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EDUCATION

Ph.D., Electrical Engineering, 1994, Duke University, Durham, North Carolina.
Thesis: *Waveguides and Cavities with Dielectric Slab-Loading that Support Uniform TEM Modes.*
M.S., Electrical Engineering, 1990, Duke University, Durham, North Carolina.
Thesis: *Microwave Bandpass Filters Using Series Cascaded Sections of Microstrip Line.*
B.S., Electrical Engineering, 1988, Cornell University, Ithaca, New York.

PROFESSIONAL EXPERIENCE

Associate Dean for Research College of Engineering University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2012 – Present
Professor Department of Electrical and Computer Engineering University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2008 – Present
Research Professor Coordinated Science Laboratory University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2008 – Present
Affiliated Faculty Member Information Trust Institute University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2005 – Present
Research Professor Micro and Nanotechnology Laboratory University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2008 – August 2010
Associate Professor Department of Electrical and Computer Engineering University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2003 – August 2008
Research Associate Professor Micro and Nanotechnology Laboratory University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2003 – August 2008
Research Associate Professor Coordinated Science Laboratory University of Illinois at Urbana-Champaign, Urbana, Illinois	August 2004 – August 2008
Assistant Professor Department of Electrical and Computer Engineering University of Illinois at Urbana-Champaign, Urbana, Illinois	August 1999 – August 2003
Research Assistant Professor Micro and Nanotechnology Laboratory University of Illinois at Urbana-Champaign, Urbana, Illinois	December 2000 – August 2003
Adjunct Assistant Professor Department of Electrical and Computer Engineering University of New Hampshire, Durham, New Hampshire	August 1999 – August 2003
Visiting Assistant Professor	August 1998 - August 1999

Department of Electrical and Computer Engineering University of Illinois at Urbana-Champaign, Urbana, Illinois Class of 1944 Assistant Professor	August 1995-August 1999
Department of Electrical and Computer Engineering University of New Hampshire, Durham, New Hampshire Private Consultant on Wireless Communication Systems	August 1997 - Present
Post-doctoral Research Associate Departments of Radiation Oncology and Electrical Engineering Duke University, Durham, North Carolina	August 1994 - July 1995
Consultant, Wireless Technology Associates Durham, North Carolina	August 1993 - July 1994
National Science Foundation Graduate Fellow Department of Electrical Engineering Duke University, Durham, North Carolina	1990 - 1993
Research Engineer, Avnet Development Labs Durham, North Carolina	May 1989 - August 1989

PROFESSIONAL AND HONORARY ORGANIZATIONS

IEEE Fellow
International Union of Radio Science (U.S. Commission B)
International Union of Radio Science (U.S. Commission C)
International Union of Radio Science (U.S. Commission D)
Sigma Xi
Tau Beta Pi
Eta Kappa Nu
ASEE (American Society for Engineering Education)
AAAS (American Association for the Advancement of Science)

BEST PAPER AWARDS

2004 H. A. Wheeler Applications Prize Paper Award, from the IEEE Antennas and Propagation Society, for the paper "Analysis and design of broad-band single-layer rectangular U-slot microstrip patch antennas," S. Weigand, G. Huff, K. Pan, and J. T. Bernhard, *IEEE Transactions on Antennas and Propagation*, vol. 51, no. 3, pp. 457-468, March 2003. The H. A. Wheeler Award recognizes the paper considered to be the best applications paper in the *IEEE Transactions on Antennas and Propagation* for the past year.

Best Paper of the Year, NASA Communications Technology Division, 2000. For R. R. Romanofsky, J. T. Bernhard, F. W. Van Keuls, F.A. Miranda, G. Washington, and C. Canedy, "K-band phased array antennas based on $Ba_{0.60}Sr_{0.40}TiO_3$ thin-film phase shifters," *IEEE Transactions on Microwave Theory and Techniques*, vol. 48, no. 12, December 2000, pp. 2504-2510.

RESEARCH AWARDS AND FELLOWSHIPS

IEEE Fellow
China-America Frontiers of Engineering Symposium Participant, sponsored by the National Academy of Engineering, 2011.
U. S. Defense Science Study Group Member, Sponsored by DARPA, 2008-2009.
U.S. Frontiers of Engineering Symposium Participant, sponsored by the National Academy of Engineering, 2007.
Xerox Award for Faculty Research, UIUC College of Engineering, 2006.

Willett Faculty Scholar, UIUC College of Engineering, 2005-2009.
Willett Faculty Scholar, UIUC College of Engineering, 2002-2005.
NASA-ASEE Summer Faculty Fellowship, NASA Glenn Research Center, 2000.
NSF CAREER Award, 2000.
NASA-ASEE Summer Faculty Fellowship, NASA Glenn Research Center, 1999.
Summer Faculty Fellowship, University of New Hampshire, 1996.
Class of 1944 Professorship, University of New Hampshire, 1995 - 1998.
NSF Graduate Fellowship, Duke University, 1990 - 1993.

RESEARCH GRANTS

Raytheon Corporation (PI), 2014-2015. Title: "Finite Array Modeling Study."
United States Army Research Office (PI), 2012-2016. Title: "Antenna Applications Symposium."
United States Department of the Army, U.S. Army Construction Engineering Research Laboratory (PI), 2012-2014. Title: "Investigation of Carbon Nanotube Structures for use in Passive Remote Electromagnetic Sensors."
United States Army Research Office (PI), 2010-2015. With Prof. D. Jones (Co-PI). Title: High-Resolution DoA Determination with Electrically Small Antenna Arrays."
U.S. Government, (PI), 2010-2012. Title: "Surface Wave Propagation Investigation."
Intelligence Community Postdoctoral Research Fellow Program (PI), 2010-2014. Title: "Study and Development of Wideband Electrically Small Antennas Leveraging Novel Fabrication Techniques."
NSF AST Grant (PI), 2010. Workshop Grant. With Profs. J. Reed and J. Park (Co-PIs), Department of Electrical and Computer Engineering, Virginia Tech. Title: "Collaborative Research: Enhancing Access to the Radio Spectrum (EARS) Workshop."
Centre for Strategic Infocomm Technologies (PI), 2010-2012. Title: "Investigations into Electrically Small Frequency Reconfigurable Antennas and Arrays."
Sandia National Laboratory, (PI), 2009-2011. Title: "Small Dual-Band Placement Insensitive Tag Antennas."
United States Army Research Office STIR Grant (Co-PI), 2007-2008. With Prof. D. Jones (PI). Title: "Feasibility Study of DOA Determination with Small Antennas and the FMW Algorithm."
Motorola Research Grant (PI), 2006-2009. Title: "Investigations into Approaches for Antenna Tunability and Compatibility."
Samsung Research Grant (PI), 2006-2007. Title: "Investigations in Approaches for Antenna Pattern Reconfigurability in Wireless Portable Devices."
United States Army Research Office Grant (PI), 2006-2009. With Prof. J. Papapolymerou (Co-PI), Department of Electrical and Computer Engineering, Georgia Institute of Technology. Title: "Collaborative Research: Enabling Technology for MIMO Systems on Mobile Military Platforms: Antennas, Switches, and Packaging."
NSF OISE Grant (PI), 2006, International Workshop Grant. Title: "U.S.-Japan Bio-Inspired Sensing Workshop; Yokohama, Japan; December 6-8, 2006."
NSF CMS Grant (PI), 2006-2009. With Prof. S. Hagness (Co-PI), Department of Electrical and Computer Engineering, University of Wisconsin and Prof. K. Hill (Co-PI), Department of Civil Engineering, University of Minnesota. Title: "Collaborative Research: Development of a Three Dimensional Sensing System for Applications in Materials, Environmental, and Civil Infrastructure Research."
Ball Aerospace Corporation, Unrestricted Research Grant (PI), 2006. Title: "Advanced Multifunction Antennas."
Anvik Corporation, through NASA Phase I SBIR Program, 2006. Title: "Highly Integrated, Reconfigurable, Large-Area, Flexible Radar Antenna Arrays."
Intel Corporation, 2005-2008, Unrestricted Research Grant. Title: "Investigations Into Approaches For Antenna Tunability and Miniaturization."

UIUC Critical Research Initiative Grant (Co-PI), 2005-2008. With Prof. N. Vaidya (PI). Title: "Next Generation RFID Systems: People and Object Tracking for Homeland Security Applications."

NSF BES Grant (Co-PI), 2005-2008. With Prof. M. Rood (PI), Dept. of Civil and Environmental Engineering, UIUC. Title: "Microwave-Swing Adsorption to Capture Hazardous Air Pollutants and Volatile Organic Compounds from Gas Streams."

NSF ECS Grant (PI), 2005-2008. With Prof. J. Papapolymerou (Co-PI), Department of Electrical and Computer Engineering, Georgia Institute of Technology. Title: "Collaborative Research: Enabling Technology for MIMO Systems on Mobile Devices: Antennas, Switches, and Packaging."

Anvik Corporation, through NASA Phase I SBIR Program, 2005. Title: "Highly Integrated, Reconfigurable, Large-Area, Flexible Radar Antenna Arrays."

NSF CISE Research Resources Grant (Co-PI), 2004-2007. Title: "Wireless Wind Tunnel: A Testbed for Experimental Evaluation of Wireless Networks."

United States Navy through UIUC NCASSR Grant (PI), 2004-2005. Title: "Antennas for Wireless Sensing Applications."

United States Air Force Research Laboratory Grant (PI), 2004-2005. Title: "Wideband Conformal Antennas and Arrays."

Phonak Communications Grant (PI), 2003-2004. Title: "Electromagnetic Study of Integrated Hearing Aid Antennas."

United States Army Research Office Grant (PI), 2003-2005. Title: "Supplemental Funding for 'Low-Profile Radiators in Aperiodic Wideband Arrays' for Undergraduate Research Experiences."

NSF CAREER Research Experience for Undergraduates Supplement (PI), 2003 - 2004.

United States Army Research Office Grant (PI), 2003-2004. Title: "Instrumentation in Support of 'Low-Profile Radiators in Non-Periodic Wideband Arrays.'"

NASA NRA Grant (PI), 2003-2006. Title: "Miniaturized Antennas in Random Sensor Arrays for Planetary Surface and Atmosphere Exploration."

NSF Supplement NSF Supplement to NSF CMS-02-01305 (sponsored by the Federal Highway Administration), (PI), 2003-2005. Title: "Electromagnetic Feasibility Study of Cyberliths."

UIUC Grainger Fund, (Co-PI), 2003-2005. Title: "RF MEMS Switches for Reconfigurable Circuits and Antennas."

United States Army Research Office Grant (PI), 2002-2005. Title: "Low-Profile Radiators in Aperiodic Wideband Arrays."

Phonak Communications Grant (PI), 2002-2003. Title: "Electromagnetic Study of Integrated Hearing Aid Antennas and Wireless Programming."

NSF CAREER Industry Matching Supplement (PI), 2002 - 2003.

NSF Grant (PI), 2002-2005. Title: "A Wireless Embedded Sensor System to Monitor and Assess Corrosion in the Tendons of Prestressed Concrete Girders."

Phonak Communications Grant (PI), 2001 - 2002. Title: "Electromagnetic Feasibility Study Of Integrated Hearing Aid Antennas."

NSF CAREER Industry Matching Supplement (PI), 2001 - 2002.

NASA NRA Grant (PI), 2001 - 2004. Title: "Reconfigurable Antennas for High Data Rate Multi-beam Communication Systems."

NSF CAREER Industry Matching Supplement (PI), 2000 - 2001.

NSF CAREER Grant (PI), 2000 - 2004. Title: "Intelligent Portable Antenna Systems for High-Speed Wireless Communication."

Amphenol T&M Antennas, Inc. Research Grant (PI), 2000 - 2002. Title: "Internal Antenna Systems for Portable Wireless Communication."

NASA Cooperative Research Grant (PI), 2000 - 2001. Title: "Microstrip Antennas with Broadband Integrated Phase Shifting."

University of Illinois Research Board Grant (PI), 1999 - 2001. Title: "Novel Active Antenna Elements for High Performance Phased Reflectarrays."

DARPA Reconfigurable Aperture Grant (Co-PI), 1999 - 2002. Title: "Mechanically Conformal and Electronically Reconfigurable Apertures Using Low Voltage MEMS and Flexible Membrane for Space Based Radar Applications."

NSF POWRE Grant (PI), 1997 - 1999. Title: "Team-based Research on Integrated Antenna Diversity."

NSF Academic Research Infrastructure (Equipment) Grant (Co-PI), 1996 - 1999. Title: "Laboratory for Advanced Communication Systems."

NSF Research Planning Grant (PI), 1996 - 1998. Title: "Local Electromagnetic Field Characterization."

Vice President's Discretionary Fund Award, University of New Hampshire, 1996 - 1997.

EDUCATION AWARDS AND FELLOWSHIPS

2014 Honorary Knight of St. Patrick, College of Engineering, University of Illinois.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2014.

Engineering Council Award for Excellence in Advising, Illinois College of Engineering, 2013.

Engineering Council Award for Excellence in Advising, Illinois College of Engineering, 2012.

Stanley H Pierce Faculty Award, Engineering Council, Illinois College of Engineering, 2012.

Ronald W. Pratt Faculty Outstanding Teaching Award, ECE Department, UIUC, 2011.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2011 [top 10% rating].

List of Teachers Ranked as Excellent by Their Students, ECE 454: Antennas, UIUC, Fall 2009.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2009.

List of Teachers Ranked as Excellent by Their Students, ECE 577: Antenna Theory, UIUC, Spring 2009.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2005.

Accenture Engineering Council Award for Excellence in Advising, UIUC College of Engineering, 2004.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2002.

Anderson Consulting Award for Excellence in Advising, UIUC College of Engineering, 2000.

List of Teachers Ranked as Excellent by Their Students, ECE 457: Microwave Circuit Design, UIUC, Spring 2000.

Collins Scholar, Teaching College (UIUC) Academy for Excellence in Engineering Education, 1999-2000.

UNH College of Engineering and Physical Sciences Teacher of the Year, 1997-1998.

