2nd IEEE Workshop on Signal Processing Advances in Wireless Communications (Cat. No.99EX304)*, May 1999, pp. 345–349. DOI: 10.1109/SPAWC.1999.783089.
136. C-1999 K. R. Dandekar, A. Arredondo, G. Xu, and H. Ling, "Using ray tracing to study urban vector channel propagation characteristics," in *1999 IEEE 49th Vehicular Technology Conference (Cat. No.99CH36363)*, vol. 1, May 1999, 381–385 vol.1. DOI: 10.1109/VETEC.1999.778082.
137. C-1999 K. R. Dandekar, A. Arredondo, G. Xu, and H. Ling, "Ray tracing to evaluate smart antenna system performance for wireless communications," vol. 3708, 1999, pp. 108–117. DOI: 10.1117/12.351223. [Online]. Available: <http://dx.doi.org/10.1117/12.351223>.
138. C-1999 A. Kavak, W. Yang, K. R. Dandekar, and G. Xu, "Effects of base station antenna height and mobile terminal movement on the vector propagation channels," in *1999 IEEE 49th Vehicular Technology Conference (Cat. No.99CH36363)*, vol. 1, May 1999, 777–781 vol.1. DOI: 10.1109/VETEC.1999.778298.
139. C-1999 A. Kavak, W. Yang, S.-Y. Kim, K. R. Dandekar, and G. Xu, "Experimental studies of indoor propagation characteristics of a smart antenna system at 1.8 GHz," vol. 3708, 1999, pp. 98–107. DOI: 10.1117/12.351222. [Online]. Available: <http://dx.doi.org/10.1117/12.351222>.

Theses and Technical Reports:

1. T-2020 M. Kraus, "Semi-supervised machine learning based RF node authentication using properties of the wireless channel," Master's thesis, Drexel University, Philadelphia, PA, Sep. 2020.
2. T-2020 Y. Liu, "Novel antenna technology for internet of things applications," PhD thesis, Drexel University, Philadelphia, PA, Jun. 2020.
3. T-2019 S. Begashaw, "Enhancing multi-user networks with pattern reconfigurable antennas," PhD thesis, Drexel University, Philadelphia, PA, May 2019.
4. T-2017 J. Chacko, "FPGA-based reconfigurable physical layer architecture for wireless applications," PhD thesis, Drexel University, Philadelphia, PA, May 2017.
5. T-2017 D. Nguyen, "Agile spectrum-sharing wireless systems using software-defined radios and reconfigurable antennas," PhD thesis, Drexel University, Philadelphia, PA, Aug. 2017.
6. T-2017 S. Wolfe, "Adaptive link optimization for 802.11 UAV uplink using a reconfigurable antenna," Master's thesis, Drexel University, Philadelphia, PA, May 2017.
7. T-2016 B. Katz, "Enabling real-time wireless channel based encryption key generation," Master's thesis, Drexel University, Philadelphia, PA, Sep. 2016.
8. T-2016 D. H. Nguyen, M. Jacovic, I. Rasheed, and K. R. Dandekar, "Radio Frequency Coordination at the Democratic National Convention," Drexel University, Wireless System Laboratory, Tech. Rep., 2016.
9. T-2016 D. H. Nguyen, A. Paatelma, H. Saarnisaari, N. Kandasamy, and K. R. Dandekar, "Enhancing Indoor Spatial Reuse through Adaptive Beamsteering," Drexel University, Wireless System Laboratory, Tech. Rep., 2016.

10. T-2015 D. Patron, "Compact reconfigurable antennas for wireless systems and wearable applications," PhD thesis, Drexel University, Philadelphia, PA, Jun. 2015.
11. T-2012 R. Bahl, "Impact of reconfigurable antennas on interference alignment," Master's thesis, University of Pennsylvania, Philadelphia, PA, Aug. 2012.
12. T-2012 M. Bielinski, "Adaptive algorithm for high data rate through-metal communication," Master's thesis, Drexel University, Philadelphia, PA, Jun. 2012.
13. T-2012 M. Chernyavskiy, "Compact multifunctional dipole antenna array for MIMO systems," Master's thesis, Drexel University, Philadelphia, PA, Jun. 2012.
14. T-2011 P. Mookiah, "Reconfigurable antennas for wireless network security," PhD thesis, Drexel University, Philadelphia, PA, Sep. 2011.
15. T-2011 G. Sosa, "A joint bit-loading and symbol rotation scheme for multi-carrier systems," Master's thesis, Drexel University, Philadelphia, PA, Dec. 2011.
16. T-2010 M.-E. Dumitru, "FPGA implementation of diversity and spatial multiplexing for MIMO free space optical interconnects," Master's thesis, Drexel University, Philadelphia, PA, Sep. 2010.
17. T-2010 S. Vora, "Design and analysis of a FSO MIMO transmitter receiver circuit compatible with space time coding," Master's thesis, Drexel University, Philadelphia, PA, Sep. 2010.
18. T-2009 N. Kirsch, "Experimental analysis of power control and element spacing for unobtrusive MIMO antenna systems," PhD thesis, Drexel University, Philadelphia, PA, Jun. 2009.
19. T-2009 D. Piazza, "Reconfigurable antennas for adaptive MIMO communication systems," PhD thesis, Drexel University, Philadelphia, PA, Jun. 2009.
20. T-2008 R. Dragone, "Quantifying the effect of mutual coupling in Ultra-Wideband-Multi-Band Multiple Input Multiple Output systems," Master's thesis, Drexel University, Philadelphia, PA, Jun. 2008.
21. T-2008 D. Pfeil, "MIMO diffuse free space optical transceiver design," Master's thesis, Drexel University, Philadelphia, PA, Jun. 2008.
22. T-2006 C. Liang, "A game-theoretic approach to power management in MIMO-OFDM ad hoc networks," PhD thesis, Drexel University, Philadelphia, PA, Sep. 2006.
23. T-2001 K. R. Dandekar, "Space division multiple access systems: Computational electromagnetic studies of the physical and network layers," PhD thesis, University of Texas at Austin, Austin, TX, May 2001.
24. T-1998 —, "Multi-model interaction techniques: The hobbes virtual reality application development system," U.S. Naval Research Laboratory, Tech. Rep. 5510-98-9876, Apr. 1998.

