Fall 2019

MARQUETTE UNIVERSITY
College of Engineering
Curriculum Vitae

NAME: James E. Richie, Ph.D.

ADDRESS: Department of Electrical and Computer Engineering
Marquette University
P.O. Box 1881
Milwaukee, WI 53201-1881
(414) 288 – 5326
James.Richie@marquette.edu
http://www.eng.mu.edu/∼richiej

EDUCATION:

Sept. 1985 - May 1988 Ph.D. in Electrical Engineering
University of Pennsylvania
Philadelphia, PA 19104

Sept. 1983 - August 1985 M.S.in Electrical Engineering
University of Pennsylvania
Philadelphia, PA 19104

Sept. 1979 - May 1983 B.S. in Electrical Engineering
Lafayette College
Easton, PA 18042

ACADEMIC EXPERIENCE:

August 1995 - present Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, Marquette University, Milwaukee, WI 53233

July 1988 - August 1995 Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, Marquette University Milwaukee, WI 53233

INDUSTRIAL EXPERIENCE:

Summer 1981, 1982 Numeric Control Programmer, Frankel Engineering Company, Reading,PA

CONSULTING EXPERIENCE:

Telephos Associates, Philadelphia, PA, 1986–1987
Expert Systems International, Philadelphia, PA, 1987–1988
Bob LaRocca of Kohn, Savett, Klein, and Graf, Philadelphia, PA, 1988
Foley & Lardner, Milwaukee, WI, 1990
Innovatec Inc., 2000–2001

PROFESSIONAL AFFILIATIONS:

Institute of Electrical and Electronics Engineers (IEEE), Member: 1981–1996, Sr. Member: 1996 - present
Milwaukee Section Executive Committee, 1991 - 1998;
AP/ED/IM/MTT Chairman, 1991–1998, Milwaukee Section Secretary 1997–1998.
IEEE Antenna and Propagation Society, 1984–present
Technical paper reviewer 1992–present
IEEE Electromagnetic Compatibility Society, 1989–2007

Technical Paper reviewer 1997–2005
IEEE Social Implications of Technology Society, 1986–1989
American Society for Engineering Education, 1988–present
American Association for University Professors, 1989–2001

HONORARY SOCIETIES:

Eta Kappa Nu, 1982 – present
Tau Beta Pi, 1983 – present
Sigma Xi, 1990 – present
Marquette Chapter Vice President: 2005–2007
Marquette Chapter President: 2007–2008
Marquette Chapter Board Member: 2008–2014

AWARDS:

1983 J. J. Ebers Memorial Award, Lehigh Valley Section/IEEE
1992 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
1999 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2001 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2001 Marquette University College of Engineering Outstanding Teacher Award
2003 Wilson High School (West Lawn PA) Distinguished Alumnus Award
2006 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2007 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2010 Marquette University College of Engineering Outstanding Teacher Award
2010 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2014 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award
2016 Marquette University Eta Kappa Nu Chapter Teaching Excellence Award

COURSES DEVELOPED:

Antenna Theory and Design: F89, F91, Sp93, Sp94, Sp96, F99, F00, F02, F04, F06, F09, F11, Sp15, Sp17
Wireless Communications: F97, F98, Sp01, Sp03, Sp05, Sp07
Numerical Methods in Electromagnetics (grad): Sp02, Sp04, Sp06, Sp08, Sp10
Microwave Engineering: Sp11,Sp12, F13, Sp16, Sp18
Electric Circuits Laboratory I (Online/hybrid format): F11, F12, F13, F14, F15, F16, F17, F18
Electric Circuits Laboratory II (digital labs added): Sp13, Sp14, Sp15, Sp16, Sp17, Sp18
Electromagnetic Fields (3 cr.): F13, F14, F15, F16, F17, F18

OTHER COURSES TAUGHT:

Electromagnetic Fields I (4 cr.): F88, F90, Sp91, Sp92, F92, Sp94, F95, F96, F97, F99, F00, F01, Su02, Su03, Su04, F04, Su05, F05, Su06, F06, Su07, F07, Su08, F08, Su09, F09, F11, F12
Electromagnetic Fields II: Sp89, F89, F91, Sp93, F93, Sp97, Sp99, Sp00, Sp02, Sp04, Sp07, Sp08, Sp09, Sp10, Sp11, Sp12, Sp13, Sp14, Sp15, Sp16, Sp17, Sp18
Electromagnetic Fields in Engineering (grad): Sp90, F94
Special Topics in Electrical Engineering: Scattering and Diffraction (grad): F90
Electromagnetic Theory (grad): Sp91, Sp95, Sp99, F01, Sp05, F07, Sp12
Electronic Devices and Applications: Sp92, F93, F94, Sp95, Sp96, F96, Sp97, Sp02, Sp06, Sp09, Sp10, Su13, Su14, Su16
Linear Systems Analysis: F02, F05
Electric Circuits Laboratory I: F06, F07, F08, F09
Electric Circuits and Machinery: F08
Seminar: Electromagnetic Applications (grad): F90 – Sp94

Seminar: Microwave Engineering (with T. K. Ishii)(grad): Sp95 – Sp98
Seminar: Microwave Engineering (grad): F98 – present.
Department Colloquium: F95 – Sp97, F07/Sp08
Senior Design Sequence: F90/Sp91 (4 students), F93/Sp94(3), F94/Sp95: (3/2), F95/Sp96:(3), F01/Sp02(2 groups,(3/3), F02/Sp03(5), F06/Sp07(2 groups), F07/Sp08, F08/Sp09, F12/Sp13, F13/Sp14, F15/Sp16

SHORT COURSES TAUGHT:

"Theory and Use of Numerical Electromagnetics Code (NEC)", March 12-19, 1992, at Marshall Space Flight Center, NASA, Huntsville, AL.
"Basic Antenna Theory", March 7-10, 1994, at Marshall Space Flight Center, NASA, Huntsville, AL.

WORKSHOPS DEVELOPED:

Digital Dice Game (for freshman engineering): F12, F13
Smart Phones, Radios, Waves and Antennas (for high school seniors): F12, F13

FUNDED RESEARCH (Grants and Contracts):

$1500. Marquette University Committee on Research, "Enhancements to Practical Array Design," Jan. 1, 1989 – Dec. 31, 1989.

$20,000. The MacNeal-Schwendler Corporation, "Electromagnetic Fields Finite Element Modeling Application," with A. Arkadan, J. Hock, T., Ishii, and S. Schneider, July 1, 1989 – June 30, 1990.

$20,000. The MacNeal-Schwendler Corporation, "Electromagnetic Fields Finite Element Modeling Application," with A. Arkadan, J. Hock, T., Ishii, and S. Schneider, September 1, 1990 – August 31, 1991.

$68,470. NSF, "Research Experiences for Electrical Engineering Undergraduates", with A. Moeller, R. Niederjohn, J. Heinen, and J. Hock, May 1, 1992 – October 31, 1994.

$22,350. NASA/University Joint Venture (JOVE) June 1, 1992 – May 31, 1993.

$14,000. NASA/University Joint Venture (JOVE) Year 2, June 1, 1993 – May 31, 1994.

$19,000. NASA/University Joint Venture (JOVE) Year 3, June 1, 1994 – May 31, 1995.

$29,988. Battelle (U.S. Army), "A Study of HF and VHF Antenna Implementations that Utilize the Airframe on Helicopters", March 15, 1996 – June 30, 1997.

$43,500. Battelle (U.S. Army), "Investigation of Antenna Effects due to Turret Motion", April 1, 2000 – August 15, 2001.

$19,230. Battelle (U.S. Army, STAS), "Investigation of Antenna Radiation Patterns in the Presence of Rotor Modulation on AH-64D Aircraft (30–450 MHz)", May 15, 2001 – September 15, 2001.