Tau Beta Pi (UNH Chapter) Outstanding Teacher Award, ECE Department, 1997-1998.

Sloan New Faculty Fellow, Frontiers in Education Conference, 1997.

Tau Beta Pi (UNH Chapter) Outstanding Teacher Award, ECE Department, 1996-1997.

EDUCATION GRANTS

Grant from Ford Motor Company Foundation, Laboratory Expansion and Upgrade for ECE 437: Sensors and Instrumentation, 2006.

IEEE-Central Illinois Section Outreach Grant, 2005. Title: "Demonstration and Hands-on Experiments in Electricity and Magnetism for Young Students."

Gift from Northrop Grumman Corporation in support of Senior Design Projects in Applied Electromagnetics, 2006.

Gift from Northrop Grumman Corporation in support of Senior Design Projects in Applied Electromagnetics, 2005.

Gift from the Rockwell Collins Foundation in support of Senior Design Projects in Applied Electromagnetics, 2004-2005.

Grant for New Course Development from Kimberly-Clark, Inc. 2000-2003. Used to develop ECE 437: Sensors and Instrumentation.

PATENT DISCLOSURES, APPLICATIONS, AND PATENTS

Disclosure: "Method for Designing Multi-mode Dielectric Resonator Antennas for Applications in Multiple-Input Multiple-Output Communication Systems." Y.-B. Yan and J. T. Bernhard, 2009.

Disclosure: "Terahertz Wire Waveguide with Reduced Bending Loss." K. C. Kerby and J. T. Bernhard, 2007.

Disclosure: "Dual-band Two-Slot Planar Inverted F Antenna (PIFA) for Simultaneous Operation in the 2.4 GHz and 5 GHz Unlicensed Bands." B. Herting and J. T. Bernhard, 2002.

Disclosure: "Method for Improving the Radiation Characteristics of Microstrip Antennas with Finite Ground Planes." J. T. Bernhard and G. H. Huff, 2001.

Disclosure: "Monolithic Electric or Magnetic Field Detectors at High Frequencies." W. D. Palmer and J. T. Bernhard, 1995.

Patent: "Placement Insensitive Antenna for RFID, Sensing, and/or Communication Systems," J. T. Bernhard and J. Ruyle, US Patent Number 8,746,577, June 10, 2014.

Patent: "Antenna for Controlling Radiation Direction," C.Jung, Y. Kim, J. T. Bernhard, and J. Ruyle, US Patent Number 7,768,455, August 3, 2010.

Patent: "Increasing Isolation Between Multiple Antennas with a Grounded Meander Line Structure," G. Alvey and J. T. Bernhard, US Patent Number 7,701,395, April 20, 2010.

Patent: "Technology and Methodology for a System for Tracking Submerged or Buried Passive Sensors." G. H. Huff, J. T. Bernhard, D. Laefer, and S. Hagness, US Patent Number 7,482,969, January 27, 2009.

Patent: "Reconfigurable, Microstrip Antenna Apparatus, Devices, Systems, and Methods," S. Zhang, J. T. Bernhard, G. Huff, and G. Cung. US Patent Number 7,330,152, February 12, 2008.

BOOKS

W. T. Joines, W. D. Palmer, and J. T. Bernhard, *Microwave Transmission Line Circuits*. Artech House: Boston. 2013.

J. T. Bernhard, *Reconfigurable Antennas*. Morgan & Claypool (in the Antennas and Propagation Series), Constantine Balanis, Editor. 2007.

BOOK CHAPTERS

"Reconfigurable Microstrip Antennas" in *Microstrip and Printed Antennas: New Trends, Techniques, and Applications*, D. Guha and Y. M. M. Antar, Editors, John Wiley & Sons. 2010.

"Reconfigurable Antennas," with G. H. Huff, in *Modern Antenna Handbook*, C. Balanis, Editor, John Wiley & Sons. 2008.

"Reconfigurable Antennas," in *Antenna Engineering Handbook*, 4th Edition, J. Volakis, Editor, McGraw Hill. 2007.

"Printed Antennas in Packages," in *Printed Antennas for Wireless Systems*, R. Waterhouse, Editor, John Wiley & Sons. 2007.

"Reconfigurable Antennas," in *The Wiley Encyclopedia of RF and Microwave Engineering*, K. Chang, Editor, John Wiley & Sons, February 2005.

"Antenna Parameters, Various Generic Antennas and Feed Systems, and Available Software," with Eric Michielssen, in *Handbook on Antennas in Wireless Communications*, L. Godara, Editor, CRC Press LLC, 2001.

JOURNAL PUBLICATIONS

1. K. R. Schab and J. T. Bernhard, "Radiation and energy storage current modes on conducting structures," In review at *IEEE Transactions on Antennas and Propagation*.
2. J. J. Adams, S. C. Slimmer, J. A. Lewis, and J. T. Bernhard, "3D-printed spherical dipole antenna integrated on a small RF node," Accepted for publication in *Electronics Letters*.
3. M. W. Young and J. T. Bernhard, "A miniaturized frequency reconfigurable antenna with single bias, dual varactor tuning," *IEEE Transactions on Antennas and Propagation*, vol. 63, no. 3, pp. 946-951, March 2015.
4. N. Bohannon and J. T. Bernhard, "Design guidelines using characteristic mode theory for improving the bandwidth of PIFAs," *IEEE Transactions on Antennas and Propagation*, vol. 63, no. 2, pp. 459-465, February 2015.
5. J. E. Ruyle and J. T. Bernhard, "Wideband transmission line model for Archimedian spiral slot structures," *IET Microwaves, Antennas & Propagation*, vol. 8, no. 14, pp. 1211-1217, 2014.
6. J.-B. Yan, S. Yong, and J. T. Bernhard, "Intermodulation and harmonic distortion in frequency reconfigurable slot antenna pairs," (Special Issue) *IEEE Transactions on Antennas and Propagation*, vol. 62, no. 3, pp. 1138-1146, March 2014.
7. J. Adams and J. T. Bernhard, "Broadband equivalent circuit models for antenna impedances and fields using characteristic modes," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 8, pp. 3985-3994, August 2013.
8. J.-B. Yan and J. T. Bernhard, "Implementation of a frequency-agile MIMO dielectric resonator antenna," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 7, pp. 3434-3441, July 2013.
9. M. J. Slater, C. D. Schmitz, M. D. Anderson, D. L. Jones, and J. T. Bernhard, "Demonstration of an electrically small antenna array for UHF direction-of-arrival estimation," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 3, pp. 1371-1377, March 2013.
10. S. Yong and J. T. Bernhard, "Reconfigurable null scanning antenna with three dimensional null steer," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 3, pp. 1063-1070, March 2013.
11. J. E. Ruyle and J. T. Bernhard, "A wideband transmission line model for a slot antenna," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 3, pp. 1407-1410, March 2013.
12. A. J. King, J. F. Patrick, N. R. Sottos, S. R. White, G. H. Huff, and J. T. Bernhard, "Microfluidically switched frequency-reconfigurable slot antennas," *IEEE Antennas and Wireless Propagation Letters*, vol. 12, pp. 828-831, 2013.
13. S. Yong and J. T. Bernhard, "A pattern reconfigurable null scanning antenna," *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 10, pp. 4538-4544, Oct. 2012.
14. J. H. Reed, J. T. Bernhard, and J.-M. Park, "Spectrum Access Technologies: The Past, the Present, and the Future," (Invited Paper) Special Centennial Celebration Issue of the *IEEE Proceedings*, pp. 1676-1684, 2012.
15. J.-B. Yan and J. T. Bernhard, "Design of a MIMO dielectric resonator antenna for LTE femtocell base stations," (Special Issue) *IEEE Transactions on Antennas and Propagation*, vol. 60, pp. 438-444, February 2012.
16. J. J. Adams, S. C. Slimmer, T. F. Malkowski, E. B. Duoss, J. A. Lewis, and J. T. Bernhard, "Comparison of spherical antennas fabricated via conformal printing: helix, meanderline, and hybrid designs," *IEEE Antennas and Wireless Propagation Letters*, vol. 10, pp. 1425-1428, 2011.
17. A. Russo, B.Y. Ahn, J.J. Adams, E.B. Duoss, J.T. Bernhard, and J.A. Lewis, "Pen-on-paper flexible electronics," *Advanced Materials*, vol. 23, no. 30, pp. 3426-3420, August 9, 2011.
18. J. J. Adams and J. T. Bernhard, "A modal approach to tuning and bandwidth enhancement of an electrically small antenna," *IEEE Transactions on Antennas and Propagation*, vol. 59, no. 4, pp. 1085-1092, April 2011.

19. J. J. Adams, E. B. Duoss, T. F. Malkowski, M. J. Motala, B. Y. Ahn, R. G. Nuzzo, J. T. Bernhard, and J. A. Lewis, "Conformal printing of electrically small antennas on three-dimensional surfaces," *Advanced Materials*, vol. 23, no. 11, pp. 1335-1340, March 2011.
20. J.-B. Yan and J. T. Bernhard, "Investigation of the influence of reflective insulation on indoor reception in rural houses," *IEEE Antennas and Wireless Propagation Letters*, vol. 10, pp. 423-426, 2011.
21. M. P. Daly and J. T. Bernhard, "Beamsteering in pattern reconfigurable arrays using directional modulation," *IEEE Transactions on Antennas and Propagation*, vol. 58, pp. 2259-2265, July 2010.
22. M. P. Daly, E. L. Daly, and J. T. Bernhard, "Demonstration of directional modulation using a phased array," *IEEE Transactions on Antennas and Propagation*, vol. 58, pp. 1545-1550, May 2010.
23. L. E. Linderman, J.A. Rice, S. Barot, B.F. Spencer Jr., and J.T. Bernhard, "Characterization of wireless smart sensor performance," *Journal of Engineering Mechanics*, 2010.
24. K. M. Hill, Y. Fan, J. Zhang, C. Van Niekerk, E. Zastrow, S. C. Hagness, and J. T. Bernhard, "Granular segregation studies for the development of a radar-based three-dimensional sensing system," *Granular Matter*, vol. 12, no. 2, pp. 201-207, 2010.
25. S. Yong and J. T. Bernhard, "Investigation into the relationship between microstrip patch width and efficiency," *IEEE Antennas and Wireless Propagation Letters*, vol. 8, pp. 1-4, 2009.
26. M. P. Daly and J. T. Bernhard, "Directional modulation technique for phased arrays," *IEEE Transactions on Antennas and Propagation*, vol. 57, no. 9, pp. 2633-2640, September 2009.
27. J. E. Ruyle and J. T. Bernhard, "Signal flow graph for a probe-fed microstrip patch antenna," *IEEE Antennas and Wireless Propagation Letters*, vol. 8, pp. 935-938, 2009.
28. J. J. Adams and J. T. Bernhard, "Tuning method for a new electrically small antenna with low Q," *IEEE Antennas and Wireless Propagation Letters*, vol. 8, pp. 303-306, 2009.
29. Z. Hashisho, M. J. Rood, S. Barot, and J. Bernhard, "Role of functional groups on the microwave attenuation and electric resistivity of activated carbon fiber cloth," *Carbon*, v. 47, pp.1814-1823, 2009.
30. T. L. Roach and J. T. Bernhard, "Exploration of amplitude tapering in linear phased arrays with pattern reconfigurable elements," *Electromagnetics*, vol. 29, no. 5, pp. 384-392, July 2009.
31. J. M. Martin, G. W. Swenson, Jr., and J. T. Bernhard, "Method for efficiency measurements of electrically small monopoles for animal tracking," *IEEE Antennas and Propagation Magazine*, vol. 51, no. 2, pp. 39-47, April 2009.
32. D. Schaubert, J. Bernhard, R. Mailloux and W. D. Palmer, "The state-of-the-art in antenna technology: a report from the 2008 Antenna Applications Symposium," *Microwave Journal* (cover feature article), pp. 24+, January 2009.
33. J. Boerman and J. T. Bernhard, "Performance study of pattern reconfigurable antennas in MIMO communication systems," *IEEE Transactions on Antennas and Propagation*, vol. 56, no. 1, pp. 231-236, Jan. 2008.
34. T. L. Roach, G. H. Huff, and J. T. Bernhard, "A comparative study of diversity gain and spatial coverage: fixed versus reconfigurable antennas for portable devices," *Microwave and Optical Technology Letters*, vol. 49, no. 3, pp. 535-539, March 2007.
35. J. A. Fladie and J. T. Bernhard, "On the radiation characteristics of right- and left-handed microstrip patch antenna designs," *IEEE Antennas and Wireless Propagation Letters*, vol. 5, pp. 563-565, 2006.
36. B.L. Ervin, J.T. Bernhard, D.A. Kuchma and H. Reis, "Estimation of general corrosion damage to steel reinforced mortar using frequency sweeps of guided mechanical waves," *INSIGHT - Journal of the British Institute for Non-Destructive Testing*, vol. 48, no. 11, pp. 682-692, Nov. 2006.
37. K. C. Kerby and J. T. Bernhard, "Sidelobe level and wideband behavior of arrays of random subarrays," *IEEE Transactions on Antennas and Propagation*, vol. 54, no. 8, pp. 2253-2262, Aug. 2006.
38. G. H. Huff and J. T. Bernhard, "Integration of packaged RF MEMS switches with radiation pattern reconfigurable square spiral microstrip antennas," (Special Issue) *IEEE Transactions on Antennas and Propagation*, vol. 54, no. 2, pp. 464-469, Feb. 2006.