Students:

- Students Currently Supervised:

Vasil Pano (Post-doc)
 Alex Lackpour (part-time Ph.D. candidate)
 Oday Bshara (Ph.D)
 Marko Jacovic (Ph.D.)
 Xaime Rivas Rey (Ph.D.)
 Md Abu Saleh Tajin (Ph.D.)
 Brandon Katz (part-time Ph.D., JHU APL)
 Michael Liston (part-time Ph.D., LMCO ATL)

- Students Graduated:

Yuqiao Liu (Ph.D., 2020)
 Simon Begashaw (Ph.D., 2019)
 James Chacko (Ph.D., 2017) (co-advised with Naga Kandasamy)
 Danh Nguyen (Ph.D., 2017) (co-advised with Naga Kandasamy)
 Nikhil Gulati (Ph.D., 2015)
 Damiano Patron (Ph.D., 2015)
 George Sworo (Ph.D., 2015) (co-advised with Moshe Kam)
 Ryan Measel (Ph.D., 2014) (co-advised with Moshe Kam)
 John Kountouriotis (Ph.D., 2013)
 Prathaban Mookiah (Ph.D., 2011)
 Nicholas Kirsch (Ph.D., 2009)
 Daniele Piazza (Ph.D., 2009)
 Chao Liang (Ph.D., 2006)

Martin Kraus (M.S., 2020) Khyati Ved (M.S., 2017)
 Chase Hamilton (M.S., 2017)
 Stephen Wolfe (M.S., 2017)
 Brandon Katz (M.S., 2016)
 Mikhail Chernyavskiy (M.S., 2012)
 Guillermo Sosa (M.S., 2011)
 Mihnea Elian Dumitru (M.S., 2010)
 Sai Chinta (M.S., 2009)
 Doug Pfeil (M.S., 2008)
 Rocco Dragone (M.S., 2008)
 David Hamel (M.S., 2007)
 Michael Warde (M.S., 2007)
 Matthew Chwastek (M.S., 2007)
 William Norman (M.S., 2007)
 Matthew Garfield (M.S., 2006)
 Abhishek Khemka (M.S., 2006)
 Sumant Kawale (M.S., 2004)
 Maralle Fakhereddin (M.S., 2004)

Grants:

Notation used for grants and proposals in this document is as follows:

RG	Research Grant (funded)
EG	Equipment Grant (funded)

1. RG-2001 “Employing Wireless LAN standards for communication between TOC vehicles - Phase 2,” *PI*: Athina Petropulu, *Co-Is*: Kapil R. Dandekar, Army CECOM (Applied Communications and Information Networking Program), \$70,000, (2001-2002).
2. RG-2002 “Employing Wireless LAN standards for communication between TOC vehicles - Phase 2 Extension,” *PI*: Athina Petropulu, *Co-Is*: Kapil R. Dandekar, Army CECOM (Applied Communications and Information Networking Program), \$28,000, (2002-2003).
3. RG-2003 “Employing Wireless LAN standards for communication between TOC vehicles - Phase 1 Extension,” *PI*: Athina Petropulu, *Co-Is*: Kapil R. Dandekar, Army CECOM (Applied Communications and Information Networking Program), \$68,000, (2003-2004).
4. RG-2003 “ACIN Phase III: Communication for Subterranean and Urban Environments,” *PI*: Kapil R. Dandekar, *Co-Is*: Afshin Daryoush, Athina Petropulu, Army CECOM (Applied Communications and Information Networking Program), \$600,000, (2003-2004).
5. RG-2003 “Ad-Hoc Link Capability over Link-16,” *PI*: Kapil R. Dandekar, *Co-Is*: None, Sarnoff Corporation, \$10,000, (2003-2003).
6. RG-2003 “Collaborative Research - Applied Electromagnetic Characterization of Wideband Multi-Array Communication,” *PI*: Kapil R. Dandekar, *Co-Is*: Robert W. Heath, Jr. (University of Texas at Austin), National Science Foundation, \$273,000, (2003-2007).
7. RG-2003 “Practical Strategies using Smart Antennas for Ad-Hoc Networking,” *PI*: Kapil R. Dandekar, *Co-Is*: Harish Sethu, National Science Foundation, \$520,000, (2003-2007).
8. RG-2003 “MIMO Ad Hoc Battlefield Networks in Dense Urban Environments,” *PI*: Kapil R. Dandekar, *Co-Is*: Robert W. Heath, Jr. and Scott Nettles (University of Texas at Austin), National Instruments, \$18,000, (2003-2004).
9. EG-2003 “Equipment for MIMO Ad Hoc Battlefield Networks in Dense Urban Environments,” *PI*: Kapil R. Dandekar, *Co-Is*: Robert W. Heath, Jr. and Scott Nettles (University of Texas at Austin), National Instruments, \$250,000, (2003-2004).
10. EG-2003 “Hardware for MIMO Transceiver,” *PI*: Kapil R. Dandekar, *Co-Is*: Robert W. Heath, Jr. and Scott Nettles (University of Texas at Austin), Texas Instruments, \$60,000, (2003-2004).
11. RG-2004 “ACIN Phase IV: Modeling and Simulation,” *PI*: Harish Sethu, *Co-Is*: Kapil R. Dandekar, David Breen, Moshe Kam, Spiros Mancoridis, and Steven Weber, Army CECOM (Applied Communications and Information Networking Program), \$212,000, (2004-2005).
12. RG-2004 “Exploiting Flexible PHYs in Networks: Prototypes and Algorithms,” *PI*: Kapil R. Dandekar, *Co-Is*: Scott Nettles, Robert W. Heath, Jr., Jeff Andrews, Gustavo de Veciana, and Sanjay Shakkotai (University of Texas at Austin), National Science Foundation, \$100,000, (2004-2007).
13. EG-2004 “MIMO Multi-Hop Network Integrated Research and Education Plan using NI Products,” *PI*: Kapil R. Dandekar, *Co-Is*: Robert W. Heath, Jr. and Scott Nettles (University of Texas at Austin), National Instruments, \$180,000, (2004-2005).
14. RG-2005 “ACIN Phase V: Modeling and Simulation in Support of COMPOSER,” *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar, David Breen, Timothy Kurzweg, Frank Lee, Spiros Mancoridis, and Steven Weber, Army CECOM (Applied Communications and Information Networking Program), \$1,195,000, (2005-2006).