$15,000. Marquette University Way-Klingler Teaching Enhancement Award, "Development of Online Lecture and Preparation Rsources for five EECE Laboratory Courses", with S. C. Schneider and F. X. Jacoby, December 2009 – June 2010.

$5,000. Marquette University College of Engineering Student Centered Learning Grant, "Antenna Radiation Pattern Facility", December 2013 – December 2014.

$50,000. NSF Industry/University Research Consortium – Water Equipment and Policy, "A Continuous and Static Water Contaminant Detection System", with C.-H. Lee, January 2017 – December 2017.

$75,000. NSF Industry/University Research Consortium – Water Equipment and Policy, "A Continuous and Static Water Contaminant Detection System", with C.-H. Lee, January 2018 – December 2018.

$50,000. NSF Industry/University Research Consortium – Water Equipment and Policy, "A continuous heavy metal contaminant measurement system in drinking water", with C.-H. Lee and H. Medeiros, January 2019 – December 2019

FELLOWSHIPS:

NASA/ASEE Summer Faculty Fellowship, 1991, 1992.
U.S. Army Summer Faculty Research and Engineering Program Associateship, 1995, 1997, 1998, 1999.

PUBLICATIONS:

(A) Refereed Journal Papers:

J. Richie and H. N. Kritikos, "Linear Program Synthesis for Direct Broadcast Satellite Phased Arrays," *IEEE Trans. on Antennas and Propagation*, Vol. 36, No.3, pp. 345–349, March 1988.

J. Richie and H. N. Kritikos, "Preliminary Shaped Beam Synthesis Using the Product Function," *IEEE Trans. on Antennas and Propagation*, Vol. 38, No. 9, pp. 1504–1507, September 1990.

J. Richie and H. Gangl, "EFIE-MFIE Hybrid Simulation Using NEC: VSWR for the WISP Experiment," *IEEE Trans. Electromagnetic Compatibility*, Vol. 37, No. 2, pp. 293–296, May 1995.

K. Beshir and J. Richie, "On the Location and Number of Expansion Centers for the Generalized Multipole Technique," *IEEE Trans. Electromagnetic Compatibility*, Vol. 38, No. 2, pp. 177–180, May 1996.

J. Richie, and T. Barrett, "VHF Helicopter Antennas that Incorporate the Airframe and Reduce Rotor Modulation," *IEEE Trans. Electromagnetic Compatibility*, Vol. 42, No. 3, pp. 298–302, August 2000.

J. Richie, and T. Joda, "HF Antennas for NVIS Applications Mounted to Helicopters With Tandem Main Rotor Blades," *IEEE Trans. Electromagnetic Compatibility*, Vol. 45, No. 2, pp. 444–448, May 2003.

J. Richie, and B. R. Koch, "The Use of Side-Mounted Loop Antennas on Platforms to Obtain Nearly Omnidirectional Radiation," *IEEE Trans. on Antennas and Propagation*, Vol. 53, No. 12, pp. 3915–3919, Dec. 2005.

J. A. Black, and J. E. Richie, "UHF Propagation in the Magnetic Resonance Bore," *IEEE Antennas and Wireless Propag. Lett.*, Vol. 8, pp. 869–871, 2009.

J. Richie, "MAS Pole Location and Effective Spatial Bandwidth of the Scattered Field," *IEEE Trans. on Antennas and Propagation*, Vol 58, No. 11, pp. 3610–3615, Nov. 2010.

J. Richie, "Application of Spatial Bandwidth Concepts to MAS Pole Location for Dielectric Cylinders," *IEEE Trans. on Antennas and Propagation*, Vol. 59, No. 12, pp. 4861–4864, Dec. 2011.

J. Richie, "Generalizing Effective Spatial Bandwidth for Pole Location in MAS: The Elliptic Cylinder", *IEEE Trans. on Antennas and Propagation*, Vol. 64, No. 9, pp. 4123–4127, 2016.