39. K. Hietpas, B. Ervin, J. Banasiak, D. Pointer, D. Kuchma, H. Reis, and J. T. Bernhard, "Ultrasonics and electromagnetics for a wireless sensing system embedded in reinforced concrete girders," *Smart Structures and Systems*, vol. 1, no. 3, pp. 267-282, Sept. 2005.
40. H. Reis, B. L. Ervin, D. A. Kuchma, and J. T. Bernhard, "Estimation of corrosion damage in steel reinforced mortar using waveguides," *ASME Journal of Pressure Vessel Technology*, vol. 127, pp. 255-261, August 2005.
41. S. Zhang, G. Huff, G. Cung, and J. T. Bernhard, "Three variations of a pattern reconfigurable microstrip parasitic array," *Microwave and Optical Technology Letters*, vol. 45, pp. 369-372, June 2005.
42. G. H. Huff, J. Feng, S. Zhang, and J. T. Bernhard, "Directional reconfigurable antennas on laptop computers: simulation, measurement, and evaluation of candidate integration positions." *IEEE Transactions on Antennas and Propagation*, vol. 52, pp. 3220-3227, December 2004.
43. S. Zhang, G. H. Huff, J. Feng and J. T. Bernhard, "A pattern reconfigurable microstrip parasitic array," *IEEE Transactions on Antennas and Propagation*, vol. 52, pp. 2773-2776, October 2004.
44. G. Cung, G. H. Huff, and J. T. Bernhard, "Ground plane edge serrations for improved performance of microstrip active reflectarray elements." *IEEE Antennas and Wireless Propagation Letters*, vol. 2, pp. 334-336, 2003.
45. R. Clark, G. H. Huff, and J. T. Bernhard, "An integrated active microstrip reflectarray element with an internal amplifier," *IEEE Transactions on Antennas and Propagation*, vol. 51, no. 5, pp. 993-999, May 2003.
46. J. T. Bernhard, "Reply to Comments on 'Resonant frequencies of rectangular microstrip antennas with flush and spaced dielectric superstrates,'" *IEEE Transactions on Antennas and Propagation*, vol. 51, no. 4, p. 917, April 2003.
47. J.-C. Langer, J. Zou, C. Liu, and J. T. Bernhard, "Reconfigurable out-of-plane microstrip patch antenna using MEMS plastic deformation magnetic actuation," *IEEE Microwave and Wireless Components Letters*, vol. 13, no. 3, pp. 120-122, March 2003.
48. S. Weigand, G. H. Huff, K. Pan, and J. T. Bernhard, "Analysis and design of broadband single-layer rectangular U-slot microstrip patch antennas," *IEEE Transactions on Antennas and Propagation*, vol. 51, no. 3, pp. 457-468, March 2003.
49. G. Huff, J. Feng, S. Zhang, and J. T. Bernhard, "A novel radiation pattern and frequency reconfigurable single turn square microstrip spiral antenna," *IEEE Microwave and Wireless Components Letters*, vol. 13, no. 2, pp. 57-59, February 2003.
50. G. Huff and J. T. Bernhard, "Improvements in the performance of microstrip antennas on finite ground planes through ground plane edge serrations," *IEEE Microwave and Wireless Components Letters*, vol. 12, August 2002, pp. 308-310.
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115. N. H. Vaidya, J. Bernhard, V. Veeravalli, P. R. Kumar, R. Iyer, "Illinois Wireless Wind Tunnel: A Testbed for Experimental Evaluation of Wireless Networks," in *Proc. SIGCOMM 2005, E-Wind Workshop*, August 2005.
116. Z. Zhang and J. T. Bernhard, "An extremely broadband antenna for software defined radio," in *Proc. 2005 IEEE/URSI International Symposium on Antennas and Propagation*, July 2005.
117. G. H. Huff and J. T. Bernhard, "Modeling of ferroelectric thin films and materials for microwave devices and antennas," in *Proc. 2005 IEEE/URSI International Symposium on Antennas and Propagation*, July 2005.
118. J. Fladie and J. T. Bernhard, "Analysis of sectioned substrate patch antennas utilizing a deterministic approach," in *Proc. 2005 IEEE/URSI International Symposium on Antennas and Propagation*, July 2005.
119. N. Soldner, P. E. Mayes, and J. T. Bernhard, "Electrically-small inductively-loaded low-profile dual sector antennas in random arrays for surface exploration and mapping," in *Proc. 2005 IEEE/URSI International Symposium on Antennas and Propagation*, July 2005.
120. G. H. Huff and J. T. Bernhard, "Frequency reconfigurable CPW-fed hybrid folded slot/slot dipole antenna," in *Proc. 2005 IEEE/ACES International Conference on Wireless Communications and Applied Computational Electromagnetics*, 3-7 April 2005, pp. 574-577.
121. J. T. Bernhard, G. Cung, K. C. Kerby, and P. E. Mayes, "Development of Wideband Random Phased Arrays Composed of Modified Canted Sector Antennas," in *Proc. 2005 IEEE/ACES International Conference on Wireless Communications and Applied Computational Electromagnetics*, 3-7 April 2005, pp. 229-232.
122. J. T. Bernhard, G. Cung, K. C. Kerby, and P. E. Mayes, "Wideband Random Phased Arrays: Cost-effective Multifunction Performance," in *Proc. GOMACTech-2005*, Las Vegas, NV, March 2005.
123. G. H. Huff, M. Reeder, and J. T. Bernhard, "A frequency and radiation pattern reconfigurable CPW-fed dual-slot antenna for CPW RF MEMS," in *Proc. URSI 2005 National Radio Science Meeting*, January 2005, p.110.

124. T. L. Roach, G. H. Huff, and J. T. Bernhard, "A comparative study of diversity and spatial coverage: fixed vs. reconfigurable antennas for portable devices," in *Proc. URSI 2005 National Radio Science Meeting*, January 2005.
125. H. Reis, B. Ervin, D. A. Kuchma, and J. Bernhard, "Estimation of corrosion damage in steel reinforced concrete using wave guides," in *Proc. SPIE Smart Structures/NDE 2005*, vol. 5767, n. 1, 2005, pp. 105-114.
126. G. H. Huff and J. T. Bernhard, "Analysis of a radiation and frequency reconfigurable microstrip antenna," Finalist in student paper competition, in *Proc. 2004 Antenna Applications Symposium*, Sept. 2004, pp. 175-191.
127. K. C. Kerby and J. T. Bernhard, "Array of rotated random subarrays," in *Proc. 2004 Antenna Applications Symposium*, Sept. 2004, pp. 293-307.
128. K. Hietpas, B. Ervin, D. Kuchma, H. Reis, and J. T. Bernhard, "Wireless embedded rust monitoring system," in *Proc. 2004 Antenna Applications Symposium*, Sept. 2004, pp. 27-44.
129. (Invited Paper) G. H. Huff, K. Hietpas, and J. T. Bernhard "Reconfigurable microstrip antennas in phased arrays: performance and potential," in *Proc. 2004 Progress in Electromagnetics Research Symposium (PIERS) Symposium*, Nanjing, China, August 2004, p. 17.
130. K. Hietpas, G. H. Huff, and J. T. Bernhard, "Investigation of phased array beamsteering using reconfigurable antennas," in *Proc. IASTED Int. Conf. on Antennas, Radar, and Wave Propagation*, July 2004, pp. 41-44.
131. G. H. Huff and J. T. Bernhard, "Effects of mutual coupling in arrays of radiation reconfigurable antennas," in *Proc. IASTED Int. Conf. on Antennas, Radar, and Wave Propagation*, July 2004, pp. 92-96.
132. K. C. Kerby and J. T. Bernhard, "Wideband periodic array of random subarrays," in *Proc. 2004 IEEE/URSI Int. Symp. on Antennas and Propagation*, Monterey, CA, v. 1, June 2004, pp. 555-558.
133. S. Zhang and J. T. Bernhard, "A pattern reconfigurable microstrip antenna using solid state switches," in *Proc. 2004 IEEE/URSI Int. Symp. on Antennas and Propagation*, Monterey, CA, v. URSI, June 2004, p. 555-558.
134. G. H. Huff, T. L. Roach, and J. T. Bernhard, "A study of diversity performance of integrated combinations of fixed and reconfigurable antennas on portable devices," in *Proc. 2004 IEEE/URSI Int. Symp. on Antennas and Propagation*, Monterey, CA, v. URSI, June 2004, p. 137.
135. G. H. Huff, T. L. Roach, and J. T. Bernhard, "Conformal integration of broadside to endfire radiation reconfigurable antennas onto canonical structures," in *Proc. 2004 IEEE/URSI Int. Symp. on Antennas and Propagation*, Monterey, CA, v. URSI, June 2004, p. 138.
136. G. Cung, J. Fladie, P. E. Mayes, and J. T. Bernhard, "Investigation of canted compound sector antennas for wideband periodic arrays," in *Proc. 2004 IEEE/URSI Int. Symp. on Antennas and Propagation*, Monterey, CA, v. 2, June 2004, pp. 1887-1890.
137. G. Cung, J. Fladie, P. E. Mayes, and J. T. Bernhard, "Wideband low-profile canted antennas for broadside radiation in aperiodic arrays," in *Proc. GOMACTech-2004*, Monterey, CA, March 2004, p.167-170.
138. J. T. Bernhard, G. H. Huff, J. Feng, and S. Zhang, "Individually reconfigurable elements in arrays: operation from broadside to endfire," in *Proc. GOMACTech-2004*, Monterey, CA, March 2004.
139. J. T. Bernhard, "Linking electromagnetic design to system performance: measuring bit error rate as a function of antenna properties and more," in *Proc. URSI National Radio Science Meeting*, Jan. 2004, p. 78.
140. J. T. Bernhard, G. H. Huff, J. Feng, and S. Zhang, "Radiation pattern reconfigurable antennas and arrays: operation and switch integration," in *Proc. URSI National Radio Science Meeting*, Jan. 2004, p. 114.
141. J. T. Bernhard, "Antennas for multifunction RF systems: current work and future directions," Poster presentation, in *Proc. DARPA/ONR Workshop on Future Directions for Multifunction RF Systems*, November 2003.

142. J. T. Bernhard, G. H. Huff, J. Feng, S. Zhang, and G. Cung, "Reconfigurable portable antenna systems for high-speed wireless communication," in *Proc. 2003 IEEE Topical Conf. on Wireless Communication Technology*, October 2003, pp. 82-83.
143. J. T. Bernhard, K. Hietpas, E. George, D. Kuchma, and H. Reis, "An interdisciplinary effort to develop a wireless embedded sensor system to monitor and assess corrosion in the tendons of prestressed concrete girders," in *Proc. 2003 IEEE Topical Conf. on Wireless Communication Technology*, October 2003, pp. 241-243.
144. G. H. Huff, J. Feng, and J. T. Bernhard, "A modified pattern reconfigurable microstrip antenna for IC fabrication and integration with RF MEMS switches," in *Proc. 2003 IEEE Topical Conf. on Wireless Communication Technology*, October 2003, pp.378-379.
145. J. T. Bernhard, P. E. Mayes, D. Schaubert, and R. Mailloux, "A commemoration of Deschamps' and Sichak's 'Microstrip Microwave Antennas': 50 years of development, divergence, and new directions," in *Proc. 2003 Antenna Applications Symposium*, pp. 189-230, Sept. 2003.
146. G. H. Huff, J. Feng, and J. T. Bernhard, "A small array of boresight to endfire radiation reconfigurable antennas," in *Proc. 2003 Antenna Applications Symposium*, pp. 147-161, Sept. 2003.
147. J. T. Bernhard, B. Herting, J. Fladie, D. Chen, and P. E. Mayes, "Investigation of wideband low-profile canted antennas for broadside radiation in aperiodic arrays," in *Proc. 2003 Antenna Applications Symposium*, pp. 318-326, Sept. 2003.
148. D. A Strohschein, K. Sivaprasad, and J. T. Bernhard, "Investigation of the relationship between the characteristic electromagnetic modes of isolated near-resonant sized structures and systems of the structures." In *Proc. ITG Conference on Antennas*, Berlin, Germany, September 2003.
149. H. L. M. dos Reis, B. Ervin, D. A. Kuchma, and J. T. Bernhard, "Evaluation of corrosion damage in steel reinforced concrete," in *Proc. International Workshop on Structural Health Monitoring*, Stanford, CA, September 2003, pp. 139-146.
150. G. H. Huff, J. Feng, S. Zhang, J. T. Bernhard, "Behavior of pattern and/or frequency reconfigurable antennas in small arrays," in *Proc. 2003 IEEE/URSI Int. Symp. on Antennas and Propagation*, URSI, June 2003, p. 151.
151. (*Invited Paper*) J. T. Bernhard, E. C. George, K. Hietpas, P. Lee, A. Zoeteman, and J. Hill, "Embedding antennas into concrete for sensing applications: a packaging adventure," in *Proc. 2003 IEEE/URSI Int. Symp. on Antennas and Propagation*, URSI, June 2003, p. 299.
152. J. T. Bernhard, B. Herting, P. Mayes, N. Chen, and E. Michielssen, "Wideband low-profile canted antennas for array applications," in *Proc. 2003 IEEE/URSI Int. Symp. on Antennas and Propagation*, URSI, June 2003, p. 694.
153. J. T. Bernhard, B. Herting, N.-W. Chen, P. Mayes, and E. Michielssen, "Low Profile Radiators for Wideband Arrays," in *Proc. GOMACTech-2003*, Tampa, FL, April 2003.
154. Keynote Address: J. T. Bernhard, "Reconfigurable Antennas and Apertures: State-of-the-Art and Future Outlook," *Proc. SPIE Conf. on Smart Electronics, MEMS, BioMEMS, and Nanotechnology*, vol. 5055, March 2003, pp. 1-9.
155. B. Herting, A. Perrotta, and J. T. Bernhard, "Finite ground plane packaging effects on a dual-band PIFA," in *Proc. IEEE Topical Mtg. on Electrical Performance of Electronic Packaging*, pp. 95-98.
156. G. H. Huff, G. Cung, and J. T. Bernhard, "Investigation of polarization purity and port isolation in circularly polarized microstrip patch antennas with ground plane edge serrations," in *Proc. 2002 Antenna Applications Symposium*, Allerton Park, Monticello, IL, 2002, pp. 307-319.
157. J. Hazen and J. T. Bernhard, "Improved impedance bandwidth prediction of stacked reconfigurable bowtie antennas," in *Proc. 2002 Antenna Applications Symposium*, Allerton Park, Monticello, IL, 2002, pp. 353-362.
158. H. Chao, K. Pirapaharan, V. Bodrov, T. Cui, H. Hsu, G. Huff, X. Zhang, J. Zhao, J. T. Bernhard, and W. Chew, "Simulation of vehicle antennas by the multilevel fast multipole algorithm," in *Proc. 2002 Antenna Applications Symposium*, Allerton Park, Monticello, IL, 2002, pp. 140-147.