15. RG-2005 “ACIN Phase V: Modeling and Simulation in Support of Communications,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, Moshe Kam, Jay Modi, and Bill Regli, Army CECOM (Applied Communications and Information Networking Program), \$300,000, (2005-2006).
16. RG-2005 “ACIN Phase V: RFID-based Integrated Authentication, Localization, and Sense Through the Wall System,” *PI*: Gary Friedman, *Co-Is*: Kapil R. Dandekar and Adam Fontecchio, Army CECOM (Applied Communications and Information Networking Program), \$500,000, (2005-2006).
17. RG-2005 “Thru-Hull Communication for Naval Communications,” *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar, Office of Naval Research, \$95,000, (2005-2007).
18. RG-2005 “MIMO Diffuse Optical Local Area Networks,” *PI*: Kapil R. Dandekar, *Co-Is*: Timothy Kurzweg, National Science Foundation, \$270,000, (2005-2008).
19. EG-2005 “Hardware for Research and Education in Software Defined Radio,” *PI*: Kapil R. Dandekar, *Co-Is*: None, Analog Devices, \$5,000, (2005-2006).
20. EG-2006 “Drexel University Anechoic Chamber Testing (DUACT) System,” *PI*: Kapil R. Dandekar, *Co-Is*: Mun Choi and Moshe Kam, National Security Agency, \$70,000, (2006-2007).
21. RG-2007 “ACIN Phase VI: Modeling and Simulation in Support of COMPOSER,” *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar, Timothy Kurzweg, Spiros Mancoridis, and Steven Weber, Army CECOM (Applied Communications and Information Networking Program), \$541,000, (2006-2007).
22. RG-2007 “ACIN Phase VI: Modeling and Simulation in Support of Communications: MIMO,” *PI*: Kapil R. Dandekar, *Co-Is*: Moshe Kam and Steven Weber, Army CECOM (Applied Communications and Information Networking Program), \$200,000, (2006-2007).
23. RG-2007 “ACIN Phase VI: Ultrawideband Localization: Bridge Funding to Phase VII,” *PI*: Adam Fontecchio, *Co-Is*: Kapil R. Dandekar and Gary Friedman, Army CECOM (Applied Communications and Information Networking Program), \$50,000, (2006-2007).
24. RG-2007 “ACIN Phase VI: Modeling and Simulation in Support of Communications,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar and Moshe Kam, Army CECOM (Applied Communications and Information Networking Program), \$320,000, (2006-2007).
25. RG-2008 “ACIN Phase VII: Modeling and Simulation in Support of CJSMP/COMPOSER,” *PI*: Kapil R. Dandekar, *Co-Is*: David Breen, Moshe Kam, Timothy Kurzweg, and Spiros Mancoridis, Army CECOM (Applied Communications and Information Networking Program), \$500,000, (2007-2008).
26. RG-2008 “ACIN Phase VII: Modeling and Simulation in Support of Communications,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, and Moshe Kam, Army CECOM (Applied Communications and Information Networking Program), \$625,000, (2007-2008).
27. RG-2008 “ACIN Phase VII: WiMAX,” *PI*: William Regli, *Co-Is*: Kapil R. Dandekar, Army CECOM (Applied Communications and Information Networking Program), \$200,000, (2007-2008).
28. EG-2008 “Wireless Antenna Measurement and Prototyping System,” *PI*: Kapil R. Dandekar, *Co-Is*: Mun Choi and Moshe Kam, National Security Agency, \$43,000, (2007-2008).

29. RG-2009 “ACIN Phase VIII: MIMO for Tactical Radio,” *PI*: Kapil R. Dandekar, *Co-Is*: , Army CECOM (Applied Communications and Information Networking Program), \$107,000, (2008-2009).
30. RG-2009 “ACIN Phase VIII: Conductive Polymer Antennas,” *PI*: Adam Fontecchio, *Co-Is*: Kapil R. Dandekar, Tim Kurzweg, Army CECOM (Applied Communications and Information Networking Program), \$300,000, (2008-2009).
31. RG-2009 “ACIN Phase VIII: CREW,” *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar and John Walsh, Army CECOM (Applied Communications and Information Networking Program), \$500,000, (2008-2009).
32. RG-2009 “ACIN Phase VIII: Modeling and Simulation in Support of CJSMP/COMPOSER,” *PI*: Kapil R. Dandekar, *Co-Is*: David Breen, Moshe Kam, Timothy Kurzweg, and Spiros Mancoridis, Army CECOM (Applied Communications and Information Networking Program), \$300,000, (2008-2009).
33. RG-2009 “ACIN Phase VIII: Modeling and Simulation in Support of Communications,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, and Moshe Kam, Army CECOM (Applied Communications and Information Networking Program), \$200,000, (2008-2009).
34. RG-2009 “ACIN Phase VIII: Cognitive Networking,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, and Moshe Kam, Army CECOM (Applied Communications and Information Networking Program), \$200,000, (2008-2009).
35. RG-2009 “ACIN Phase VIII: WiMAX,” *PI*: William Regli, *Co-Is*: Kapil R. Dandekar and Youngmoo Kim, Army CECOM (Applied Communications and Information Networking Program), \$700,000, (2008-2009).
36. RG-2010 “ACIN Phase 9: MIMO for Tactical Radio,” *PI*: Kapil R. Dandekar, *Co-Is*: None, Army CERDEC (Applied Communications and Information Networking Program), \$200,000, (2009-2010).
37. RG-2010 “ACIN Phase 9: CREW,” *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar, John Walsh, Army CERDEC (Applied Communications and Information Networking Program), \$400,000, (2009-2010).
38. RG-2010 “ACIN Phase 9: M&S for Communications,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, Army CERDEC (Applied Communications and Information Networking Program), \$200,000, (2009-2010).
39. RG-2010 “ACIN Phase 9: Cognitive Networking,” *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, Army CERDEC (Applied Communications and Information Networking Program), \$200,000, (2009-2010).
40. RG-2010 “MRI: Development of SDC Testbed for Radio and Optical Wireless Networking,” *PI*: Kapil R. Dandekar, *Co-Is*: Timothy Kurzweg, Adam Fontecchio, Youngmoo Kim, Jeremy Johnson, National Science Foundation, \$1,269,440, (2009-2013).
41. RG-2010 “II-NEW: MIMO Software Defined Communications Testbed for Radio and Optical Wireless Networking,” *PI*: Kapil R. Dandekar, *Co-Is*: Timothy Kurzweg, Adam Fontecchio, Youngmoo Kim, Nagarajan Kandasamy, National Science Foundation, \$707,517, (2009-2012).
42. RG-2010 “NETS: Small: Cognitive Antennas for Wireless Ad Hoc Networks,” *PI*: Kapil R. Dandekar, *Co-Is*: Moshe Kam, Jaudelice de Oliveira, National Science Foundation, \$582,637, (2009-2012).
43. RG-2010 “NETS: Medium: Collaborative Research: Cooperative beamforming for efficient and secure wireless communication,” *PI*: Athina Petropulu, *Co-Is*: Kapil R. Dandekar, National Science Foundation, \$399,942, (2009-2012).