J. Sidabras, J. Richie, and J. Hyde, "Axially Uniform Magnetic Field-Modulation Excitation for Electron Paramagnetic Resonance in Rectangular and Cylindrical Cavities by Slot Cutting", *Journal of Magnetic Resonance*, 274, (2017), pp 115-124.

M. Malakoutian, T. Byambadorj, B. Davaji, J. Richie, and C. H. Lee, "Optimization of the Bowtie Gap Geometry for a Maximum Electric Field Enhancement," *Plasmonics*, vol. 12, no. 2, pp. 287-292, 2017

T. Byambadorj, E. Dashtimoghadam, M. Malakoutian, B. Davaji, L. Tayebi, J. E. Richie, and C. H. Lee, "On-chip detection of gel transition temperature using a novel microthermomechanical method," *PloS one*, vol. 12, no. 8, p. e0183492, 2017.

J. E. Richie, C. Ababei, "Optimization of patch antennas via multithreaded simulated annealing based design exploration," *Journal of Computational Design and Engineering*, Volume 4, Issue 4, 2017, Pages 249-255.

B. Davaji, J. E. Richie, and C.H. Lee, "Microscale direct measurement of localized photothermal heating in tissue-mimetic hydrogels," *Scientific Reports*, Volume 9, April 2019, Article Number 6546.

(B) Book Chapters:

J. Richie, "Microwave Mathematics", Chapter 18, *Handbook of Microwave Technology, Volume II*, Ed., T. K. Ishii, Academic Press, Inc., Orlando FL, 1995.

J. Richie, "Pole Location in GMT", Chapter 9, *The Generalized Multiple Technique for Light Scattering: Recent Developments*, pp. 221 – 246, Springer International Publishing AG, Cham, Switzerland, 2018.

(C) Refereed National and International Conference Papers and Posters:

S. J. Peters, J. Richie, and H. N. Kritikos, "Spectral Estimation Techniques in Aperture Synthesis," *Benjamin Franklin Symposium Digest on Advances in Antenna and Microwave Technology*, pp. 9–11, Philadelphia PA, May 1984.

J. Richie, S. V. Parekh, and H. N. Kritikos, "Beamforming for Direct Broadcast Satellite Array Antennas," *Benjamin Franklin Symposium Digest on Advances in Antenna and Microwave Technology*, pp. 4–6, Philadelphia PA, May 1985.

J. Richie, H. N. Kritikos, and S. V. Parekh, "Beamforming for Direct Broadcast Satellite Phased Array Antennas," *AP-S International Symposium Digest*, 4 pp., Philadelphia PA, June 1986.

J. Richie, and H. N. Kritikos, "Approximate Pattern Synthesis," *Benjamin Franklin Symposium Digest on Advances in Antenna and Microwave Technology*, pp. 19–22, Cherry Hill NJ, March 1987.

J. Richie and J. Johnson, "Antenna Array Analysis Using Spherical Mode Expansions," *IEEE AP-S/URSI International Symposium Digest*, pp. 387–390, San Jose CA, June 1989.

J. C. Johnson and J. Richie, "Mutual Coupling Effects in Adaptive Antenna Arrays," *IEEE AP-S International Symposium Digest*, pp. 170–173, Dallas TX, May 1990.

J. Richie and T. Biedlingmier, "On the Coupling Between MS Antennas," *IEEE AP-S International Symposium Digest*, pp. 694–697, Dallas TX, May 1990.

J. Richie, "On the Scattering Matrix Formalism for Electromagnetic Modeling," (invited to special session), *IEEE AP-S International Symposium Digest*, pp. 56–59, Dallas TX, May 1990.

J. Richie, "A Smoothness Measure for Antenna Pattern Synthesis", *IEEE AP-S International Symposium Digest*, pp. 1604–1607, Chicago IL, July 1992.

J. Hejres, and J. Richie, "Adaptive Pattern Nulling Utilizing the Elevations of the Antenna Array Elements," *IEEE AP-S International Symposium Digest*, pp. 694–697, Ann Arbor MI, June/July 1993.