159. D. A. Kuchma, J. T. Bernhard, and H. L. M. dos Reis, "A wireless embedded sensor system to monitor and assess corrosion in tendons of prestressed concrete girders," in *Proc. of the U.S.-Korea Workshop on Smart Infra-Structural Systems*, August 2002, pp. 273-282.
160. (Invited Paper) G. Huff, S. Zhang, J. Feng, and J. T. Bernhard, "Performance and packaging issues of novel reconfigurable antennas in laptop computers," in *Proc. 2002 IEEE/URSI International Symposium on Antennas and Propagation*, vol. URSI, p. 178.
161. S. Zhang, G. Huff, J. Feng, and J. T. Bernhard, "Design model development for spiral microstrip antennas," in *Proc. 2002 IEEE/URSI International Symposium on Antennas and Propagation*, vol. URSI, p. 286.
162. M. Kim, D. Oh, I. Park, and J. T. Bernhard, "One-arm microstrip spiral antenna with a circular aperture on the ground plane," in *Proc. 2002 IEEE/URSI International Symposium on Antennas and Propagation*, vol. 3, pp. 830-833.
163. J. Hazen, R. Clark, P. Mayes, and J. T. Bernhard, "Stacked reconfigurable antennas for space-based radar applications," in *Proc. 2001 Antenna Applications Symposium*, Allerton Park, Monticello, Illinois, 2001, pp. 59-69.
164. S. Zhang, G. Huff, and J. T. Bernhard, "Antenna efficiency and gain of two new compact microstrip antennas," in *Proc. 2001 Antenna Applications Symposium*, Allerton Park, Monticello, Illinois, 2001, pp. 108-116.
165. J. Haley, T. Moore, and J. T. Bernhard, "Experimental investigation of antenna-handset-feed interaction during wireless product testing," in *Proc. 2001 Antenna Applications Symposium*, Allerton Park, Monticello, Illinois, 2001, pp. 117-134.
166. J. T. Bernhard, "Compact single-arm square spiral microstrip antenna with tuning arms," in *Proc. IEEE/URSI Antennas and Propagation Soc. International Symp.*, vol. 2, 2001, p. 696-699.
167. D. A. Stroschein, K. Sivaprasad, and J. T. Bernhard, "Application of characteristic modes to antenna placement on portable wireless devices," in *Proc. IEEE/URSI Antennas and Propagation Soc. International Symp.*, vol. URSI, 2001, p. 222.
168. K. H. Pan, T. Moore, and J. T. Bernhard, "Experimental investigation of microstrip antenna design beside lossy dielectric materials," in *Proc. IEEE/URSI Antennas and Propagation Soc. International Symp.*, vol. 4, 2001, p. 470-473.
169. J. T. Bernhard, R. Wang, R. Clark, and P. Mayes, "Stacked reconfigurable antenna elements for space based radar applications," in *Proc. IEEE/URSI Antennas and Propagation Soc. International Symp.*, vol. 1, 2001, p. 158-161.
170. (Invited paper) J. T. Bernhard, N. Chen, R. Clark, M. Feng, C. Liu, P. Mayes, E. Michielssen, R. Wang, and L. G. Chorosinski, "Electronically reconfigurable and mechanically conformal apertures using low-voltage MEMS and flexible membranes for space-based radar applications," *Proc. of SPIE on Smart Electronics and MEMS*, March 2001, pp. 129-136.
171. K. H. Pan, J. T. Bernhard, and T. Moore, "Effects of lossy dielectric materials on microstrip antennas," *Proc. IEEE AP-S Conference on Antennas and Propagation for Wireless Communications*, November 2000, pp. 39-42.
172. J. T. Bernhard, N.-W. Chen, R. Clark, P. Mayes, and E. Michielssen, "A canted sector antenna with broad impedance bandwidth for high performance arrays," *Proc. 2000 Antenna Applications Symposium*, Allerton Park, Monticello, Illinois, 2000, pp. 311-322.
173. J. T. Bernhard, N.-W. Chen, R. Clark, M. Feng, C. Liu, P. Mayes, E. Michielssen, and J. Mondal, "Mechanically conformal and electronically reconfigurable apertures using low voltage MEMS and flexible membranes for space based radar applications," *Proc. IEEE Antennas and Propagation Soc. International Symp.*, vol. URSI, 2000, p. 99.
174. R. Romanofsky, J. Bernhard, G. Washington, F. Van Keuls, F. Miranda, G. Washington, and C. Canedy, "A K-Band Linear Phased Array Antenna Based on $\text{Ba}_{0.60}\text{Sr}_{0.40}\text{TiO}_3$ Thin Film Phase Shifters," *IEEE Microwave Symp. Dig.*, vol. 3, 2000, pp.1351 -1354.

175. R. Clark, H. Pan, and J. T. Bernhard, "Microstrip antenna elements with internal amplifier slots for spatial power combining reflectarray applications," *Proc. IEEE Antennas and Propagation Soc. International Symp.*, vol. 3, 2000, pp. 1248-1251.
176. J. T. Bernhard and P. Irazoqui-Pastor, "Examining the performance benefits of antenna diversity systems in portable wireless environments," *Proc. 1999 Antenna Applications Symposium*, Allerton Park, Monticello, Illinois, 1999, pp. 30-40.
177. P. Irazoqui-Pastor, E. Swanson, C. Short, and J. T. Bernhard, "An analysis and design tool for evaluation of integrated antenna diversity systems in portable wireless devices," *Proc. IEEE AP-S International Symp.*, vol. 3, 1999, pp. 2062-2065.
178. J. T. Bernhard, "Undergraduate and graduate students in a research/design team: strategies for success," *Proc. IEEE/ASEE Frontiers in Education Conference*, vol. 3, November 1999, 13B9/1.
179. D. A. Stroschein and J. T. Bernhard, "Evaluation of a novel integrated antenna assembly for mobile data networks using laptop computers," *Proc. IEEE AP-S International Symp.*, 1998, pp. 1962-1965.
180. E. Kiely, G. Washington, and J. T. Bernhard, "Design, actuation, and control of active patch antennas," *Proc. SPIE Symp. on Smart Structures and Materials*, March 1998, pp. 147-155.
181. J. T. Bernhard, "Awakening the tinkerer within: re-introducing first year students to hardware for motivation," *Proc. IEEE/ASEE Frontiers in Education Conference*, vol. 2, November 1997, p. 706.
182. J. T. Bernhard, "Challenges and strategies for electrical engineering education," Sloan New Faculty Fellow Panel, *Proc. IEEE/ASEE Frontiers in Education Conference*, vol. 3, November 1997, pp. 1459-1462.
183. J. T. Bernhard, "Analysis of integrated antenna positions on portable equipment for mobile communications," *Proceedings of the Wireless and Portable Design Conference*, Burlington, MA, September 1997, pp. 1-4.
184. J. T. Bernhard, "Analysis of integrated antenna positions on a laptop computer for mobile data communication," *Proc. IEEE AP-S International Symp.*, 1997, pp. 2210-2213.
185. J. T. Bernhard, E. A. Jones, T. V. Samulski, S. T. Clegg, and W. T. Joines, "Design guide for the spiral microstrip antenna in hyperthermia applications," Presented at the 15th Annual Meeting of the North American Hyperthermia Society, April 1995.
186. E. A. Jones, J. T. Bernhard, T. V. Samulski, S. T. Clegg, and W. T. Joines, "FDTD simulation of current distributions and radiation patterns for spiral microstrip antenna applicators," Presented at the 15th Annual Meeting of the North American Hyperthermia Society, April 1995.

INVITED PRESENTATIONS AND SEMINARS

- Invited Presentation, "Engineering and Imagination – Helping Children Visualize the Invisible," 2014 Beginning Teacher STEM Conference, Champaign, IL, July 2014.
- Invited Presentation, "An Electrically Small Two-port Loop Antenna," R. Scott and J. T. Bernhard, CAPCON IX, May 2014.
- Invited Presentation, "A Design Approach for Planar Low Profile Frequency-Agile Antennas," M. W. Young and J. T. Bernhard, CAPCON IX, May 2014.
- Invited Presentation, "Identifying Source Placement and Excitation using Characteristic Mode Theory," N. Bohannon and J. T. Bernhard, CAPCON IX, May 2014.
- Invited Presentation, "Advanced Antennas for Cognitive Radio Systems," University of Waterloo, ON, Canada, November 2013.
- Invited Presentation, "Ground Plane Effects for Electrically Small Antennas," N. Bohannon and J. T. Bernhard, CAPCON VIII, June 2013.
- Invited Presentation, "Challenges for Frequency Reconfigurable Electrically Small Antennas," J. T. Bernhard, M. Young and S. Yong, CAPCON VIII, June 2013.
- Invited Presentation, "Multimode Small Antennas: Design and Relation to the Fundamental Limits," J. J. Adams and J. T. Bernhard, CAPCON VII, June 2012.

- Invited Presentation, "Placement-Insensitive RFID Antenna," J. E. Ruyle, and J. T. Bernhard, CAPCON VII, June 2012.
- Invited Presentation, "Conductive Cylindrical Surface Waveguides: Theory and Experiment," K. A. Erickson and J. T. Bernhard, CAPCON VII, June 2012.
- Invited Presentation, "Challenges and Opportunities for Antennas in Cognitive Radio," 6th European Conference on Antennas and Propagation (EuCAP 2012), March 2012.
- Invited Presentation: "Advanced Antennas: Enabling Fundamentally New Functionality in Cognitive and Software-Defined Radios and Devices," Laboratory for Physical Sciences, University of Maryland, September 2011.
- Invited Presentation: "Advances in Electrically Small Antennas: Theory, Design, and Fabrication," IDGA's 8th Military Antennas Summit, Washington, D.C., September 2011.
- Invited Presentation: "Advanced Antennas: Enabling Fundamentally New Functionality in Cognitive and Software-Defined Radios," Georgia Tech Research Institute and Atlanta Chapter of IEEE AP/MTT, August 2011.
- Invited Tutorial: "Advanced Antennas for Cognitive Radio: New Foundations for Transformational System Design," DySPAN 2011, Aachen, Germany, May 2011.
- Invited Presentation: "Advanced Antennas in Cognitive and Software-Defined Radios," AFRL Workshop on Cognitive & Software-Defined RF Technology: Achieving Spectral Dominance for the Air Force of the Future, Rome AFB, Rome, NY, September 2010.
- Invited Presentation: "Reconfigurable Antennas for Cognitive Radio," IDGA 6th Military Antennas Summit, Arlington, VA, September 2010.
- Invited Presentation: "Advances in Electrically Small Antennas: Design and Fabrication," CAPCON V, June 2010.
- Invited Presentation: "Multifunctional Reconfigurable Antennas: Current Capabilities and Future Directions," Institute for Infocomm Research, Singapore and the Singapore Chapters of IEEE MTT/AP and EMC, November 2009.
- Invited Presentation: "Electrically Small Antennas: Examples, Measurement Details, and Implications," Institute for Infocomm Research, Singapore and the Singapore Chapters of IEEE MTT/AP and EMC, November 2009.
- Invited Keynote Presentation: "Electrically Small Antennas: Examples, Measurement Details, and Implications," CAPCON IV, April 2009.
- Invited Seminar: "The Next Steps for Reconfigurable Antennas: Compound Reconfigurability and System Integration," Intel Research Forum and Seminar Series, Intel Corporation, Hillsboro, Oregon, March 2008.
- Plenary Talk: "Reconfigurable Multifunction Antennas: Next Steps for the Future," IEEE International Symposium on Microwave, Antenna, Propagation, and EMC Technologies for Wireless Communication, Hangzhou, China, August 2007.
- Invited Presentation: "MEMS-Based Reconfigurable Antennas: State of the Art and Future Directions," Workshop on Reconfigurable and Smart Antennas, 2007 International Microwave Symposium, Honolulu, HI, June 2007.
- Invited Seminars: (1) "Reconfigurable Antennas and Packaging Strategies for Multi-Radio Platforms," (2) "Grand Challenges in Antennas: Enabling the Future of Wireless Communication and Sensing," Antenna Group Seminar and Departmental Graduate Seminar, Department of Electrical and Computer Engineering, University of Massachusetts, Amherst, April 2007.
- Invited Seminar: "Grand Challenges in Antennas: Enabling the Future of Wireless Communication and Sensing," Departmental Seminar, Department of Electrical and Computer Engineering, Duke University, March 2007.
- Invited Presentation: "Reconfigurable Antennas and Packaging Strategies for Multi-Radio Platforms," Workshop on Integrated RF Solutions in Multi-Radio Platforms, Intel Corporation, Hillsboro, Oregon, March 2007.

Invited Presentation: "Reconfigurable Antennas: State of the Art and Future Directions," UCLA Electrical Engineering Workshop on Emerging Antenna Research for Wireless Communications, Department of Electrical Engineering, University of California, Los Angeles, February 2007.

Invited Presentation: "Enabling Technology for MIMO Systems on Mobile Military Platforms: Antennas, Switches, and Packaging," Capabilities Briefing/Kickoff Meeting, Army Research Laboratory, February 2007.

Invited Featured Speaker for the 2005-2006 Intel Lockheed Martin Undergraduate Research Scholars Program Poster Session, UIUC College of Engineering, April 2006.

Invited Presentation: "Antenna and Wireless Research in the Electromagnetics Laboratory at the University of Illinois," ATACT Workshop, Tysons Corner, VA, February 2006.

Invited Seminar: "Multifunction Antennas and Antennas for Sensor Applications," University of Colorado, Department of Electrical and Computer Engineering, April 2005.

Invited Seminar: "Multifunction Antennas and Antennas for Sensor Applications," University of Wisconsin, Department of Electrical and Computer Engineering, March 2005.