44. RG-2010 "NTI: Printing RFID Antenna using Nanoparticle Inks," *PI*: Kapil R. Dandekar, *Co-Is*: Timothy Kurzweg, Adam Fontecchio, Benjamin Franklin Nanotechnology Institute, \$79,990, (2009-2010).
45. RG-2010 "A Platform for Analyzing the RF Environment on Naval Vessels," *PI*: Moshe Kam, *Co-Is*: Kapil R. Dandekar, DURIP, \$280,000, (2009-2010).
46. RG-2010 "Antenna Project Bridge Funding," *PI*: Kapil R. Dandekar, *Co-Is*: Adam Fontecchio, Timothy Kurzweg, Drexel University, \$100,000, (2009-2010).
47. RG-2010 "ACIN Phase 10: Cognitive Networking," *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, David Breen, Moshe Kam, Army CERDEC (Applied Communications and Information Networking Program), \$400,000, (2010-2011).
48. RG-2010 "A Framework for Wireless Network Security Based on Reconfigurable Antennas," *PI*: Kapil R. Dandekar, *Co-Is*: John Walsh, Rachel Greenstadt, NSF, \$369,928, (2010-2013).
49. RG-2010 "Cognitive Antenna System (CAS)," *PI*: Kapil R. Dandekar, *Co-Is*: None, Lockheed Martin, \$12,214, (2009-2010).
50. EG-2010 "Dandekar Equipment," *PI*: Kapil R. Dandekar, *Co-Is*: None, Drexel University, \$0, (2009-2010).
51. RG-2011 "Below-Decks Electromagnetic Environment Characterization for RF Wireless Network Operation," *PI*: Kam, *Co-Is*: Kapil R. Dandekar, Office of Naval Research, \$88,000, (2010-2011).
52. RG-2011 "ACIN Phase 11: Cognitive Networking," *PI*: Weber, *Co-Is*: Kapil R. Dandekar, Army CERDEC (Applied Communications and Information Networking Program), \$400,000, (2011-2012).
53. RG-2011 "A Meso-Scale GENI WiMAX Project," *PI*: Kapil R. Dandekar, *Co-Is*: Kam, National Science Foundation, \$105,472, (2011-2014).
54. RG-2011 "Reconfigurable Antenna-based Enhancement of Dynamic Spectrum Access Algorithms," *PI*: Kapil R. Dandekar, *Co-Is*: Weber, National Science Foundation, \$527,814, (2011-2014).
55. RG-2011 "Maternity "smart fabric bellyband" to monitor uterine activity," *PI*: Adam Fontecchio, *Co-Is*: Kapil R. Dandekar, Genevieve Dion, Timothy Kurzweg, Owen Montgomery, Coulter Foundation, \$120,000, (2011-2012).
56. RG-2011 "Freedom Rings," *PI*: Kapil R. Dandekar, *Co-Is*: Youngmoo Kim, Urban Affairs Coalition, \$4,255,080, (2011-2013).
57. RG-2011 "E-MIDDAS - Enhanced-Mobile Integrated Diagnostic and Data Analysis System," *PI*: Rich Primerano, *Co-Is*: Kapil R. Dandekar, Timothy Kurzweg, John Lacontora, L3, \$89,293, (2011-2012).
58. RG-2011 "Hybrid Wireless Network on chips," *PI*: Baris Taskin, *Co-Is*: Kapil R. Dandekar, National Science Foundation, \$471,726, (2011-2015).
59. RG-2011 "Securing the Wireless Philadelphia Network," *PI*: Steven Weber, *Co-Is*: Kapil R. Dandekar, Spiros Mancoridis, Harish Sethu, National Science Foundation, \$1,080,445, (2011-2016).
60. RG-2011 "Development and Dissemination of the Drexel University Cybersecurity Program," *PI*: Kapil R. Dandekar, *Co-Is*: Steven Weber, Rachel Greenstadt, Chris Yang, Constantine Katsinis, National Science Foundation, \$888,491, (2011-2015).
61. RG-2012 "Real-Time Feature Detection and Threat Analysis with USRP SDR," *PI*: Kapil R. Dandekar, *Co-Is*: None, Lockheed Martin, \$100,000, (2012-2013).

62. RG-2012 “Performance Estimation and Optimization of REDHAWK SDR Applications,” *PI*: Hempstead, *Co-Is*: Kapil R. Dandekar, Kam, Johnson, Ventura Solutions, Inc, \$215,461, (2012-2013).
63. RG-2012 “Below-Decks Electromagnetic Environment Characterization for RF Wireless Network Operation, Phase III,” *PI*: Kam, *Co-Is*: Kapil R. Dandekar, Primerano, ONR, \$226,985, (2012-2014).
64. RG-2013 “EAGER: US Ignite: A Cloud Enabled Virtual Reality Based Pedagogical Ecosystem for Green Energy and Environmental Engineering Education,” *PI*: Abichandani, *Co-Is*: Kapil R. Dandekar, Foster, NSF, \$329,505, (2013-2016).
65. RG-2013 “The Finder,” *PI*: Kapil R. Dandekar, *Co-Is*: Primerano, Kurzweg, Fontecchio, Westpal Finder Inc., \$150,000, (2013-2014).
66. RG-2013 “Ultrasonic Programming of Artillery Fuses, Phase I,” *PI*: Primerano, *Co-Is*: Kapil R. Dandekar, Kam, Picatinny Arsenal, \$73,174, (2013-2015).
67. RG-2013 “GAANN: Graduate Fellowships in Education with a Focus on the National Academy of Engineering Grand Challenges,” *PI*: Fontecchio, *Co-Is*: Kapil R. Dandekar et al., Department of Education, \$134,172, (2013-2015).
68. RG-2013 “NACME Scholar Program 2013-2014,” *PI*: Kapil R. Dandekar, *Co-Is*: Rodriguez, National Action Council for Minorities in Engineering, \$2,500, (2013-2014).
69. RG-2013 “Phase 3: Maternity ”smart fabric bellyband” to monitor uterine activity and assess fetal well being,” *PI*: Fontecchio, *Co-Is*: Kapil R. Dandekar, Dion, Kurzweg, Mongan, Montgomery, Coulter, \$131,118, (2013-2014).
70. RG-2013 “Performance Estimation and Optimization of REDHAWK SDR Applications: Task 2,” *PI*: Hempstead, *Co-Is*: Kapil R. Dandekar, Johnson, Ventura Solutions, Inc, \$111,901, (2013-2014).
71. RG-2014 “Knit Smart Textiles for Biomedical Sensing and Actuation,” *PI*: Kapil R. Dandekar, *Co-Is*: G. Dion, A. Fontecchio, O. Montgomery, V. Narayan, National Science Foundation, \$799,577, (2014-2017).
72. RG-2014 “Enhanced Interference Alignment for Networks using Reconfigurable Antennas,” *PI*: Kapil R. Dandekar, *Co-Is*: Kandasamy, National Science Foundation, \$489,417, (2014-2017).
73. RG-2014 “Ultrasonic Programming of Artillery Fuses, Phase II,” *PI*: Primerano, *Co-Is*: Kapil R. Dandekar, Kam, Picatinny Arsenal, \$188,180, (2014-2015).
74. RG-2015 “WiFiUS: Future Small-Cell Networks using Reconfigurable Antennas,” *PI*: Kapil R. Dandekar, *Co-Is*: Weber, National Science Foundation, \$199,997, (2015-2017).
75. RG-2015 “NRT IGE: Pedagogical Readiness Oversight for Future Educators in STEM Subjects (PROFESS),” *PI*: Fontecchio, *Co-Is*: Stanford, Marendra, Silverman, Kapil R. Dandekar, NSF, \$498,848, (2015-2018).
76. RG-2015 “Secure Wireless Control for Future Naval Smart Grids,” *PI*: Kapil R. Dandekar, *Co-Is*: C. Nwankpa, K. Miu, J. de Oliveira, and S. Weber, ONR, \$749,830, (2015-2018).
77. RG-2015 “CPS: TTP Option: Synergy: Sensing, Processing, and Actuation of Biomedical Smart Textiles for Deep Venous Thrombosis Prevention,” *PI*: Kapil R. Dandekar, *Co-Is*: Montgomery, Dion, Abichandani, Fontecchio, NIH, \$1,488,873, (2015-2018).
78. RG-2015 “PFI: BIC (REU): Wearable Smart Textiles Based on Programmable and Automated Knitting Technology for Biomedical and Sensor Actuation Applications,” *PI*: Kapil R. Dandekar, *Co-Is*: None, NSF, \$14,000, (2015-2018).