M. Tobin, and J. Richie, "A Study of Indoor Propagation: Theory and Results of the Wireless Communication System for the Space Station Freedom," *IEEE AP-S International Symposium Digest*, pp. 1065–1068, Ann Arbor MI, June/July 1993.

E. Pryor, E. Young, M. Tobin, J. Richie, and A. Moeller, "Two-Dimensional Simulation of Indoor Propagation," *Proceedings of the National Conference on Undergraduate Research*, Kalamazoo MI, April 1994.

M. Tobin, and J. Richie, "Indoor Propagation: A Statistical Approach," invited paper, *International Symposium on Electromagnetic Environments and Consequences*, Bordeaux France, May/June 1994.

M. Tobin, and J. Richie, "A 2-D Ray Tracing Model for the Characterization of Spatial and Time-Domain Properties of the Indoor Propagation Channel," *IEEE AP-S International Symposium Digest*, pp. 1948–1951, Newport Beach CA, June 1995.

F. Forest, and J. Richie, "On The Selection of Boundary Conditions as Applied to Smooth Surface Cylinder Scatterers," *IEEE AP-S International Symposium Digest*, pp. 616–619, Baltimore MD, July 1996.

J. A. Hejres, and J. Richie, "A Simple Method for Null Steering in a Circular Array by Perturbations of the Radial Locations of the Elements," *IEEE AP-S International Symposium Digest*, pp. 1138–1141, Baltimore MD, July 1996.

N. Seidl, I. Howitt, J. Richie, "Blind Adaptive Multiuser Detection for Multirate CDMA," *IEEE Vehicular Technology Conference Fall 2000*, Boston, MA, 2000.

N. Seidl, I. Howitt, J. Richie, "Blind Adaptive Linear Multiuser Detection for Variable Spreading Factor CDMA," *38th Annual Allerton Conference on Communication, Control, and Computing*, 2000.

J. Richie, B. Koch, "A Top-Mounted, Two-Loop Antenna Configuration with Nearly Omnidirectional Radiation Characteristics", *IEEE AP-S International Symposium Digest*, pp. 2353–2356, Albuquerque NM, July

2006.

J. W. Sidabras, J. E. Richie, J. S. Hyde, "Optimization of 100 kHz field modulation slot geometries to achieve uniformity for use in electron paramagnetic resonance," *49th Rocky Mountain Conference on Analytical Chem.*, Breckenridge, Colorado, July 22–26, 2007.

J.Black, J.Richie. "UHF Propagation in a Partially Filled Short Cylindrical Waveguide". *Proc Intl Soc Magn Reson Med 2009*. Honolulu, Hawaii.

Susan C. Schneider and J. E. Richie, "Development of On-Line Lecture and Preparation Resources for Electrical Engineering laboratory Courses", *Proceedings of the 121st ASEE Annual Conference and Exposition*, June 15-18, 2014, Indianapolis IN, paper ID #8664.

(D) Refereed International Abstracts

H. N. Kritikos, and J. Richie, "The Application of Group Theory to Arrays," *Proceedings of the National Radio Science Meeting (URSI)* (A), 1 pg., Philadelphia PA, June 1986.

J. Richie, "Applications of Group Theory in Scalar Diffraction and Array Theory", *URSI Radio Science Meeting Abstracts* (A), 1 pg., Chicago IL, July 1992.

C. Lloyd, J. Richie, T. Raidy, X. Feng, "Neural Network Classification of MRS using Prony's Method," poster session at *Conference of Society of Magnetic Resonance in Medicine (SMRM)*, Berlin Germany, August 1992.

K. Ibrahim, and J. Richie, "Locations and Numbers of Multipole Field Expansion," *1993 URSI Radio Science Meeting and Abstracts*, pg. 70, Ann Arbor MI, June/July 1993.

F. Forest, J. Richie, "On the Location of Expansion Centers for the Generalized Multipole Technique for Scattering from Two-Dimensional Smooth Scatterers,", *1998 URSI Radio Science Meeting* (A), pg 102, Atlanta, GA, June 1998.