Invited Seminar: "Multifunction Antennas and Antennas for Sensor Applications," Cornell University, School of Electrical and Computer Engineering, March 2005.

Invited Seminar: "Multifunction Antennas: Reconfigurability and Bandwidth for New Applications," Washington University in St. Louis, Department of Mechanical Engineering, March 2005.

Invited Seminar: "Development of Wireless Embeddable Sensors for Structural and Geotechnical Applications," Turner-Fairbank Highway Research Center, Federal Highway Administration, November 2004. Invited Seminar: "Antennas for the 21st Century: Reconfigurable Radiating Systems," Given to the Columbus Chapters of the IEEE Microwave Theory and Techniques Society and IEEE Antennas and Propagation Society and the Electroscience Laboratory in the Department of Electrical and Computer Engineering, Ohio State University, July 2004.

Northrop Grumman Corporation, Baltimore, MD. May 2004.

Invited Colloquium Speaker, Cornell University, School of Electrical and Computer Engineering, "Antennas for the 21st Century: Reconfigurable Radiating Systems," April 2004.

Invited Guest Speaker at the Opening of the University of Illinois College of Engineering G.A.M.E.S. camp (Girls' Adventures in Mathematics, Engineering, and Science Camp for junior-high young women), August 2003.

Zenith Electronics Corporation, Lincolnshire, IL. June 2003.

Andrew Corporation, Orland Park, IL. June 2003.

ECE Undergraduate Explorations Seminar, "Reconfigurable Antennas: The Next Frontier for Reliable, High-Speed Wireless Communication Systems," UIUC, March 2003.

Keynote Address, "Reconfigurable Antennas and Apertures: State-of-the-Art and Future Outlook," Proc. SPIE Conf. on Smart Electronics, MEMS, BioMEMS, and Nanotechnology, March 2003.

Invited Seminar: "Antennas for the 21st Century: Reconfigurable Radiating Systems," Given to the Atlanta Chapters of the IEEE Microwave Theory and Techniques Society and IEEE Antennas and Propagation Society and the Department of Electrical and Computer Engineering, Georgia Institute of Technology, November 2002.

Delphi Automotive Systems, Kokomo, IN. November 2001.

ECE 490 Electromagnetics Seminar, UIUC, November 2001.

Amphenol T&M Antennas, Vernon Hills, IL. October 2001.

Kimberly-Clark on ECE 371JB: Sensors and Instrumentation, April 2001.

National Teaching College Workshop, UIUC, March 2001.

CSL Communications/Signal Processing Seminar, UIUC, February 2001.

ECE Undergraduate Explorations Seminar, UIUC, February 2001.

ICM Bluetooth Conference, Washington, D.C., July 2000.

ECE 490 Microelectronics Seminar, UIUC, October 1999.

Amphenol T&M Antennas, September 1999.

ECE 490 Electromagnetics Seminar, UIUC, January 1999.

ECE 490 Electromagnetics Seminar, UIUC, December 1998.
Teradyne, Inc., Nashua, NH, December 1997.
Southern Methodist University (SMU), Department of Electrical and Computer Engineering, September 1997.
Electromagnetics Special Seminar, UIUC Department of Electrical and Computer Engineering, March 1997.
Case Western Reserve University, Department of Electrical and Computer Engineering, May 1996.
Raytheon, Bedford, MA, January 1996.

DISSERTATIONS AND THESES SUPERVISED AND JOB PLACEMENTS

Ph.D. Dissertation: *A Characteristic Mode Perturbation Approach for Antenna Loading Design*, Matthew W. Young, August 2015. Staff Engineer, Sandia National Laboratories.
M.S. Thesis: *Technique for the Design of Matched Antennas using Method of Moment-based Greedy Best-first Search*, Dennis Yuan, August 2015. Staff Engineer, Qualcomm.
Ph.D. Dissertation: *Characteristic Mode Theory for Closely Spaced Dipole Arrays*, Aaron King, May 2015. US Army.
M.S. Thesis: *Impact of Ground Plane Serrations on Radiation and Impedance Characteristics of a Slot Antenna over a Conductive Back Plane*, Matthew A. Young, May 2015. Staff Engineer, Delcross.
M. S. Thesis: *An Investigation of Series LC Resonant Circuits with a Sleeve Balun to Achieve Wideband Operation*, Christie Bermudez Rivera, December 2014. Staff Engineer, Northrop Grumman Corporation.
M.S. Thesis: *Controlling Coupling in an Electrically Steerable Parasitic Array*, John Outwater, December 2014. Continuing for a Ph.D.
M. S. Thesis: *On the Accuracy of Estimating Input Impedance of Probe-Fed Air-Substrate Microstrip Patch Antennas Using the Theory of Characteristic Modes*, Brian Gibbons, December 2014. Continuing for a Ph.D.
Ph.D. Dissertation: *Analysis and Design of Electrically Small, Circularly Polarized Cylindrical Microstrip Antennas*, Brian Herting, May 2014. Principle Systems Engineer, Rockwell Collins.
M. S. Thesis: *An Electrically Small Multi-port Loop Antenna for Direction of Arrival Estimation*, Robert Scott, May 2014. Member of Technical Staff, Applied Physics Laboratory, Johns Hopkins University.
Ph.D. Dissertation: *Analysis and Design of Compact Low Profile Antennas for Fixed Volume Applications*, Carlo Van Niekerk, May 2013. Lead Antenna Engineer, Sonos, Inc.
M. S. Thesis: *An Analysis of the Bandwidth Oscillations Caused by Finite Ground Planes Using Characteristic Mode Theory*, Nicole Bohannon, May 2013. Continuing for a Ph.D. (NDSEG Fellow)
M. S. Thesis: *Electromagnetic Characterization of Carbon Nanotubes and Their Composites for Microwave Sensing Applications*, Kurt Schab, May 2013. Continuing for a Ph.D.
Ph.D. Dissertation: *Physical Layer Encryption using Fixed and Reconfigurable Antennas*, Michael P. Daly, December 2012. (SMART Fellow, NDSEG Fellow) Member of Technical Staff, US Navy SPAWAR, San Diego.
Ph.D. Dissertation: *Design and Analysis of Direction-Of-Arrival Estimation Systems Using Electrically Small Antenna Arrays*, Matthew J. Slater, August 2012. Member of Technical Staff, Motorola Mobility.
M. S. Thesis: *A Frequency Reconfigurable Slot Antenna with Conductive Microfluidic Switching Mechanism*, Aaron J. King, May 2012. Continuing for a Ph.D. (SMART Fellow)
M. S. Thesis: *Investigation of Mutual Coupling Effects on Pattern Null Reconfigurable Antennas in Small Adaptive Arrays*, Matthew W. Young, May 2012. Continuing for a Ph.D.
M. S. Thesis: *Conductive Cylindrical Surface Waveguides*, Katherine A. Erickson, May 2012. Member of Technical Staff, National Instruments.

- Ph.D. Dissertation: *Design and Analysis of Pattern Null Reconfigurable Antennas*, Siwen Yong, May 2012. Member of Technical Staff, Apple.
- Ph.D. Dissertation: *Small, Dual Band, Placement Insensitive Antennas*, Jessica Ruyle, December 2011. Assistant Professor, Department of Electrical and Computer Engineering, University of Oklahoma.
- Ph.D. Dissertation: *Design and Analysis of Reconfigurable MIMO Antennas for Next Generation Wireless Communication Systems*, Jie Bang Yan, December 2011. (Croucher Fellow) Research Assistant Professor, Department of Electrical and Computer Engineering, University of Kansas.
- M. S. Thesis: *Design and Analysis of an Electrically-Small Inductively Loaded Sector Antenna for Frequency Reconfiguration Using Varactor Diodes*, Steven Dawson, August 2011. First RF Corporation.
- Ph.D. Dissertation: *Characteristic Modes for Impedance Matching and Broadbanding of Electrically Small Antennas*, Jacob A. Adams, May 2011. (NSF Fellow) IC Postdoctoral Fellow, University of Illinois at Urbana-Champaign, Department of Electrical and Computer Engineering, Electromagnetics Laboratory, 2011-2012. (Now Assistant Professor, Department of Electrical and Computer Engineering, North Carolina State University)
- Ph.D. Dissertation: *Antenna Element Pattern Reconfigurability in Adaptive Arrays*, Tyrone L. Roach, May 2010. Georgia Tech Research Institute (GTRI).
- M. S. Thesis: *Radar Target to Track Spherically Shaped Granular Materials for Both Position and Rotational Movement*, Carlo Van Niekerk, December 2009. (Fulbright Fellow) Continuing for a Ph.D.
- M.S. Thesis: *Reconfigurable Antennas for Multiple-Input Multiple-Output Communications*, Tomasz Z. Wojtaszek, August 2009. U.S. Navy SPAWAR.
- M. S. Thesis: *Permittivity Measurement of a Layered Media using a Microstrip Test Bed*, Suhail Barot, August 2009. Illinois Graduate School in Urban Planning.
- Ph.D. Dissertation: *Ground Plane Slot Structures for Isolation of Cosited Microstrip Antennas*. Kiersten C. Kerby, May 2009. MITRE Corporation.
- M.S. Thesis: *An Investigation Into Electrically Small Antennas Used for Direction of Arrival Estimation*. Michael D. Anderson, May 2009. McDonnell, Boehnen, Hulbert & Berghoff, LLP.
- M.S. Thesis: *Dual-Fed Single Microstrip Patch Antenna with Polarization and Angle Diversity for MIMO Applications*. Leon Yeow Ting, May 2009. Qualcomm, Singapore.
- M.S. Thesis: *A Directional Modulation Technique for Phased Arrays*. Michael P. Daly, December 2008. Continuing for a Ph.D.
- M.S. Thesis: *A Compound Reconfigurable Antenna*. Matthew J. Slater, December 2008. Continuing for a Ph.D.
- M.S. Thesis: *Reconfigurable Beam-Steering Microstrip Patch Antenna*. Jessica Ruyle, August 2008. Continuing for a Ph.D.
- M.S. Thesis: *Investigation into the Effects of Solid State Switches on Reconfigurable Antenna Performance*. William Bornhoff, May 2008. Northrop Grumman Corporation.
- M.S. Thesis: *Improved Antenna Designs For Next Generation RFID Systems: People And Object Tracking For Homeland Security Applications*. Morgan Reeder, May 2008. Somat Corporation.
- M.S. Thesis: *Investigation into the Relationship between Width and Efficiency of Patch Antennas*. Siwen Yong, May 2008. Continuing for a Ph.D.
- M.S. Thesis: *Investigation of Methods to Create Prescribed Frequency Shifts in Transmitted Signals Using a High Impedance Surface*. Rasa K. Divilas, May 2008. Toyon Research Corporation.
- Ph.D. Dissertation: *Analysis and Design of a Broadband Antenna for Software Defined Radio*. Zhuohui Zhang, December 2007. Impinj RFID.
- M.S. Thesis: *Investigation of Techniques to Achieve Compatibility between Multiband Cellular Phone Antennas and Hearing Aids*. Priyanka Bhandari, August 2007. Emerging Systems, DSO National Laboratories, Singapore, Singapore.
- M. S. Thesis: *Performance Study of Pattern Reconfigurable Antennas in Multiple-Input Multiple-Output Communications Systems*. Joshua D. Boerman, May 2007. Motorola.

- M.S. Thesis: *Investigation of Frequency Selective Surfaces for Remote Sensing*. Joseph Banasiak, December 2006. Motorola.
- Ph.D. Dissertation: *A Radiation Reconfigurable Magnetic Line Source Antenna: Modeling, Integration with RF MEMS, and Applications*. Gregory H. Huff, October 2006. Assistant Professor, Department of Electrical and Computer Engineering, Texas A&M University. (Now Associate Professor)
- M. S. Thesis: *Investigation and Analysis of Sectioned Substrate Microstrip Patch Antenna*, Joshua Fladie, August 2006. Northrop Grumman Corporation. Now in Graduate School at the University of Arkansas.
- M.S. Thesis: *Design and Analysis of Electrically-Small Inductively Loaded Dual Sector Antennas for Surface Sensing Applications*. Nicholas C. Soldner, May 2006. Member of Technical Staff, United Technologies.
- M.S. Thesis: *Investigations of Methods for Isolating Two Co-located Microstrip Antennas*. Graham R. Alvey, May 2006. Motorola.
- M. S. Thesis: *Efficiency of an Electrically Small Monopole for Animal Tracking*, Jacqueline M. Martin, December 2005. SAIC.
- Ph.D. Dissertation: *A Pattern Reconfigurable Microstrip Parasitic Array: Theory, Design, and Applications*, Shenghui Zhang, August 2005. Chinese Heng-Xing Inc., Beijing, China.
- M. S. Thesis: *Design and Analysis of Wideband Canted Sector Antennas for Use in Aperiodic Arrays*, Garvin Cung, August 2005. Northrop Grumman Corporation.
- M.S. Thesis: *Sidelobe Level and Wideband Behavior of Arrays of Random Subarrays*, Kiersten Kirby, May 2005. Continuing for Ph.D.
- M.S. Thesis: *A Comparative Study of Diversity Gain and Spatial Coverage: Fixed Versus Reconfigurable Antennas for Portable Devices*, Tyrone L. Roach, May 2005. Continuing for Ph.D.
- M.S. Thesis: *Beam Steering in Phased Arrays Using a Pattern Reconfigurable Antenna*, Kevin N. Hietpas, December 2004. Amphenol Antel Inc.
- M.S. Thesis: *A Pattern and Frequency Reconfigurable Microstrip Spiral Antenna*, Gregory H. Huff, December 2003. Continued at UIUC for Ph.D.
- M.S. Thesis: *Millimeter Wave Frequency Tunable Oscillators*, Judy Feng, UIUC, October 2003. BAE Systems.
- M.S. Thesis: *An Analysis and Design Tool for Evaluation of Integrated Antenna Diversity Systems in Portable Wireless Devices*, Daniel Chen, UIUC, August 2003. Rockwell Collins.
- M.S. Thesis: *Analysis and Design of U-slot Microstrip Antennas*, Eric C. George, UIUC, August 2003. IBM.
- M.S. Thesis: *A Stacked Reconfigurable Bowtie Antenna for Dual Polarization and Wide Switchable Bandwidth*, Jeffrey E. Hazen, UIUC, August 2003. SAIC.
- M.S. Thesis: *Design and Optimization of a Dual-Band Two-Slot Planar Inverted-F Antenna*, Brian J. Herting, UIUC, May 2003. Rockwell Collins.
- M.S. Thesis: *Microstrip Diplexer Design and Implementation for Wireless LAN*, Kanhua S. Liang, UIUC, May 2003.
- M.S. Thesis: *Electromagnetic Study of Integrated Hearing Aid Antennas*, Mitesh Parikh, UIUC. September 2002. Northrop Grumman Corporation.
- M.S. Thesis: *Frequency Reconfigurable Microstrip Antenna using Plastic Deformation Magnetic Actuation*, Jean-Christophe Jacques Paul Langer, UIUC. May 2002. Amphenol T&M Antennas. Now with Nokia.
- Ph.D. Thesis: *Development and Validation of a Comprehensive Packaging Strategy for Integrated Antennas in Mobile Communication Equipment*, David Strohschein, UNH. May 2002. EMWave Wireless/MIT Lincoln Laboratory.
- M.S. Thesis: *Analysis and Design of Broadband Single-layer Rectangular U-slot Microstrip Patch Antennas*, Steven Weigand (through exchange with University of Darmstadt, Germany), June 2001. WJ Communications.