79. RG-2015 “Secure Wireless Control for Future Naval Smart Grids,” *PI*: Kapil R. Dandekar, *Co-Is*: Nwankpa, Miu, DeOliveria, Weber, Office of Naval Research, \$852,031, (2015-2018).
80. RG-2015 “Science Learning+ Supporting Identity Change Through Immersive Interactive Technologies ,” *PI*: Rank, *Co-Is*: Kapil R. Dandekar, Muschio, Foster, Allen, NSF, \$1,725,540, (2017-2019).
81. RG-2016 “SaTC: EDU: Software Defined Radio Wars for Cybersecurity and Information Assurance Education,” *PI*: Kapil R. Dandekar, *Co-Is*: Kandasamy, Abichandani, Stanford, Rank, NSF, \$299,890, (2016-2018).
82. RG-2016 “II-NEW: Scalable Software Defined Radio Network Testbed for Hybrid Measurement and Emulation,” *PI*: Kapil R. Dandekar, *Co-Is*: Weber, Taskin, Mainland, NSF, \$850,000, (2016-2019).
83. RG-2016 “EAGER: SC2: Team Dragon Radio,” *PI*: Kapil R. Dandekar, *Co-Is*: Mongan, Weber, Kandasamy, Mainland, NSF, \$99,978, (2016-2017).
84. RG-2016 “PFI: BIC (Travel Supplement) Wearable Smart Textiles Based on Programmable and Automated Knitting Technology for Biomedical and Sensor Actuation Applications,” *PI*: Kapil R. Dandekar, *Co-Is*: None, NSF, \$4,523, (2016-2017).
85. RG-2016 “Cybersecurity Workforce Education CNAP Initiatives,” *PI*: Weber, *Co-Is*: Kapil R. Dandekar, Savidis, Stamm, NSA, \$255,360, (2016-2017).
86. RG-2016 “Development of Aerial Dragnet Testbed,” *PI*: Kapil R. Dandekar, *Co-Is*: Fontecchio, Kurzweg, Abichandani, Kontsos, DARPA/LMCO, \$1,420,553, (2016-2017).
87. RG-2016 “Analytics on Real-Time Biometrics from Passive Wearable Smart-Garments,” *PI*: Mongan, *Co-Is*: Kapil R. Dandekar, Fontecchio, CURE, \$89,952, (2016-2017).
88. RG-2017 “Development of Aerial Dragnet Testbed (Phase 2),” *PI*: **Kapil R. Dandekar**, *Co-Is*: Fontecchio, Kim, Kontsos, Weber, Shokoufandeh, DARPA/LMCO-ATL, \$475,000, (2017-2018).
89. RG-2017 “MRI: Development of a mmWave Software Defined Radio Network Testbed for Hybrid Measurement and Emulation,” *PI*: **Kapil R. Dandekar**, *Co-Is*: Kandasamy, Mainland, Weber, NSF, \$714,285, (2017-2021).
90. RG-2017 “CRI Supplement: DARPA Spectrum Collaboration Challenge,” *PI*: **Kapil R. Dandekar**, *Co-Is*: Kandasamy, Mainland, Weber, NSF, \$99,999, (2017-2019).
91. RG-2017 “GAANN: Cybersecurity,” *PI*: Fontecchio, *Co-Is*: **Kapil R. Dandekar**, Greenstadt, Mancoridis, Johnson, Weber, Stanford, Department of Education, \$746,250, (2017-2019).
92. RG-2017 “Cyber P3 Scholarship Program,” *PI*: Weber, *Co-Is*: **Kapil R. Dandekar** , NSA, \$882,148, (2017-2018).
93. RG-2017 “NeTS: Small: Functional Fabric Devices and Architectures for the Internet of Things,” *PI*: **Kapil R. Dandekar**, *Co-Is*: Dion, Mongan, Weber, NSF, \$499,648, (2017-2020).
94. RG-2018 “DARE: Internet of Things for Future Smart City and Campus,” *PI*: Kapil R. Dandekar, *Co-Is*: Anday, Bhandari, Das, Dion, Fontecchio, Kim, Kontsos, Mongan, Montalto, Montgomery, Orne, Sheller, Shokoufandeh, Steinberg, Suri, Weber, Drexel University, \$250,000, (2018-2019).
95. RG-2018 “R01: SCH: Int: Smart and Connected Health for Newborn Ventilation,” *PI*: Kapil R. Dandekar, *Co-Is*: Anday, Bhandari, Joyce, Mongan, Dion, Das, NIH, \$1,197,030, (2018-2022).
96. RG-2019 “CNS Core: Small: Wireless Interconnect Networks on Multi-Die Systems,” *PI*: Taskin, *Co-Is*: **Kapil R. Dandekar**, NSF, \$465,000, (2020-2023).

Teaching Activities

Summary of Courses Taught:

The following lists the courses taught in Fall (F), Winter (W), and Spring (S) terms of each of the five years since the beginning of the academic year 2001-2002. Graduate courses and undergraduate courses are denoted as G and UG respectively. Course evaluation data is provided using the mean of the “overall instructor rating” for the respective course.