(E) Unpublished Conference Presentations

K. Ibrahim, and J. Richie, "On Teaching Undergraduate Electromagnetics", presented, *1992 Meeting of the North Midwest Section of the ASEE*, Milwaukee WI, October 1992.

J. Richie, "Propagation Characteristics of Antennas Mounted to Military Vehicles,", presented, *34th Annual MIC-MUG & UTC Region 5 Conference*, Milwaukee, WI, April 2015.

(F) Poster Sessions

J. Richie, T. Barrett, "Helicopter Airframe Electromagnetics at VHF Frequencies," Seventh Annual Scientific Poster Session, The Society of Sigma Xi — Marquette Chapter, April 7, 1997.

F. Forest, J. Richie, "Understanding the Generalized Multipole Technique for Electromagnetic Scattering," Seventh Annual Scientific Poster Session, The Society of Sigma Xi — Marquette Chapter, April 7, 1997.

M. Tobin, J. Richie, "Ray Tracing Technique for Radio Indoor Propagation Time Domain Analysis," Seventh Annual Scientific Poster Session, The Society of Sigma Xi — Marquette Chapter, April 7, 1997.

M. J. Ferrer-Herrera, J. Richie, "New Concepts for Wireless Medical Telemetry," The Society of Sigma Xi — Marquette Chapter Poster Session, March 24, 2006.

M. Mneimneh, J. Richie, "The Application of Finite Difference Time Domain Method on Several Microwave Devices," The Society of Sigma Xi — Marquette Chapter Poster Session, March 24, 2006.

J. Black, J. Richie, "In-Bore Path Loss Experimentation," The Society of Sigma Xi — Marquette Chapter Poster Session, April 25, 2007.

J. Sidabras, J. Richie, J. Hyde, "A Numerical and Analytical Approach to Coupling to Waveguide Evanescent Modes," The Society of Sigma Xi — Marquette Chapter Poster Session, April 3, 2008.

J. Black, J. Richie, "UHF Propagation in a partially filled short cylindrical waveguide", The Society of Sigma Xi — Marquette Chapter Poster Session, April 2, 2009.

J. Sidabras, J. Richie, J. Hyde, "Coupling to Cavity evanescent modes with applications in EPR", The Society of Sigma Xi — Marquette Chapter Poster Session, April 2, 2009.

(G) Theses:

J. Richie, "Optimization of DBS Arrays Using Linear Programming," M.S. Thesis, University of Pennsylvania, Philadelphia, PA, 1985.

J. Richie, "Enhancements to Iterative Nonlinear Synthesis," Ph.D. Dissertation, University of Pennsylvania, Philadelphia, PA, 1988.

(H) Reports:

R. M. Showers, J. Richie, and A. Garg, Electromagnetic Environment on Non-Metallic Ships, Report MSEE-F-87-5, Contract N66604-87-C-0524, NUSC, New London, CT, September 1987.

R. M. Showers, J. Richie, and A. Garg, Electromagnetic Environment on Non-Metallic Ships II, Final Report MSEE-87-6, Prime Contract N60921-87-D-A315, Subcontract SCEEE NSWC/87-B008, NASVSEA 06D4425, October 1987.

R. M. Showers, and J. Richie, Initial Model for Conduit Ground Adapter, Final Report MSEE-87-7, Contract N66604-87-M-D266, NUSC, New London, CT, October 1987.

J. Richie, L. Bell, D.P. Harris, "Space Station Internal Propagation," Chapter LL, Final Report, NASA CR-184253, University of Alabama in Huntsville, Huntsville AL, Oct. 1991.

J. Richie, D. P. Harris, and H. Gangl, "Analysis of Waves in Space Plasma (WISP) Near Field Simulation and Experiment", Chapter XLV, Final Report, NASA CR-184505, University of Alabama in Huntsville, Huntsville AL, December 1992.