- M.S. Thesis: *Novel Active Antenna Elements for High Performance Phased Reflectarrays*, Randall Clark, UIUC. May 2001. Northrop Grumman Corporation.
- M.S. Thesis: *Experimental Study of Reconfigurable Cavity-Backed Slot Antennas*, Patrick Codd, UIUC. December 2000. Silicon Bandwidth.
- M.S. Thesis: *Antenna Efficiency Measurement and the Effects of a Nearby Object on Radiation Efficiency*, Rong Hua Wang, UIUC. December 2000. Private consultant.
- M.S. Thesis: *A Design Model for Rectangular Microstrip Antennas with Lossy Dielectric Materials*, Helen (Kankan Wang) Pan, UIUC. December 2000. Intel.
- M.S. Thesis: *Evaluation of Integrated Antenna Diversity Systems*, Pedro Irazoqui, UNH. May 1999. UCLA Graduate School; Triangle Biosystems, RTP, NC; now faculty at Purdue University, Department of Biomedical Engineering.

CURRENT GRADUATE STUDENTS

Graduate Students (13): Aaron King (M.S./Ph.D.), Matthew A. Young (M.S.), Matthew W. Young (M.S./Ph.D.), Nicole Bohannon (M.S./Ph.D.), Kurt Schab (M.S./Ph.D.), John Outwater (M.S./Ph.D.), Brian Gibbons (M.S./Ph.D.), Pallavi Sharma (Ph.D.), Erica Daly (Ph.D.), Nicholas Soldner (Ph.D.), Elias Wilken-Resman (M.S./Ph.D.), Dennis Yuan (M.S.); Ayah Massoud (Ph.D.)

GRADUATE COMMITTEES

- Ph.D. Committee (External Examiner): George Shaker (A. Safavi-Naeini, Chair), University of Waterloo, 2013.
- Preliminary and Ph.D. Committee: Scott Denenberg (A. Cangellaris, Chair), UIUC, 2013, 2014.
- Preliminary and Ph.D. Committee: Thomas Comberiate (D. Schutt-Aine, Chair), UIUC, 2013.
- Ph.D. Committee (External Examiner): Jonathan Ethier (D. McNamara, Chair), University of Ottawa, Canada, 2012. [Winner of the Pierre Laberge Prize presented by the University of Ottawa]
- Preliminary and Ph.D. Committee: Patrick Kuan Lye Goh (J. Schutt-Aine, Chair), UIUC, 2011/2012.
- Preliminary and Ph.D. Committee: Dmitri Klokov (J. Schutt-Aine, Chair), UIUC, 2011.
- Preliminary and Ph.D. Committee: Pavle Milosevic (J. Schutt-Aine, Chair), UIUC, 2011.
- Preliminary and Ph.D. Committee: Ata Zadehgo (A. Cangellaris, Chair), UIUC, 2010/2011.
- Preliminary Committee: Joon Hyung Chung (A. Cangellaris, Chair), UIUC, 2011/2012.
- Preliminary and Ph.D. Committee: Joshua Sulkin (K. Choquette, Chair), UIUC, 2010/2011.
- Preliminary and Ph.D. Committee: Seung Hoon Sung (G. Eden, Chair), UIUC, 2010.
- Preliminary and Ph.D. Committee: Dominic Siriani (K. Choquette, Chair) UIUC, 2009/2011.
- Preliminary and Ph.D. Committee: Lin Sun (W. Chew, Chair) UIUC, 2009/2010.
- Ph.D. Committee: Yujia Li (J. Jin, Chair) UIUC, 2009.
- Preliminary and Ph.D. Committee: Vasileios Kourkoulos (A. Cangellaris, Chair) UIUC, 2008.
- Preliminary and Ph.D. Committee: Aravind Ramachandran (A. Cangellaris, Chair) UIUC, 2008/2009.
- Preliminary and Ph.D. Committee: Karan Bhatia (E. Rosenbaum, Chair) UIUC 2007/2008.
- Preliminary and Ph.D. Committee: Anne Woo (A. Cangellaris, Chair) UIUC 2007/2008.
- Ph.D. Committee: Jiafeng Zhang (K. Hill, Chair, Mechanical Science and Engineering) UIUC 2008.
- Preliminary and Ph.D. Committee: Benjamin Chu-Kung, (M. Feng, Chair) UIUC, 2007.
- Preliminary and Ph.D. Committee: Ann Lehman, (K. Choquette, Chair) UIUC, 2006/2007.
- Preliminary and Ph.D. Committee: Benjamin Ervin, (H. Reis, Chair, Industrial and Enterprise Systems Engineering), UIUC, 2006/2007.
- Preliminary and Ph.D. Committee: Matthew Fisher, (S.L. Chuang, Chair) UIUC, 2005/2006.
- Preliminary Committee: Zaher Hashisho (M. Rood, Chair, Civil and Environmental Engineering), UIUC, 2005.
- Preliminary and Ph.D. Committee: Nan-Wei Chen, (E. Michielssen, Chair) UIUC, 2003.
- Preliminary and Ph.D. Committee: Myoung Joon Choi, (A. Cangellaris, Chair) UIUC, 2003.

Ph.D. Committee: Zhaomei Feng, (E. Kudeki, Chair) UIUC, 2002.
Ph.D. Committee: Hsyeh-Yung Robert Chao, (J. Jin, Chair) UIUC, 2002.
Preliminary and Ph.D. Committee: David Becher, (M. Feng, Chair) UIUC, 2002.
Preliminary and Ph.D. Committee: Han Seok Kim, (S. Franke, Chair) UIUC, 2002/2004.
Preliminary and Ph.D. Committee: Jun Zou, (C. Liu, Chair) UIUC, 2001.
M.S. Thesis Committee: Adam Healey, UNH 2000.
M.S. Thesis Committee: Timothy Chevalier, UNH, 1998.
M.S. Project Committee: Christopher Williamson, UNH, 1998.
M.S. Thesis Committee: Jacob Freeman, UNH, 1996.

PROFESSIONAL SERVICE

Academic Review Committees

University of Arizona, Academic Program Review Committee, Department of Electrical and Computer Engineering (Chair), 2015.

Advisory Boards

Duke ECE Advisory Board, 2007 – 2008.
University of Arizona ECE Industrial Advisory Board, 2013 – 2014.

Associate Editorships and Editorial Board Positions

Associate Editor, *IEEE Transactions on Antennas and Propagation*, 2001 – 2007.
Associate Editor, *IEEE Antennas and Wireless Propagation Letters*, 2001 – 2005.
Editorial Board, *Smart Structures and Systems*, 2004 – Present.

Guest Editorships

Guest Editor for Special Issue on Antenna Design and Integration in Smart Sensors, *IEEE Sensors Journal*. August 2014.
Guest Editor for Special Issue on Antenna Systems and Propagation for Cognitive Radio, *IEEE Transactions on Antennas and Propagation*. March 2014.
Guest Editor for Special Issue on Multifunction Antennas and Systems, *IEEE Transactions on Antennas and Propagation*. February 2006.

IEEE Offices and Positions Held

IEEE Publications, Services, and Products Board, Member at Large, 2014-2016.
IEEE PSPB Representative to Women In Engineering Committee, 2014 - Present.
IEEE Publications, Services, and Products Board, TAB Representative, 2012.
IEEE Antennas and Propagation Society Immediate Past President, 2009.
IEEE Antennas and Propagation Society Nominations Committee Chair, 2009.
IEEE Antennas and Propagation Society Past Presidents Council Chair, 2009.
IEEE Antennas and Propagation Society Past Presidents Council, 2009-Present.
IEEE Technical Activities Board Strategic Planning Committee, 2009-2011.
IEEE Antennas and Propagation Society URSI Liaison, 2009-2011.
IEEE Antennas and Propagation Society President, 2008.
IEEE Antennas and Propagation Society President Elect (Elected), 2007.
IEEE Antennas and Propagation Society Administrative Committee (Elected), 2004-2006.
IEEE Antenna and Propagation Society, Chair of Constitution and Bylaws Committee, 2003-2007.
UNH IEEE Student Branch Faculty Advisor, 1996 – 1998.
New Hampshire IEEE State Executive Committee, 1996-1998.

URSI Offices and Positions Held

USNC-URSI Commission D Chair, 2012-2014.
USNC-URSI Commission D Vice Chair, 2009-2011.
USNC-URSI Commission D Secretary, 2006-2008.
USNC-URSI Member-at-Large (Elected), 2005-2007.
USNC-URSI Commission B Member-at-Large (Elected), 2004-2005.

Symposium/Conference/Workshop Chair

Chair, Antenna Applications Symposium, Allerton Park, Monticello, IL (Sponsored by ARO, AFRL, UMASS, and UIUC), 2012 – Present.
Co-Chair and Organizer, NSF Workshop on Enhancing Access to the Radio Spectrum (EARS) Workshop, Arlington, VA, August 4-6, 2010.
Co-Chair and US Delegation Leader, US-Japan Workshop on Bio-Inspired Sensor Networks: Learning from Life, Yokohama, Japan, December 6-8, 2006.
Technical Program Chair, IEEE International Workshop on Antenna Technology: Small Antennas and Novel Metamaterials, White Plains, NY, March 6-8, 2006.
Co-Chair, Antenna Applications Symposium, Allerton Park, Monticello, IL (Sponsored by ARO, AFRL, UMASS, and UIUC), 2001 – 2011.
Technical Program Chair, IEEE AP-S Conference on Antennas and Propagation for Wireless Communications, 2000.

International Symposia/Conference Advisory Boards

2010 International Advisory Committee, International Workshop on Antenna Technology (iWAT 2010), Lisbon, Portugal, March 2010.
2009 International Advisory Committee, IEEE International Symposium on Microwave, Antenna, Propagation, and EMC Technologies for Wireless Communications (MAPE 2009), Beijing, China, October 2009.
2008 International Advisory Board, 3rd International Conference on Smart Material, Structures, and Systems, Symposium C, Acireale, Sicily, Italy, June 2008.
2007 International Advisory Committee, IEEE International Symposium on Microwave, Antenna, Propagation, and EMC Technologies for Wireless Communications (MAPE 2007), Hangzhou, China, August 2007.

Technical Program Committees

2015 IEEE AP-S URSI Technical Program Committee.
2014 IEEE AP-S URSI Technical Program Committee.
2013 IEEE AP-S URSI Technical Program Committee.
2012 IEEE AP-S URSI Technical Program Committee.
2011 IEEE AP-S URSI Technical Program Committee.
2010 IEEE AP-S URSI Technical Program Committee.
2009 IEEE AP-S URSI Technical Program Committee.
2008 IEEE AP-S URSI Technical Program Committee.
2007 IEEE AP-S Technical Program Committee.
2007 Technical Program Committee, IEEE International Workshop on Antenna Technology: Small and Smart Antennas, Metamaterials, and Applications.
2006 IEEE AP-S URSI Technical Program Committee.
2005 International Program Committee for the IASTED International Conference on Antennas, Radar and Wave Propagation.
2005 IEEE AP-S URSI Technical Program Committee.
2004 International Program Committee for the IASTED International Conference on Antennas, Radar and Wave Propagation.
2004 IEEE AP-S URSI Technical Program Committee.

2003 IEEE AP-S URSI Technical Program Committee.
2002 IEEE AP-S URSI Technical Program Committee.
2000 IEEE AP-S URSI Technical Program Committee.
1999 IEEE AP-S URSI Technical Program Committee.