	Term	Level	Number	Title	Students	Avg. Eval.
	F 2001-02	UG	ECE-S306	Introduction to Modulation and Coding	31	5.0/5.0
	W 2001-02	G	ECE-T612	Advanced Telecomm. Engineering II	25	4.6/5.0
	S 2001-02	UG	ECE-S306	Introduction to Modulation and Coding	21	5.0/5.0
	F 2002-03	UG	ECE-S306	Introduction to Modulation and Coding	15	5.0/5.0
	W 2002-03	G	ECE-T612	Advanced Telecomm. Engineering II	20	4.6/5.0
	S 2002-03	UG	ECE-S306	Introduction to Modulation and Coding	25	4.8/5.0
	F 2003-04	UG	ECE-S306	Introduction to Modulation and Coding	15	3.8/5.0
	W 2003-04	G	ECE-T612	Advanced Telecomm. Engineering II	20	4.0/5.0
	S 2003-04	UG	ECE-S306	Introduction to Modulation and Coding	15	4.8/5.0
	F 2004-05	UG	ECE-S306	Introduction to Modulation and Coding	9	3.5/5.0
	W 2004-05	G	ECE-T512	Wireless Systems	22	4.5/5.0
	S 2004-05	UG	ECE-S306	Introduction to Modulation and Coding	12	5.0/5.0
	F 2005-06	UG	ECE-S306	Introduction to Modulation and Coding	15	4.5/5.0
	W 2005-06	G	ECE-T512	Wireless Systems	20	4.6/5.0
	F 2006-07	UG	ECE-S306	Introduction to Modulation and Coding	16	4.3/5.0
	W 2006-07	G	ECE-T512	Wireless Systems	21	4.7/5.0
	S 2006-07	UG	ECE-S306	Introduction to Modulation and Coding	18	4.0/5.0
	F 2007-08	UG	ECE-S306	Introduction to Modulation and Coding	16	N/A
	W 2007-08	G	ECE-T512	Wireless Systems	13	N/A
	S 2007-08	UG	ECE-S306	Introduction to Modulation and Coding	11	N/A
	F 2008-09	UG	ECE-S306	Introduction to Modulation and Coding	11	N/A
	W 2008-09	G	ECE-T512	Wireless Systems	14	4.6/5.0
	S 2008-09	UG	ECE-S306	Introduction to Modulation and Coding	5	4.8/5.0
	F 2009-10	UG	ECE-S306	Introduction to Modulation and Coding	17	4.4/5.0
	W 2009-10	G	ECE-T512	Wireless Systems	10	4.8/5.0
	S 2009-10	UG	ECE-S306	Introduction to Modulation and Coding	12	4.9/5.0
	F 2010-11	UG	ECE-S306	Introduction to Modulation and Coding	3	N/A
	W 2010-11	G	ECE-T512	Wireless Systems	19	N/A
	S 2010-11	UG	ECE-S306	Introduction to Modulation and Coding	5	N/A

F	2011-12	UG	ECE-S306	Analog and Digital Communications	8	
W	2011-12	G	ECE-T512	Wireless Systems	30	4.0/5.0
S	2011-12	UG	ECE-S306	Analog and Digital Communications	7	4.5/5.0
F	2012-13	UG	ECE-S306	Analog and Digital Communications	13	4.6/5.0
W	2012-13	G	ECE-T512	Wireless Systems	16	4.1/5.0
S	2012-13	UG	ECE-S306	Analog and Digital Communications	7	4.0/5.0
F	2013-14	UG	ECE-S306	Analog and Digital Communications	17	5.0/5.0
W	2013-14	G	ECE-T512	Wireless Systems	17	4.8/5.0
S	2013-14	UG	ECE-S306	Analog and Digital Communications	14	4.5/5.0
S	2013-14	G	ECE-T890	ST:Software Defined Radio Security Lab	9	3.2/5.0
F	2014-15	UG	ECE-S306	Analog and Digital Communications	15	5.0/5.0
W	2014-15	G	ECE-T512	Wireless Systems	11	4.6/5.0
S	2014-15	UG	ECE-S306	Analog and Digital Communications	14	5.0/5.0
F	2015-16	UG	ECE-S306	Analog and Digital Communications	21	4.5/5.0
W	2015-16	G	ECE-T512	Wireless Systems	15	4.4/5.0
S	2015-16	UG	ECE-S306	Analog and Digital Communications	12	5.0/5.0
S	2015-16	G	ECE-T680	ST: Cognitive Radio	8	4.3/5.0
F	2016-17	UG	ECE-S306	Analog and Digital Communications	16	N/A
W	2016-17	G	ECE-T512	Wireless Systems	9	4.6/5.0
S	2016-17	G	ECE-T680	Collaborative Intelligent Radios	13	N/A
F	2017-18	G	ECE-T512	Wireless Systems	7	N/A
W	2017-18	UG	ECE-T480(cs)	Wireless Network Security (w/ C. Sahin)	10	N/A
W	2017-18	G	ECE-T680(cs)	Wireless Network Security (w/ C. Sahin)	12	3.5/5.0
F	2018-19	UG	ENGR-370	VIP:Wireless Systems for IoT	6	N/A
W	2018-19	UG	ENGR-370	VIP:Wireless Systems for IoT	11	N/A
S	2018-19	UG	ENGR-370	VIP:Wireless Systems for IoT	9	N/A
S	2018-19	G	ECE-T512	Wireless Systems	9	N/A
Su	2018-19	UG	ENGR-370	VIP:Wireless Systems for IoT	4	N/A
Su	2018-19	UG/G	ECE-Tx80	Software Defined Radio Lab (w/ G. Mainland)	15	N/A
F	2019-20	UG	ENGR-370	VIP:Wireless Systems for IoT	6	N/A
W	2019-20	UG	ENGR-370	VIP:Wireless Systems for IoT	9	N/A
W	2019-20	G	ECET-512	Wireless Systems	11	N/A
S	2019-20	UG	ENGR-370	VIP:Wireless Systems for IoT	4	N/A
S	2019-20	UG/G	ECET-x80	Software Defined Radio Lab (w/ G. Mainland)	12	N/A

Su 2019-20 UG ENGR-370 VIP:Wireless Systems for IoT 9 N/A

Senior Design Projects Supervised:

Year	Project Title	Co-Advisor
2002-03	Modulation and Coding Laboratory Component Design	
2002-03	MIMO RF Transceiver Development	Daryoush
2002-03	Ad-Hoc Network Simulation and Visualization in Urban Environments	
2003-04	Instrumentation for Measuring Reaction Time in Close Quarter Combat Training <i>Sponsor: Naval Research Laboratory</i>	
2004-05	Rapid Detection Localization of Threats in an Urban Environment	Kam
2004-05	Urban Threat Response Simulation	Kam
2004-05	Transceiver Design and Evaluation for Wireless Optical LAN	Kurzweg
2004-05	Inkjet Printing of a Polymer Antenna	Fontecchio
2005-06	Hybrid Ultrasonic/Wireless Networks for Naval Applications <i>Sponsor: Office of Naval Research</i>	Kam
2005-06	SDR Testbed for Rapid Prototyping of MIMO Systems <i>Sponsor: National Science Foundation</i>	Kurzweg
2006-07	Ultra-Wideband Software Defined Radio Prototyping of Multiple Input Multiple Output Systems	Fontecchio
2007-08	EPICS:Simulation and Quantification of Particulate Matter Emissions in Philadelphia <i>Sponsor: Philadelphia Clean Air Council</i>	Kam
2007-08	EPICS:Information Kiosk for Philadelphia Non-Profit Organizations <i>Sponsor: Philadelphia Legal Assistance</i>	Fontecchio
2007-08	MIMO Based Micro-Optical Interconnects <i>Sponsor: National Science Foundation</i>	Kurzweg
2007-08	Localization of Ingested Radio Smart Pill	Kurzweg
2008-09	EPICS:Air Quality Sensor Network for Philadelphia <i>Sponsor: Philadelphia Clean Air Council and IEEE</i>	Kurzweg
2008-09	WiMAX Software Defined Radio Implementation <i>Sponsor: National Science Foundation</i>	
2009-10	Software Framework for a Cognitive Radio Testbed with Reconfigurable Antennas <i>Sponsor: National Science Foundation</i>	
2009-10	EPICS:Air Quality Sensor Network for Philadelphia <i>Sponsor: Philadelphia Clean Air Council and IEEE</i>	Kurzweg
2010-11	EPICS:Air Quality Sensor Network for Philadelphia <i>Sponsor: Philadelphia Clean Air Council and IEEE</i>	
2011-12	EPICS:Air Quality Hardware <i>Sponsor: Philadelphia Clean Air Council and IEEE</i>	Primerano
2011-12	EPICS:Air Quality Software <i>Sponsor: Philadelphia Clean Air Council and IEEE</i>	Primerano

2011-12	Wireless Philadelphia Network Re-design - Infrastructure	Primerano
2011-12	Wireless Philadelphia Network Re-design - Applications	Primerano
2013-14	Real Time Reactive Jamming in Wireless Networks <i>Sponsor: National Science Foundation</i>	
2014-15	Wireless Power Transfer for Smart Textile Applications <i>Sponsor: National Science Foundation</i>	
2014-15	Smart Onesie for Sudden Infant Death Syndrome (SIDS) detection <i>Sponsor: National Science Foundation</i>	
2015-16	Wireless Security Testbed Demonstration <i>Sponsor: National Science Foundation</i>	
2015-16	Software Infrastructure for Secure and Scalable Medical Sensor Networks <i>Sponsor: National Science Foundation</i>	
2016-17	Dragon Radio for DySPAN and DARPA SC2 <i>Sponsor: National Science Foundation</i>	
2016-17	Wearable Device For Data Collection to Monitor DVT Risk <i>Sponsor: NIH</i>	Mongan,Dion
2016-17	High-performance Computing Platform for Real-time Radio Spectrum Analysis <i>Sponsor: National Science Foundation</i>	Kandasamy
2017-18	Wearable Device for Detection and Treatment of Deep Vein Thrombosis <i>Sponsor: NIH</i>	Mongan,Dion
2017-18	Radio Wars: Competition Based Education for Wireless Network Security Using Software Defined Radios <i>Sponsor: National Science Foundation</i>	Mainland
2017-18	Dragon Radio (ECE) <i>Sponsor: National Science Foundation/DARPA</i>	Mainland
2017-18	Dragon Radio (CS) <i>Sponsor: National Science Foundation/DARPA</i>	Mainland
2018-19	Impinj xArray Gateway RFID Reader <i>Sponsor: National Science Foundation</i>	Mongan
2019-20	Software Defined Radio for Anti-Jamming <i>Sponsor: National Science Foundation</i>	Mainland
2019-20	Radio ARENA <i>Sponsor: National Science Foundation</i>	Mainland
2019-20	The VarIoT Hub <i>Sponsor: DARE</i>	
2019-20	CharIoT <i>Sponsor: DARE</i>	

Professional Service Activities

Professional Society Membership:

Date	Activity
1. 1995-Pres.	Institute of Electrical and Electronics Engineers (IEEE) Antennas and Propagation society member Communications society member Vehicular Technology society member
2007-2010	IEEE Educational Activities Board
2013-2015	
2007-Pres	IEEE Senior member

Professional Society Officer/Chair:

Date	Position	Description
1. 2002-2010	Chair	IEEE Philadelphia section Vehicular Technology Society
2. 2007-2014	Chair	IEEE Philadelphia section Com/IT Society
3. 2007-2010	Member (Chair)	IEEE Educational Activities Board (Pre-University Education Coordinating Committee)
4. 2008-2015	Leader	EPICS in IEEE Initiative
5. 2013-2015	Chair	IEEE Educational Activities Board (University Resources Committee Chair)

Conference Sessions Chaired/Organized:

Date	Conference Activity
1. 2004	IEEE Radio and Wireless Conference Technical program committee member MIMO Technologies session chair
2. 2006	IEEE Radio and Wireless Symposium Technical program committee member
3. 2007	IEEE Radio and Wireless Symposium Technical program committee member MIMO Technologies subcommittee chair
4. 2007	IEEE Vehicular Technology Conference Technical program committee member
5. 2008	IEEE Radio and Wireless Symposium Technical program committee member
6. 2008	IEEE Vehicular Technology Conference Technical program committee member
7. 2009	IEEE Vehicular Technology Conference Technical program committee member
8. 2011	IEEE International Workshop on Wireless Network Measurements (WinMEE) Technical program committee member
9. 2011	IEEE International Workshop on Wireless Network Measurements (WinMEE)

10. 2012 Technical program committee member
Crowncom 2012
11. 2012 Technical program committee member
IEEE International Workshop on Wireless Network Measurements (WinMEE)
12. 2013 Technical program committee member
Crowncom 2013
13. 2014 Technical program committee member
Crowncom 2014
14. 2015 Technical program committee member
VTC 2015
WiFiUS special session workshop co-organizer

Workshops Organized:

- | | Date | Workshop |
|----|-------------|--|
| 1. | 2003 | MIMO Technologies Workshop
IEEE Radio and Wireless Conference |
| 2. | 2012 | EPICS in IEEE
Virtual Conference |

Journal Editorships:

- | | Date | Journal |
|----|-------------|---|
| 1. | 2002-2007. | IEEE Transactions on Vehicular Technology
Associate Editor |
| 2. | 2007-2011 | IEEE eLearning (formerly ExpertNow)
Editorial Board Member |

Professional Service Highlights

IEEE Educational Activities Board, 2007-2015

- Responsibilities:
 - Pre-University Education Coordinating Committee Member and Chair (2009-2010)
 - Organized lesson plan review for Teacher in Service Program (TISP) and TryEngineering.org
 - University Resources Committee Member and Chair (2014-2015) overseeing committees focused on engineering and engineering technology accreditation, development of training materials for early career faculty, academic resources for undergraduate students, and development of new pedagogical techniques.
 - Founding editorial board member of IEEE ExpertNow (formerly IEEE eLearning) (2007-2011)
 - IEEE Humanitarian Ad-Hoc Committee (2014) - IEEE Board level committee created to determine the strategic role of IEEE in humanitarian areas including both existing programs (SIGHT, E4C, EPICS in IEEE) and new initiatives.
 - Co-Founder of the EPICS-in-IEEE program (2009-2015)
 - Created program to leverage global reach of IEEE to enable engineering service learning projects with local non-profit humanitarian organizations and pre-university student mentoring
 - Launched over 60 projects in 18 countries around the world. Projects have been active in Regions (Sections) including: Region 1 (New Hampshire), Region 2 (Baltimore, Philadelphia, Princeton/Central Jersey), Region 8 (Benelux, Kenya, Nigeria, Portugal, South Africa, Tunisia, Uganda, Zambia, Zimbabwe), Region 9 (Argentina, Mexico, Puerto Rico and Caribbean, Uruguay), and Region 10 (Bangalore, Beijing, Delhi, Kerala, Hyderabad, Karachi, Kerala, Malaysia, Xi'an).
 - Organization of virtual conference to engage program volunteers globally
 - Elevation to IEEE Foundation Signature Program (2014) for renewed focus on external fundraising
 - Awards and Recognition Committee Member (2014-2015)
- Notable accomplishments:
 - Pre-university lesson plans on TryEngineering.org remains in use and available for use by educators
 - IEEE Expert Now continues with materials now available in IEEE Xplore digital archive
 - Successful transition of EPICS-in-IEEE to new leadership which has sustained the program
 - IEEE Educational Activities Board Meritorious Service Award (2012) for EPICS-in-IEEE

University Service Highlights

Associate Dean for Enrollment Management and Graduate Education, Drexel College of Engineering, 2020-

- Responsibilities:
 - College liaison to Graduate College
 - College liaison to Drexel Enrollment Management and Student Success
 - Member of Drexel Graduate Associate Deans Committee (and academic subcommittee)
 - Member of Drexel College and School Recruitment Committee
 - Chair of COE Graduate Committee
 - Responsibility for all College open houses and recruitment events
 - Development of educational partnership agreements
 - Supervisor for Senior Director for Graduate Affairs and Recruitment
 - Supervisor for Director for Undergraduate Recruitment and Engagement
- Notable accomplishments:
 - Initiated partnership with Study Portals for graduate recruitment
 - Initiated contract with seven (7) international recruitment agencies for commission based graduate recruitment
 - Managed difficult institutional accelerated degree policy issues
 - Transition of all College recruitment activities to online during COVID-19
 - Graduate Emergency Preparedness committee member during COVID-19
 - College post-COVID 19 re-entry committee

Associate Dean for Research and Graduate Studies, Drexel College of Engineering, 2011-2019

- Responsibilities:
 - Member of Drexel Associate Deans for Research Committee
 - Member of Drexel Graduate Associate Deans Committee
 - Member of Drexel University Research Strategic Plan Implementation group
 - Administration for all COE submitted proposals, overhead share, and cost-sharing
 - COE-wide business development and strategic planning
 - Administer COE-wide research projects and fellowship programs
 - Research coordination with COE department heads
 - Liaison to Government Relations office
 - Liaison to Office of Technology Commercialization
 - Liaison to Institutional Advancement
 - US News and World Report reporting
 - Co-chair of COE Graduate Committee
 - Supervisor for Director of Research Development
 - Supervisor for Graduate and Research Program Manager
 - Supervisor for Database Manager
- Notable accomplishments:
 - Co-chair of University Advisory Committee on Graduate Education that led to creation of Graduate College
 - Re-formation of College Graduate Committee
 - Re-formation of College Research Committee
 - Creation of multi-college facilitated networking events and seed grant program
 - Junior faculty mentoring in proposal development
 - Design and implementation of RCM-based graduate tuition model
 - Creation of centralized college support and internal proposal review processes for select proposal opportunities (e.g., MRI, GAANN)
 - Supported launch of new laboratory safety training system
 - Supported launch of new Cybersecurity Institute and efforts in Peace Engineering
 - Expansion and re-branding of Graduate Co-operative Education program as Drexel CoE MS program market differentiator
 - Creation of College-wide PhD open house recruitment day
 - Launch of new, multi-college MS degree program in Cybersecurity
 - Participated in creation of interdisciplinary graduate degree programs in Robotics and Peace Engineering
 - Launch of Drexel Vertically Integrated Projects (VIP) program for undergraduate research
 - US News and World Report data and strategic analysis

Assistant Department Head for Graduate Affairs, Drexel ECE, 2008-2011

- Responsibilities:
 - Chair of ECE Graduate Committee
 - Liaison to University Office of Graduate Studies
 - Representative on COE Graduate Committee
 - Liaison to Office of Graduate Admissions
 - Liaison to Graduate Fellowship Office
 - Liaison to University Registrar for course scheduling, room, and instructor assignment
 - Co-managed faculty and teaching assistant assignments
 - EPAF approval for all ECE graduate students
 - Managed grade submission for all research, thesis, dissertation, and graduate co-op students
 - Organized course offering planning activities in Department
 - Teaching assistant assignment
 - Handled academic probation and dismissals for graduate students
 - Responsible for graduate student graduation clearance
 - Liason to graduate co-op office
 - Oversaw graduate student recruitment
 - Adjunct faculty point of contact for Department
 - Managed graduate course change and proposal paperwork with Academic Senate
 - Day to day graduate student advising with Chad Morris
- Notable accomplishments:
 - Two year course offering plan
 - Substantially revamped graduate and undergraduate course offerings to be more directly linked to student population size
 - Conducted cohort based graduation analysis to track graduate student retention and graduation rates (report created by Academic Information Systems to my specification is now available university wide)
 - New PhD candidacy exam format
 - Created and managed updates to Department research website
 - Improved mechanism for graduate student recruitment (website for application review)
 - Dual degree program with Politecnico di Milano
 - Academic affiliates program with Rowan University