J. Richie, "On the WISP Payload Interaction with the Cargo Bay: VSWR and Near Field Simulation," NASA/University Joint Venture (JOVE) Final Report, MSFC Information and Electronic Systems Laboratory, Huntsville AL, May 7, 1993.

J. Richie, and F. Forest, "An Investigation of Multipath Effects on the GPS System During Auto-Rendezvous and Capture," NASA/University Joint Venture (JOVE) Final Report, MSFC Information and Electronic Systems Laboratory, Huntsville, AL, March 1995.

J. Richie, "High Performance Aircraft Antenna Systems to Support Digital Data Communications," Final Report, Contract No. DAAL03-91-C-0034, TCN 95-226, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, October 1995.

J. Richie, and T. Barrett "A Study of VHF Helicopter Electromagnetics: Coupling and Radiation of Simple Antennas to Achieve Communication Using the Airframe," Final Report, Contract No. DAAL03-91-C-0034, TCN 96-040, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, August 1997.

J. Richie, "UHF Antennas Mounted to Ground Vehicles," Final Report, Contract No. DAAH04-96-C-0086, TCN 97-060, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, September 1997.

J. Richie, "Tactical Radio Communication Antenna Systems," Final Report, Contract No. DAAL03-91-C-0034, TCN 98-037, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, September 1998.

J. Richie, "Reconfigurable Antennas," Final Report, Contract No. DAAH04–96–C–0086, TCN 99–043, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, September 1999.

J. Richie, and B. Koch, "Antenna Effects due to Turret Motion," Final Report, Contract No. DAAH04–96–C–0086, TCN 00–037, Scientific Services Program, U.S. Army Research Office, Research Triangle Park, NC, September 2001.

J. Richie, "Investigation of Antenna Radiation Patterns in the Presence of Rotor Modulation on AH-64D Aircraft (30–450 MHz)," Final Report, Contract No. DAAH04–96–C–0086, TCN 01-082, Scientific Services

Program, U.S. Army Research Office, Research Triangle Park, NC, October 2001.

UNIVERSITY ACTIVITIES:

(A) Committee Assignments:

EECE Department Associate Chair, 2012–present
EECE Industrial Advisory Board, 2018–present
EECE Program Advisory Committee, 2012–2018
University Academic Senate, 2013–2018, Vice Chair, 2015–2016
University Academic Senate Executive Board, 2015–2016
Search Committee, Vice Provost for Enrollment Management, 2016
University Board of Undergraduate Studies, 2006–2015, Chair 2012–2013
Undergraduate Committee, 1996–1998; 2002–present
Electrical Engineering Curriculum Coordinator, 2009–2012
Department Library Representative: 1995–present.
College of Engineering ABET Workgroup, 2005–2006, 2011–2012, 2017–2018
College of Engineering Enrollment Management Committee, 2014–present
Marquette University Chapter of Eta Kappa Nu Faculty Advisor, 1997–2006, 2008–2009, 2014–2015, 2016–present
HKN Outstanding Chapter Award, 2005-2006 academic year
Marquette University Student Chapter of IEEE Faculty Advisor, 2013–present
University Sabbatical Review Board, 1997–2004, chair, 1999–2004.
Department Awards Committee: 1998–2004.
Department of Electrical and Computer Engineering Graduate Committee, 1989–2001.
Director of Graduate Studies, 1998–2001.
University Library Board, 1996–1997.
University Patent Policy Advisory Board, 1990–1993.
Engineering Speaker's Bureau, 1990–2001.

(B) Graduate Students Directed:

James F. Kohli, M.S., 1990
Thesis: "On the Estimation of Magnetic Resonance Spectra Using Various Methods."

John C. Johnson, M.S., 1990
Thesis: "On the Mutual Coupling Effects in Adaptive Antennas."

Brian T. McEathron, M.S., 1991
Thesis: "Filtering for Increased Depth of Field for Phased Array Ultrasonic Imaging."