Symposium/Conference Session Chair

2014 IEEE AP-S Session Chair: “Advances in Antenna Arrays.”
2014 IEEE AP-S Session Chair: “Antenna Design and Optimization Techniques.”
2013 IEEE AP-S Session Chair: “Software Control and Optimization of Reconfigurable Antennas.”
2013 IEEE AP-S Session Chair: “Low Profile and Electrically Small Antennas.”
2012 IEEE AP-S Session Chair: “Microstrip Antennas and Printed Devices.”
2011 IEEE AP-S Special Session Organizer and Co-Chair: “Antenna Systems for Unleashing New Possibilities in Cognitive Radios.”
2011 IEEE AP-S Session Chair: “Advances in Electrically Small Antennas.”
2010 Antenna Applications Symposium Session Chair: “Novel Antennas and Applications”
2010 IEEE AP-S Special Session Organizer and Co-Chair: “Antennas for Wireless Sensors and Sensor Networks.”
2008 IEEE AP-S Special Session Organizer and Co-Chair: “Enabling Technology for Antennas and RF Front Ends for Multifunction Communications Systems.”
2007 IEEE AP-S Special Session Organizer and Co-Chair: “Software Reconfigurable Antennas and RF Front Ends for Cognitive Radio.”
2007 IEEE AP-S Session Chair: “Photonic and Terahertz Guided-Wave Systems.”
2005 IEEE AP-S URSI Session Co-Chair: “Integration of Antennas in RF/Wireless Packages.”
2005 IEEE AP-S URSI Session Co-Chair: “High Frequency Devices and Components.”
2005 IEEE AP-S URSI Session Co-Chair: “Reconfigurable Antennas.”
2004 URSI Special Session Organizer and Chair, “Reconfigurable Antennas and Apertures.”
2004 IEEE AP-S URSI Session Co-Chair, “Integration of Antennas on RF/Wireless Packages.”
2003 IEEE Topical Conference on Wireless Communication Technology Session Co-Chair, “Technologies for Adaptive Array Antennas.”
2003 IEEE AP-S URSI Session Co-Chair, “Integration of Antennas on RF/Wireless Packages.”
2003 IEEE AP-S URSI Session Co-Chair, “Reconfigurable Antennas and Circuits Using RF-MEMS.”
2002 IEEE AP-S URSI Session Co-Chair, “Integration of Antennas in RF/Wireless Packages.”
2001 Antenna Applications Symposium Session Chair, “Reconfigurable Antennas.”
2001 IEEE AP-S URSI Session Chair, “Wireless Antennas and Base Station Design.”
2000 IEEE AP-S URSI Session Chair, “Novel Microstrip Antennas and Arrays.”
2000 IEEE AP-S URSI Session Chair, “Novel and Active Antennas and Arrays.”
1999 IEEE AP-S URSI Session Chair, “Diversity Reception and Mobile Antennas.”
1998 IEEE AP-S URSI Session Chair, “Compact Personal Communication Antennas.”
1997 IEEE Northeast Bioengineering Conference Session Chair, “Modeling.”

Reviewer/Judge for Journals and Conferences

IEEE Transactions on Antennas and Propagation
IEEE Antennas and Wireless Propagation Letters
IEEE Microwave and Wireless Components Letters
IEEE Transactions on Electromagnetic Compatibility.
Radio Science
IEE Proceedings on Microwaves, Antennas and Propagation
IEEE Transactions on Communications
Journal of Engineering Education

International Journal of Electronics

Smart Structures and Systems

ASEE Frontiers in Education Conference

2009 IEEE AP-S Student Paper Competition Judge

7th International Symposium on Communications and Information Technologies, 2007

2002 IEEE AP-S Student Paper Competition Judge

Federal and State Research Proposal Review

National Science Foundation Panel Review

Cooperative Grants Program of the U.S. Civilian Research and Development Foundation

South Carolina EPSCOR Pre-proposal Review

U.S. Army Research Office Proposal Review

American Association for the Advancement of Science Proposal Review

GOVERNMENT SERVICE

Committee Member, ad hoc Assessment Committee for the Telecommunications Research and Engineering at the Department of Commerce's Boulder Laboratories, Computer Science and Telecommunications Board, National Science Council, 2015.

Invited Participant, Network and Information Technology Research and Development Program (NITRD) Wireless Spectrum Research and Development (WSRD) Workshop II, "Federal Government and Private Sector Collaboration on Research, Development, Experimentation, and Testing of Innovative Spectrum Sharing Technologies," January 2012.

President's Council of Advisors on Science and Technology (PCAST) Working Group on Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth, 2011-2012.

Invited Participant, Network and Information Technology Research and Development Program (NITRD) Wireless Spectrum Research and Development (WSRD) Workshop I, "Toward Innovative Spectrum-Sharing Technologies: A Technical Workshop on Coordinating Federal Government/Private Sector R&D Investments," July 2011.

IDA Science & Technology Policy Institute, Study Participant, 2010.

Electromagnetic Warfare Focus Area (Radar Division) External Review Panel, NRL, 2010.

UNIVERSITY SERVICE

Illinois Health Sciences Initiative (IHSI) Director Search Committee (Chair, 2014).

CIC Academic Leadership Fellow, 2012-2013.

UIUC Campus Research Administrators Working Group (CRAWG), (Chair, 2012-2014), 2012-Present.

UIUC Stewarding Excellence Committee, NCSA, 2011.

UIUC Graduate College Fellowship Executive Committee (Chair), 2010-2011.

UIUC Graduate College Fellowship Board (Chair, Engineering and Physical Sciences), 2009-2010.

UIUC Gender Equity Council, 2008-Present.

UIUC Working Group on Undergraduate Research (Co-Chair), 2008-2009.

UIUC Graduate College Fellowship Board (Chair, Engineering and Physical Sciences), 2008-2009.

UIUC Graduate College Fellowship Board, 2004-2006, 2007-2008.

UIUC Provost's Planning Committee on Gender Equity, 2006-2007.

COLLEGE SERVICE

Illinois Applied Research Institute Director Search Committee, 2013.

Big 10 Women's Workshop, Organizing Committee, Milwaukee, WI, April 2013.

Engineering Faculty Leadership Forum Participant, UIUC College of Engineering, 2011-2012.

UIUC College of Engineering College Advancement of the Recruitment and Retention Environment (CAR²E) Committee (Chair), 2009-2011.

Big 10 Women's Workshop, Senior Faculty Member Representative, Milwaukee, WI, April 2010.

UIUC College of Engineering, Vodafone Committee (Chair), 2004-2006.

UIUC College of Engineering, Vodafone Committee, 2003-2004.

UIUC College of Engineering, Advisory Committee for Climate Study for Women in the College of Engineering, 2003-2004.

UIUC Faculty Senate (Elected), 2003-2005.

UIUC Faculty Senate (Elected), 2000-2002.

DEPARTMENT SERVICE

UIUC ECE Department Faculty Search Committee, 2014-2015.

UIUC ECE Department Graduate Recruitment Committee, 2013-2014.

UIUC ECE Department Faculty Search Committee, 2013-2014.

UIUC ECE Department Graduate Recruitment Committee, (Chair), 2012-2013.

UIUC ECE Department Faculty Search Committee, 2012-2013.

UIUC ECE Department, Advisory Committee (Elected), 2011 – 2013.

UIUC ECE Department Graduate Recruitment Committee (Chair), 2011-2012.

UIUC ECE Department Faculty Search Committee, 2011-2012.

UIUC ECE Department, Graduate Recruitment Committee (Chair), 2010-2011.

UIUC ECE Department, Advisory Committee (Elected), 2009 – 2011.

UIUC ECE Department Faculty Search Committee, 2009-2010.

UIUC ECE Department, Electromagnetics, Optics, and Remote Sensing Area Chair, 2007-2010.

UIUC ECE Department, Department Head Search Committee, 2009.

UIUC ECE Department Faculty Search Committee, 2008-2009.

UIUC Eta Kappa Nu Awards Selection Committee, 2007-2008.

UIUC ECE Department Faculty Search Committee, 2007-2008.

UIUC ECE Department, Electromagnetics, Optics, and Remote Sensing Area Chair, 2005-2006.

UIUC ECE Department, ABET Committee, 2005-2006.

UIUC ECE Department, Advisory Committee (Elected), 2004 – 2006.

UIUC ECE Department, Advisory Committee (Elected), 2003 – 2004.

UIUC ECE Department, Curriculum Committee, 2003-2004.

UIUC ECE Department Advisory Committee (Elected), 2002 – 2003.

UIUC ECE Department Long Range Planning Committee, 2001 – 2002.

UIUC ECE Co-Chair and Chair of Qualifying Exam Committee, Spring and Fall 2001.

UIUC ECE Department Fellowship Committee, 2000 – 2002.

UIUC ECE Undergraduate Research Symposium Judge, April 2000.

UIUC ECE Research Laboratory Open House, 2000 – Present.

UIUC ECE Department Laboratory Safety Committee, 1999 – Present.

UIUC ECE Department Graduate Seminar Committee, 1999 – 2001.

UIUC ECE Senior Design Project Advisor, 1999 – Present.

UNH ECE Department Undergraduate Committee, 1997 – 1998.

UNH College of Eng. and Physical Sciences Committee on Distance Learning, 1996 – 1998.

NEW COURSE DEVELOPMENT

Senior/Graduate level sensors and instrumentation laboratory course, UIUC, 2000-2003.

Graduate-level antenna course, UNH, 1997.

Freshman-level ECE introductory course, UNH, 1996.

Graduate-level wireless communications course, UNH, 1996.

COURSES TAUGHT (Average instructor evaluation scores in brackets out of a maximum of 5 points)

Graduate level

- Advanced antenna theory
 - UIUC, Spring 2013 [4.00]
 - UIUC, Spring 2011 [4.30]
 - UIUC, Spring 2009 [4.80]
 - UIUC, Fall 2007 [4.40]
 - UIUC, Fall 2005 [4.60]
 - UIUC, Fall 2002 [4.10]
- Seminar in antennas, electromagnetics and coherent optics
 - UIUC, Fall 2001 and Spring 2002
- Antennas (New Course Development),
 - UNH, Fall 1997 [4.78]
- Wireless communications (New Course Development)
 - UNH, Spring 1996 [4.54]

Senior/Graduate level

- Microwave circuit design (Course Director)
 - UIUC, Spring 2014 [4.70]
 - UIUC, Spring 2012 [4.10]
 - UIUC, Spring 2011 [4.90]
 - UIUC, Spring 2010 [4.50]
 - UIUC, Spring 2009 [4.60]
 - UIUC, Spring 2008 [4.20]
 - UIUC, Spring 2006 [4.30]
 - UIUC, Spring 2005 [4.70]
 - UIUC, Spring 2004 [4.30]
 - UIUC, Spring 2003 [4.50]
 - UIUC, Spring 2002 [4.60]
 - UIUC, Spring 2000 [4.70]
- Antennas (Course Director)
 - UIUC, Spring 2013 [4.50]
 - UIUC, Fall 2011 [4.50]
 - UIUC, Fall 2010 [4.60]
 - UIUC, Fall 2009 [4.80]
 - UIUC, Spring 2008 [4.60]
 - UIUC, Spring 2006 [4.50]
- Sensors and instrumentation laboratory course (New Course Development)
 - UIUC, Fall 2011 [4.20]
 - UIUC, Fall 2008 [3.70]
 - UIUC, Spring 2005 [4.30]
 - UIUC, Spring 2004 [4.30]
 - UIUC, Spring 2003 [3.90]
 - UIUC, Fall 2001 [4.20]
 - UIUC, Fall 2000 [4.50]

Junior-level

- Electromagnetic fields and waves
 - UIUC, Fall 2004
 - UIUC, Fall 2001 [4.10]
 - UIUC, Fall 1999 [4.10]

UIUC, Spring 1999 [4.40]
UIUC, Fall 1998 [4.50]
UNH, Spring 1998 [4.70]
UNH, Spring 1997 [4.69]
Amplifier design laboratory
UNH, Fall 1996 [4.20]
Signals and systems
UNH, Fall 1995 [4.33]

Freshman-level

ECE introductory course (New Course Development)
UNH, Fall 1997 [4.44]
UNH, Fall 1996 [4.50]

SENIOR DESIGN PROJECTS SUPERVISED

1. *Sustainable Pushcart for the Reduction of Postharvest Loss (1)*, Matthew O'Neill, S. Kaur, and S. Kiebles, Spring 2014.
2. *Sustainable Pushcart for the Reduction of Postharvest Loss (2)*, H. Patel, J. Rey, and S. Almeleh, Spring 2014.
3. *Sustainable Pushcart for the Reduction of Postharvest Loss (3)*, A. Minenko, H. Pierce, and Z. Cai, Spring 2014.
4. *Cornhole/Bags Electronic Scoring System*, T. DeMint and K. Singh, Spring 2012.
5. *Behavioral Otter Tracking*, K. Nanto, J. Lesicko, and Miceal Rooney, Spring 2012.
6. *Atmospheric Power Scavenging*, C. Burgner and W. Kelleher, Fall 2010. [Winner: Electromagnetics Area Award]
7. *Self Powered Repeater for Radio Controlled Clocks*, B. Cerier, K. Boger, and R. Hermann, Fall 2010.
8. *Bicycle Situational Awareness Device*, M. Agarwal and K. H. Chen, Fall 2010.
9. *John Deere Tire Deflection Gauge*, S. Shiffer and J. Klager, Spring 2010. [Winner: Teamwork Award] Sponsored by John Deere.
10. *Ice Accumulation Sensor*, Z. Gao and D. Hand, Spring 2010. [Winner: Sensors Area Award]
11. *SAIC Proposal: Detecting Keystrokes*, I. Cottle and V. Bora, Fall 2009. [Winner: Digital Signal Processing Area Award]
12. *GPS Antenna using New L5 Frequency*, E. Latifzai and T. Horan, Spring 2007.
13. *Radio Jamming on Multiple Channels and Shielding*, J. Fuson, R. Merz, and E. Eddington, Spring 2006.
14. *Selective RF Radio Jammer with Enemy Detection*, M. Anderson, L. Peng, and W. Bornhoff, Spring 2006.
15. *Children Tracker*, M. Ho and W. Fong, Spring 2006.
16. *Radio Jammer*, A. Rhee, B. Niemoeller, and L. Dietrick, Fall 2005. [Winner: Best Engineered Award]. Sponsored and supported by grant from Northrop Grumman Corporation.
17. *Smart Car Seat*, P. Dhalgara, S. Yu, and S. Patel, Fall 2004.
18. *Car Rooftop Antenna*, J. Banasiak and J. Seuring, Fall 2004. [Winner: Electromagnetics Area Award].
19. *Child Safety Seat*, C. Fella, S. Anumolu, and D. Manjarres, Summer 2004.
20. *RFID Sensor Platform*, V. Grinberg, M. Fragoso, and R. Shah, Spring 2004.
21. *Active Car Seat Baby Protection*, R. Schoonover, R. Simpson, and H. Voigt, Spring 2004. [Winner: Most Marketable Award in Senior Project Competition].
22. *Self-contained Safety System for Children's Car Seat*, J. Fladie and S. Stieber, Spring 2004.
23. *Smart Car Seat*, J. Carter, J. Johnson and S. Kopchik, Spring 2004.
24. *Skier Recovery Device*, S. Gupta, P. Lachman, and S. Gupta, Spring 2004.
25. *Bird Accelerometer*, Robert McKenzie, Gregory Sorenson, and John Flink, Fall 2003.
26. *CUBE SAT Project*, Charles Bank, Fall 2002 and Spring 2003.

27. *Computer Media Transmitter*, J. Hill, S. Bhowmik, and B. Shein, Spring 2003.
28. *Yagi Antenna Design for Animal Tracking*, A. Price, M. Phan, and D. Tu, Spring 2003.
29. *RF/Microwave Circuit for Phase Shifting in Phased Antenna Arrays*, P. Lee and G. Cung, Spring 2003. [Winner: Area Award in RF in Senior Project Competition].
30. *Stealth Charger*, B. Raczkowski, K. Hietpas, and M. Lilien, Spring 2003.
31. *Robotic Tracker*, Z. Zhao, P. Chen, and J. Wang, UIUC, Spring 2003. [Winner: Area Award in Electromagnetics in Senior Project Competition].
32. *Digital Appliance Timer*, N. Klezek, J. Elkow, and B. Westendorf, UIUC, Spring 2003.
33. *Estimated Time of Arrival System for Campus Buses*, J. Mariquina, S. Ear, and R. Sayre, UIUC, Fall 2002. [Winner: Area Award in Communications in Senior Project Competition].
34. *Wireless Interface for Biomedical Application*, B. Benjamin, K. Sagi, and S. Wisted, UIUC, Fall 2002.
35. *Wireless Guitar Unit with Onboard Effects Control*, J. Smith, J. Miller, and E. Bellas, Fall 2002.
36. *CUBE SAT Project*, Daniel Chen, UIUC, Spring 2002.
37. *Ground Penetrating Radar System*, Shawna Jones, Meghan McGinn, and Nicholas Riordan, UIUC, Spring 2002.
38. *CUBE SAT Project*, Patrick Cox, UIUC, Fall 2001.
39. *Wireless Localization 911*, Jessica Hoi Liu and Jerry Cheng, UIUC, Fall 2001.
40. *ISM Spread Spectrum Transmitter/Receiver*, Christopher Lettow, Justin Quek, and Robert Sosack, UIUC, Summer 2001.
41. *Baby Cushion Breathing Monitor*, Mitesh Parikh, Julie Cherian, and Adnan Bajowala, UIUC, Spring 2001.
42. *Electronic Muscle Assist for Parapelegic Biking*, Jiten Patel and Nirav Thakker, UIUC, Spring 2001.
43. *Wireless Handshaker*, Brian Kominiarek and Dima Moussa, UIUC, Spring 2001. [Winner: "Most Innovative" Award in Senior Project Competition].
44. *Economical Wireless Headphones*, Melvin Stevens, UIUC, Fall 2000.
45. *Cordless Phone Receiver Sensing Device*, Charlinda Catchings and Chrissy Hart, UIUC, Spring 2000.
46. *Satellite Tracking System*, Randy Bruce and Daniel Whitted, UIUC, Spring 2000.
47. *GPS Receiver for Handspring PDA*, Paul Niemczyk, David Marshall, and Tim Wilson, UIUC, Spring 2000.
48. *Micropatch Antenna Array*, Joey Guerra, Juan Herrera and George Valdovinos, UIUC, Fall 1999. [Winner: "Best Engineered Project" Award in Senior Project Competition].
49. *Motorcyclist Safety Helmet*, Chanda Allen, Seung Han, and Daniel Moges, UIUC, Fall 1999. [Winner: "Teamwork" Award in Senior Project Competition].
50. *Cellular Repeater*, Mark Nowak and Kevin Swanson, UIUC, Fall 1999.
51. *Microstrip Antennas in Diversity Schemes for Wireless Local Area Networks*, Christina Short and Eric Swanson, in cooperation with P. Irazoqui-Pastor, supported through NSF POWRE Grant, UNH, Summer 1998 – Spring 1999 [Winner: "Most Original and Innovative Design" in Senior Project competition].
52. *Electromagnetic Characterization of Wireless Board-to-Board Interconnects*, Andrea Dozet, Honors project supported through Teradyne, UNH, Summer 1998 – Spring 1999.
53. *Split Ground Plane Characteristics of Printed Circuit Boards*, Marc Cartier, supported through Cabletron, UNH, Summer 1997 – Spring 1998.
54. *Ethernet Line Monitor*, Michael Nyahe, supported through UNH InterOperability Lab, UNH, Summer 1997-Spring 1998.
55. *Microstrip Frequency Diplexer for Cellular and Local Area Networks*, Scott Pfeiffer, UNH, Fall 1996 - Spring 1997.
56. *Design Methodology for Square Spiral Microstrip Antennas*, Shawn Staker, supported through NSF Research Experiences for Undergraduates grant, UNH, Summer 1996 - Spring 1997 [Winner: "Best Presentation" in Senior Project competition].

57. *A Circularly Polarized Microstrip Antenna for Local Area Networks*, Carolyn Tousignant, supported through NSF Research Experiences for Undergraduates grant, UNH, Summer 1996 - Spring 1997.
58. *Impedance Models for Printed Circuit Boards*, Katie Rothstein, Honors project supported through HADCO, UNH, Summer 1996 - Spring 1997.

UNDERGRADUATE RESEARCH PROJECTS SUPERVISED

1. ECE 497/499, Fall 2014/Spring 2015: Sakshi Srivastava. "Wearable Antennas." [Senior Honors Thesis]
2. ECE 497/499, Fall 2013/Spring 2014: Yuou Zhang. "Design of a Size-Limited Dual GSM Frequency-Tunable Microstrip Patch Antenna." [Senior Honors Thesis]
3. ECE 497/499, Fall 2012/Fall 2013: Simran Singh. "Design, Analysis, Fabrication and Test of an UHF (Ultra High Frequency) Passive RFID (Radio Frequency Identification) Tag Antenna." [Senior Honors Thesis]
4. ECE 497/499, Fall 2011/Spring 2012: Fang Wan. "Log-periodic Baluns." [Senior Honors Thesis] [Winner: E.C. Jordan Award]
5. ECE 497/499, Fall 2010/Spring 2011: Richard Muryanto. "Conformal Microstrip Antenna on a Curved Surface." [Senior Honors Thesis] [Winner: E.C. Jordan Award]
6. ECE 497/499, Fall 2010/Spring 2011: Meghna Saikia. "Effects of Parasitics on Antenna Coupling." [Senior Honors Thesis]
7. ECE 497/499, Fall 2009/Spring 2010: Jacob Block. "Use of Ground Plane Resonators to Improve Patch Antenna Reconfigurability." [Senior Honors Thesis] [Winner: E.C. Jordan Award]
8. ECE 497/499, Fall 2009/Spring 2010: Naga Divya Jyothi Madipalli. "RCS Analysis of Arterial Stent." [Senior Honors Thesis]
9. ECE 397, Spring 2010: Christine C. L. Chen. "Analysis of Relationship between Substrate Height and Bandwidth in Broad-Band Single Layer Rectangular U-Slot Microstrip Patch Antennas."
10. ECE 497/499, Fall 2008/Spring 2009: Man Ling Lo. "Ultra-wide band antennas on Textiles." [Senior Honors Thesis] [Winner: E.C. Jordan Award]
11. ECE 497/499, Spring 2008/Fall 2008: Omar El Bassiouny. "Producing Prescribed Frequency Shifts Using Piezoelectric Actuators." Co-advised with V. V. Veeravalli. [Senior Honors Thesis]
12. ECE 497/499, Fall 2007/Spring 2008: Thomas Comberiate. "A Reconfigurable Microstrip Antenna with Switchable Circular Polarization Controlled by Piezoelectric Transducers." [Senior Honors Thesis]
13. Paid Project Work, with support from the UIUC-Intel Undergraduate Research Fund for Women and Minorities, Katherine Coles. "Isolation Improvement of Cosited Microstrip Antennas using Ground Plane Techniques."
14. ECE 497/499, Fall 2006/Spring 2007: Michael Daly. "Design of a Reconfigurable Antenna for WiFi and WiMax Bands." [Senior Honors Thesis]
15. ECE 497/499, Summer 2006/Fall 2006: Rasa Dovilas. "Design of a Matching Network for an Inductively Coupled Plasma." [Senior Honors Thesis]
16. ECE 397, Summer 2006/Fall 2006/Spring 2007: Shanil Merchant. "Series-fed Phased Arrays with Electrically Small Antennas."
17. ECE 397, Summer 2006/Fall 2006: John VanderVennet. "Broadband Antenna Design."
18. ECE 497/499, Fall 2005/Spring 2006: Priyanka Bhandari. "Design and Synthesis of a Wideband Balun." [Senior Honors Thesis] [Winner: E.C. Jordan Award]
19. ECE 397, Independent Study, Fall 2005: Orbay Tuncay. "Investigation of Frequency Tunable Antennas."
20. Paid Project Work, 2005, with support from the UIUC-Intel Undergraduate Research Fund for Women and Minorities, Debi Misra and Rasa Dovilas. "Studies of Electromagnetic Properties of Activated Carbon Cloth for Microwave Regeneration of Volatile Compounds."
21. ECE 397, Fall 2004: Farooq Muqem. "Acoustic Control of Antennas."

22. Paid Project Work, Summer 2004, with support from the UIUC-Intel Undergraduate Research Fund for Women and Minorities, Debi Misra and Rasa Dovilas. "Evaluation of Probe Feed Models for Microstrip Patch Antennas."
23. Paid Project Work, Spring 2004: Joseph Banasiak. "Conformal Multiband Antennas."
24. ECE 272, Independent Study, Spring 2004: Marla Cox. "Investigation of Radar Behavior of Small Retroreflectors for Sensing Systems."
25. ECE 272, Spring 2004: Phillip Lachman. "Investigation of Loss Mechanisms in Reconfigurable Patch Antennas."
26. ECE 272, Fall 2003: Sarah Stieber. "Investigation of Microstrip Probe Feed Models."
27. ECE 272, Fall 2003: Supriya Gupta. "Investigation of the Effects of Magnetic Materials on Microstrip Patch Antennas."
28. ECE 272, Fall 2003: Joshua Fladie. "Study of Wideband Canted Antennas."
29. Paid Project Work, Summer 2003: Joshua Fladie. "Study of Wideband Canted Antennas." Sponsored by U.S. Army Research Office.
30. Paid Project Work, Summer 2003: Morgan Reeder. "Development of Microstrip Antenna Tutorials." Sponsored by NSF Research Experiences for Undergraduates.
31. Paid Project Work, Summer 2003: Kevin Hietpas. "Radio Designs for Embedded Sensors." Sponsored by NSF.
32. Paid Project Work, Summer 2003: Supriya Gupta. "Double Negative Metamaterials."
33. Paid Project Work, Summer 2003: Sandeep Gupta. "Small Antennas for Hearing Aids."
34. Paid Project Work, Spring 2003: Sarah Stieber. "Electrically Small Antennas for Sensors."
35. Paid Project Work, Spring 2003: Peipei Wang. "Electrically Small Antennas for Sensors."
36. ECE 272, Fall 2002: Andrew Pursell. "Wireless Systems in Automobiles."
37. ECE 272, Fall 2002: Peipei Wang. "Feasibility Study of Smart Pebbles."
38. Paid Project Work, Fall 2002: Sarah Stieber. "Feasibility Study of Smart Pebbles."
39. ECE 299, Fall 2002 and Spring 2003: Kiersten Kerby. "Series Resonant Filters in Waveguide."
40. ECE 272, Summer 2002: Wojciech Indyk. "Electrical Properties of Concrete between 1 and 10 GHz."
41. Paid Project Work, Summer 2002, Fall 2002, Spring 2003: Paul Lee, Tony Zoeteman, Kevin Hietpas and Joshua Hill. "Embedded Sensor System Radio Team."
42. Paid Project Work, Summer 2002: Garvin Cung. "Antenna Packaging Effects Continued."
43. Paid Project Work, Spring 2002: Jason Mariquina. "K-band Antenna Measurement System."
44. Paid Project Work, Spring 2002: Garvin Cung. "Investigation of Antenna Packaging Effects."
45. Paid Project Work, Spring 2002: Sarah Stieber. "Self-Energy Devices for Sensors."
46. Paid Project Work, Fall 2001: Judy Feng. "Reconfigurable Spiral Microstrip Antennas."
47. Unpaid Project Work, Spring 2001: Nisarg Shah. "Investigation of Common Portable Wireless Devices."
48. ECE 272, Fall 2000: Gregory Huff. "Ferroelectric-Tuned Antennas."
49. Paid Project Work, Summer 2000: Gregory Huff. "Investigation of Ground Plane Serration on Microstrip Antennas."
50. Paid Project Work, Summer 2000: Judy Feng. "Spiral Microstrip Antennas with Tuning Arms."
51. ECE 272, Spring 2000: David Urbasic. "Multiband Planar Antennas based on Triangular Elements."
52. ECE 272, Spring 2000: Mitesh Parikh. "Lumped Element Model of Cellphone-Head Interactions."
53. ECE 272, Spring 2000: Greg Muthler. "Investigation of Reconfigurable Slot Antennas."
54. ECE 272, Spring 2000: Eric George. "Electrical Properties of Concrete at High Frequencies."
55. Paid Project Work, Fall 1999 - Spring 2000: Brian Huang. "Planar Antennas with Integrated Phase Shifting."

OUTREACH

- "Engineering and Imagination – Helping Children Visualize the Invisible" July 2014, Illinois New Teacher Cooperative (INTC), 2nd Annual Beginning Teacher STEM Conference.

- “What’s Behind our Wireless World?” February 2010, Orpheum Children’s Museum Girls Do Science Club.
- “What’s Behind our Wireless World?” October 2009, Countryside School Science and Engineering Club.
- Hands-On Science Experiments for Preschoolers, 2004-Present, Montessori Habitat School.