Charles F. Lloyd, M.S., 1992
Thesis: "Neural Network Applications in Magnetic Resonance Spectroscopy."

Francis W. Forest, M.S., 1993
Thesis: "Sidewall Characteristics of a Shielded Microstrip of Finite Thickness Using the FiniteElement Method."

Philippe Sochoux, M.S., 1994
Thesis: "Electrical Multipole Coefficients of Dipole Antennas of Various Dimensions."

Jasem A. Hejres, Ph.D., 1994
Dissertation: "Null Steering in Antenna Arrays Utilizing the Geometry of the Array Elements."

Jason Katcha, M.S., 1994
Thesis: "A Magnetic Flux Density Control System for the Birdcage Resonator"

Khaled Ibrahim, Ph.D., 1995
Dissertation: "Theory and Application of Multiple Multipole Expansion of Electromagnetic Fields."

Tony Barrett, M.S., 1997
Thesis: "Study of Electromagnetic Characteristics of Platform Antennas for Wavelengths on the Order of the Platform Size."

Francis W. Forest, Ph.D., 1998
Dissertation: "Multipole Placement Rules for the Multiple Multipole Technique."

Matthew Poskozim, M.S., 1999
Thesis: "Antennas Mounted to Small Ground Vehicle Platforms."

Tim Joda, M.S., 2000
Thesis: "Electromagnetic Characteristics from an Aircraft Antenna System in the Presence of Rotating Members"

Neal Seidl, M.S., 2000
Thesis: "Blind Adaptive Linear Multiuser Detection for Multirate CDMA Systems"

Ke Yang, M.S., 2001
Thesis: "Study of Reconfigurable Small Loop Antennas Mounted on Cylinders."

Benjamin Koch, M.S., 2002
Thesis: "Electromagnetic Characteristics of Small Loop Antennas on Rectangular Platforms."

Travis Monke, M.S., 2004
Thesis: "Magnetic Resonance RF Coil Modeling and Simulation".

Julia Klinge, M.S., 2006
Thesis: "Digital Communication Link for MR Surface Coils".

Manuel J. Ferrer Herrera, M.S., 2007
Thesis: "Frequency Re-use for Wireless Medical Telemetry".

Jennifer A. Black, Ph.D., 2009
Dissertation: "UHF Propagation in a Partially Filled Short Cylindrical Waveguide".

Joseph P. Welcenbach, M.S., 2009
Thesis: "The Dependence of the Incident Field on the Method of Moments Solution for a Scattering Problem".

John B. Lienau, M.S., 2009
Thesis: "Characterization of the Electromagnetic Fields Inside a Wire Mesh Cage for Biotelemetry".

Jason W. Sidabras, M.S., 2010
Thesis: "Coupling into Waveguide Evanascent Modes with Applications in Electron Paramagnetic Resonance".

Hermine N. Akouemo Kengmo Kenfack, M.S., 2011
Thesis: "Analysis of an Air-Spaced Patch Antenna Near 1800 MHz".

Logan J. Berens, M.S., 2012
Thesis: "Design, Analysis, and Construction of an Equal Split Wilkinson Power Divider".

John Vitale, M.S., 2012
Thesis "Hybrid Coupler Implemented as a Phase Shifter".

Mattison LeMieux, M.S., 2012
Thesis "Investigating a horizontal helical antenna for use in the phantom monopole configuration"

Phillip Bishop, M.S., 2013
Thesis "Investigating the Possible Sources of Error Using the Method of Moments to Solve a Dielectric Scattering Problem".

Tsenguun Byambadorj, M.S., 2016
Thesis "Optimization of the Bow-Tie Gap Geometry for a Maximum Electric Field Enhancement".

Amanda Jensen, M.S., 2019
Thesis "Power Divider Miniaturization with a Variable Load".

Nichoas Stave, M.S., 2019
Thesis "Analysis of BJT Colpitts Oscillators — Empirical and Mathematical Methods for Predicting Behavior".

Presently directing the research of the following Electrical and Computer Engineering graduate students: