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MARQUETTE UNIVERSITY
Opus College of Engineering

Curriculum Vitae

Kristina M. Piacsek Ropella

Address

Opus College of Engineering
Marquette University
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Fields of Specialization

Signal processing of physiologic signals
Cardiac electrophysiology
Computerized arrhythmia detection and analysis
Functional magnetic resonance brain imaging
Biomedical instrumentation
Engineering Leadership Education

Education

Ph.D. 1989 Biomedical Engineering, Northwestern University, Evanston, IL.

M.S. 1987 Biomedical Engineering, Northwestern University, Evanston, IL.

B.S.E 1985 Biomedical Engineering, Marquette University, Milwaukee, WI.

Employment History

7/2015 – present	Opus Dean, Opus College of Engineering, Marquette University
7/2014 – 6/2015	Interim Opus Dean, Opus College of Engineering, Marquette University
1/2013 – present	Executive Associate Dean, College of Engineering, Marquette University
1/2004 – 1/2013	Chair, Department of Biomedical Engineering, Marquette University, Milwaukee, WI
8/2003 - present	Professor, Department of Biomedical Engineering, Marquette University, Milwaukee, WI
8/1998 – 1/2013	Co-Director, Joint Ph.D. program in Functional Imaging, Marquette University and the Medical College of Wisconsin, Milwaukee, WI

8/1996 - 8/2003	Associate Professor, Department of Biomedical Engineering, Marquette University, Milwaukee, WI
8/1990 - 8/1996	Assistant Professor, Department of Biomedical Engineering, Marquette University, Milwaukee, WI.
1/1990 - 6/1990	Visiting Assistant Professor, Department of Biomedical Engineering, Marquette University, Milwaukee, WI.
6/1985 - 12/1989	Research Associate, Department of Cardiac Electrophysiology, Evanston Hospital, Evanston, IL.
5/1985 - 8/1985 5/1984 - 8/1984	Summer Intern, Patient Monitoring and Patient Data Management Divisions, Marquette Electronics, Inc., Milwaukee, WI.

Honors

- STEM Forward, Engineer of the Year 2016
- KEEN 2016 Outstanding Dean Award
- US Professor of the Year 2007, Wisconsin, The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support for Education
- 2008 Nora Finnigan Wera Faculty Achievement Award, Marquette University
- The Business Journal, Women of Influence Award, 2008
- Fellow, American Institute of Medical and Biological Engineering, 2003
- Marquette University College of Engineering Outstanding Teacher Award 2002
- Milwaukee Business Journal's 'Forty Under Forty', 2000
- Marquette University Robert and Mary Gettel Faculty Award for Teaching Excellence, 1996
- Marquette University College of Engineering Outstanding Teacher Award 1994
- Anthony J. Bagozzi and Rose Eannelli Bagozzi Medical Research Fellowship, 1992-2014
- National Science Foundation Graduate Fellowship, 1985-1988
- Tau Beta Pi Graduate Fellowship, 1985-1986
- Summa Cum Laude Graduate, Marquette University, 1985
- Top Scholar in Biomedical Engineering, Marquette University, 1985
- Tau Beta Pi Engineering Honor Society, 1984
- Alpha Sigma Nu Honor Society, 1984
- Alpha Eta Mu Beta Biomedical Engineering Honor Society, 1984 and 2002 (Faculty)

Professional Societies

American Institute for Medical and Biological Engineering (AIMBE)
IEEE and IEEE Engineering in Medicine and Biology (IEEE EMBS)
Biomedical Engineering Society (BMES)
Sigma Xi
American Society for Engineering Education (ASEE)

Administrative Leadership and Professional Service

National/International Service: (also see "Other Scholarly Activities" listed below)

- Board Member, New Berlin Education Foundation, Inc., 2018-present
- Workforce Development Advisory Board, NSF PATHS-UP ERC, Remote Health Technologies and Systems, Texas A&M University, 2018 – present
- Board of Trustees, Medical College of Wisconsin, 2016-present
- Board of Directors, Summit Educational Association, 2015-present
- FASEB Excellence in Science Award Committee 2013-2015
- Whitaker Program Review Committee, Whitaker International Fellows and Scholars Program, Institute of International Education, New York, NY, 2006-2011, 2014 - present
- BMES Board of Directors, 2001-2004, 2011-2014, 2016-2018 (Chair, BMES Publications Board)
- AIMBE Board of Directors, **VP-at-Large**, 2012 – 2014
- Council of Chairs in Biomedical Engineering, member 2004-2013, **Chair-elect** 2008, **Chair** 2009-2010.
- AIMBE Academic Council, member 2005-2013, **Chair** 2008-2010
- AIMBE Women's Committee, member 2005-present
- Biomedical Engineering Society (BMES), **Board of Directors** (national), 2011-2014, 2001-2004, member of publications committee (2013-present), member of Awards Committee 2011-present, **Chair**, Student Affairs Committee 2001-2004, member of Membership Committee, 2002-2005. Contributing Editor, *BMES Bulletin*, 2001-2004.
- IEEE Engineering in Medicine and Biology Society, **Administrative Committee** (international), 1995-2000. **Chair**, Ad Hoc Committee on Strategic Planning, Member of Awards, Membership, and Student Activities Committees, 1995-2000. **Chair**, Education Committee, IEEE Engineering in Medicine and Biology Society, 2001-2003.
- External Review Panel, Program in Biomedical Engineering, George Washington University, November 5-6, 2012, Washington, DC.
- External Review Panel, Department of Biomedical Engineering, The Ohio State University, March 20-22, 2013, Columbus, OH.
- External Review Panel, Department of Biomedical Engineering, Johns Hopkins University, April 17-18, 2014, Baltimore, MD.
- External Advisory Board, Department of Biomedical Engineering, University of IL-Chicago, 2013 – present, Chicago, IL
- External Advisory Board, Department of Biomedical Engineering, Georgia Tech University, 2013 – present, Atlanta, GA.
- External Advisory Board, Department of Biomedical Engineering, Duke University, 2012 – present, Durham, NC.
- External Advisory Board, Department of Biomedical Engineering, Boston University, 2009-present, Boston, MA.
- External Advisory Board, Department of Biomedical Engineering, Rice University, 2005-2008, Houston, TX.
- Early Career Translational Research Program, External Advisory Board Member, The Coulter Foundation, Miami, FL 2005-2008
- Milwaukee Chapter of IEEE EMBS, 1990-2000 (**Secretary/ Treasurer**,1990-1991, **Vice Chair**, 1991-1992, **Chair**, 1992-1993, Board Member, 1993-1997).

University Service:

- Chair, Search Committee, VP for Office of Corporate Engagement, 2018
- Member, Search Committee, VP for University Advancement, 2017
- University Leadership Council, 2014 – present
- Dean's Council , 2014- present
- Ignatian Colleagues Program – 2016-2018
- University Planning and Infrastructure Committee, 2015 – present
- Search Committee for Dean of Admissions, 2016
- Interview Committee for Director of Core of Common Studies, 2016

- Search Committee, VP for Enrollment Management, 2014
- University Committee on Teaching, 2011 – 2014
- Moderator and Panelist, Marquette Waukesha County Women's Leadership Luncheon, June 19. 2012
- Roundtable Discussion Leader, Marquette Milwaukee CIRCLES Event, May 24. 2012
- Moderator, Marquette Health Care Forum, May 7, 2012
- **Co-Director**, Translational Technologies and Research **Key Function Co-Director** and Scientific Advisory Board, CTSI, Medical College of Wisconsin, 2007-2014.
- University Student Appeals Committee, 2007- 2010
- University Foundations of Excellence Study, **Chair** of Transitions and Advising Dimension, 2008-2009
- Advisory Committee on External Scanning, 2004-2005
- University Core Committee, 2003 – 2006; **Chair**, Subcommittee on Science and Nature
- **Co-Director (with K. Donahue)**, Joint Ph.D Program in Functional Imaging, Marquette University and The Medical College of WI, 1998-2013.
- Functional Imaging Research Committee, Medical College of Wisconsin, 2002-2013
- Manresa Project, Curriculum Committee, 2001-2003
- Intellectual Property Review Board, 2001-2005
- Honors Faculty Advisory Council, 2001 – 2009
- Burke Scholar Advisor, 1995-1998, 1999-2006 (2 students)
- University Ministry Advisory Board, Marquette University, 1997-2005
- Task Force on Gender Equity, MU, 1999-2000.
- Search Committee for Director of University Ministry, MU 2000-2001
- Strategic Planning Steering Committee, Marquette University 1997-2000.
- Committee on Faculty, 1996-1999.
- Search Committee for Director of MU Child Care Center 1998
- Search Committee for University Executive Vice President, MU, 1996-1997
- Residence Life Advisory Board, Marquette University, 1995-1997
- Board of Directors, Association of Marquette University Women, 1994-1997, (**Secretary**, 1995-1996, **Vice President**, 1996-1997).
- Child Care Committee, Marquette University Child Care Center, 1992-1999.
- Marquette University Chapter of Sigma XI (**Vice President**, 1992-1993, **President** 1993-1994, Past President 1994-1995).
- Subcommittee on Faculty Welfare, 1991-1995.

College/Department Service:

- **Director,** NSF REU Summer Program in Biomedical Engineering, 2005-2007
- Freshman Introduction to Engineering Committee, 2006-2008
- College of Engineering Administrative Council, 2004-2013
- **Director,** New Program and Major in Biocomputer Engineering, 2000-2004
- College of Engineering Promotion and Tenure Committee, 2003-2004
- Engineering Foundations Task Force, 2003-2010
- Search Committee for Chair of Civil Engineering, MU, 2002-2003
- **Director** of Graduate Studies, Dept. Biomedical Engineering, Marquette University, 1997-2001
- Department of Biomedical Engineering Graduate Committee, 1990-2003
- Health Care Technology Management Internal Advisory Committee, 1998-2005
- Faculty Advisor, Engineering Floor, Tower Hall, 2001-2004
- Search Committee for Chair of Biomedical Engineering, MU, 1998-2000
- Search Committee for Dean of Engineering College, MU, 1998-1999

- Co-author, External Review, Dept. Biomedical Engineering, MU, 1998
- Department of Biomedical Engineering Undergraduate Committee, 1993-1996, 2004-present (**Chair** 2005-2006)
- College Computer Resources Committee, 1991-1996
- Planning Committee for the North Midwest Annual Conference of ASEE, 1992
- Marquette University College of Engineering Speakers Bureau, 1991-2001 (presented at over 35 high schools)
- Instructor for Marquette University Young Scholars Program, 1992
- Lecturer for Marquette University Engineering "Hands-On Mini-Course," 1991-1997

Funded Research Projects and Educational Activities

"Cardiovascular Research," funded by the Medical College of Wisconsin from 1990-1991 (PI-Ropella)

"Real-time Bivariate Analysis of Cardiac Arrhythmias," funded by the Anthony J. Bagozzi and Rose Eannelli Bagozzi Medical Research Fellowship for 1992-1995 (PI-Ropella)

"Real-time Bivariate Analysis of Cardiac Arrhythmias," funded by the Marquette University Summer Faculty Fellowship for 1993 (PI-Ropella)

"Data Compression and Arrhythmia Detection for Ambulatory Holter Monitor," funded by the Cardiac Evaluation Center, Milwaukee, WI for 2/1/94-8/31/94 (PI-Ropella)

"Examination of Tracer Response Signals from Dynamic Magnetic Resonance Images During Cerebral Transit of Gadolinium-DTPA," funded by the Marquette University Faculty Development Award for 1993-1994 (PI-Ropella)

"Development and Maintenance of Software Systems in Support of Functional MRI Research," funded by the Medical College of Wisconsin for 7/1/1994-6/30/1995 (PI-Ropella)

"Right Ventricular Function During Left Heart Bypass," funded by the Medical College of Wisconsin for 10/1/1994-12/31/1994 (PI-Ropella)

"High Performance Biomedical Computing Facility," funded by Sun Microsystems Computer Corporation for 6/12/1996 – 6/11/1996 (PI-Silver-Thorn; Co-PI-Ropella)

"Bivariate Analysis for Automated Detection of Cardiac Arrhythmias," funded by the Whitaker Foundation for 1/1/96-12/31/98 (PI-Ropella)

"Establishment of a PhD Degree Program in Functional Imaging Jointly Offered by the Biomedical Engineering Department at Marquette University and the Biophysics Program at the Medical College of Wisconsin," funded by the Whitaker Foundation for 7/1/98-6/30/99 (PI-Ropella, original PI- Dr. John Linehan, 1996-1998)

"Industry-University Cooperative Education Program for Biomedical Engineering Students at Marquette University," funded by The Whitaker Foundation for 5/7/99-4/30/2002 (PI-Ropella, Co-PI-Waples)

"Clare Boothe Luce Graduate Fellowships and Undergraduate Fellowships In Science and Engineering," funded by The Luce Foundation for 9/1/2000-8/31/2002 (PI-Ropella)

"Seminar Series on Biomedical Engineering," funded by The Stuart Brotz Foundation for 1/1/2000-12/31/2002 (PI-Ropella)

"Establishment of a Novel Curriculum in Biocomputer Engineering: An Enhancement to the Biomedical Engineering Program At Marquette University," funded by The Whitaker Foundation for 12/3/1999- 12/2/2004 (PI-Ropella)

" GAANN: Biomedical Engineering and Functional Imaging," funded by the Department of Education for 2/1/2000-8/14/2003 (PI-Ropella; Co-PI- Clough, Johnson)

"Graduate Research Fellowship Program," funded by The National Science Foundation for 8/6/2000-8/9/2003 (Graduate Student D. Jaye)

"Sorba Medical Graduate Industrial Internship," funded by Sorba Medical Systems for 9/12/2000-5/12/2000 (PI-Ropella, Gradaute Student A. Suminski)

"Myocardial Calcium Handling During and After Hypothermial Pre-anesthetic conditioning," funded by the National Institutes of Health for 6/4/2002-5/31/2003 (MU PI-Ropella)

"Neuroimaging Tools for Assessing Visual System Pathology," funded by the National Institutes of Health (R01 EY013801-03) for 5/14/2003-6/30/2005 (MU PI-Ropella)

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" GAANN: Biomedical Engineering and Functional Imaging," funded by Department of Education (#P200A030034-05) for 8/15/2005-8/14/2008 (PI-Ropella)

"Seminar Series on Biomedical Engineering," funded by The Stuart Brotz Foundation for 6/1/2003-5/31/2007 (PI-Ropella)

"Volatile Anesthetics and Cerebral Cortical Sensory Integration," funded by the National Institutes of Health (R01 GM056398-08) for 7/01/03-6/30/07 (MU PI-Ropella)

"Summer REU in Biomedical Engineering: Imaging, Modeling and Rehabilitation of Neurosystems," funded by the National Science Foundation (#0452503) for 03/01/05-2/28/08 (PI-Ropella)

"BIROW III Conference Support," funded by The Whitaker Foundation for March 11-12, 2005 (PI-Ropella)

"Functional Neuroimaging of Visual Cortex," funded by the National Institutes of Health (#R01-EB000843-12) for 9/1/2005-8/31/2007, (MU PI– Ropella)

"Bridging Research in Neurorehabilitation and Neuroimaging," funded by The Dr. Ralph and Marian Falk Medical Research Trust for 7/01/2006-6/30/2009 (PI – Ropella, Co-PI-B Schmit)

"General anesthetics and cerebral cortical sensory integration," funded by the National Institutes of Health (R01#GM056398-09A1) for 4/15/2008-1/31/2012 (MU PI-Ropella)

"Collaborative Research Integrating Neuroimaging and Neurorehabilitation: Continuing the Momentum," funded by The Dr. Ralph and Marian Falk Medical Research Trust for 12/01/2009-11/30/2013 (PI-Ropella, Co-PI – B Schmit)

"GAANN Fellowship Program in Biomedical Engineering: Functional Imaging and Rehabilitation of Neurosystems," funded by the Department of Education (# P200A070609-09) for 8/15/2007-11/15/2011 (PI – Ropella)

"Real-Time Motion Correction and Increased Scan-Session Success in Clinical MRI," funded by the National Institutes of Health, (1R01EB007827-03) for 9/15/2008-8/31/2012 (MU PI – Ropella)

" Development of Human Performance Assessment Laboratory," funded by the Alvin and Marion Birnschein Foundation for 12/8/2011-12/7/2012 (PI- Ropella)

"Collaborative Research Integrating Neuroimaging and Neurorehabilitation: Continuing the Momentum," funded by The Dr. Ralph and Marian Falk Medical Research Trust for 1/01/2013-12/30/2015 (PI-Ropella, Co-PI –B Schmit)

"E-Lead Engineering Leadership Program at Marquette University," funded by private alumni donations for 2014-present (PI-Ropella)

"Partnership in Engineering Research and Education Innovation," funded by the GHR Foundation for 7/1/2015 – 6/30/2017 (PI-Ropella)

"Kern Entrepreneurship Education Network: A KEEN Partnership," funded by The Robert D. and Patricia E. Kern Family Foundation for 8/5/2014 – 8/31/2016

"Building an Entrepreneurially Minded Ecosystem through Faculty Development, Curriculum Enhancements, and Student Enrichment Opportunities," funded by The Robert D. and Patricia E. Kern Family Foundation from 5/15/2017 – 1/30/2020 (PI-Ropella, Co-PI-Goldberg)

"Opus College of Engineering Student Success Center," funded by private alumni donations for 2018 – present (PI – Ropella)

"Thinking and Acting Differently Through the Legacy Initiative: Master's Across Boundaries," funded by the GHR Foundation for 1/1/2019 – 12/31/2023 (PI-Ropella)

Teaching Data

Courses Taught (G=Graduate, U=Undergraduate)

BIEN 1100 (001) (U): Introduction to Biomedical Engineering Methods I
BIEN 1110 (002) (U): Introduction to Biomedical Engineering Methods II
BIEN 2100 (084) (U): Statistics for Biomedical Engineering
HOPR 010 (U): The Art and Business of Science

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BIEN 187 (U/G): Principles of Biomedical Instrumentation Design
BIEN 151 (U/G): Dynamic Modeling for Biomedical Engineers
BIEN 146 (U): Senior Capstone Design (BIEN course director)
BIEN 147 (U): Senior Capstone Design (BIEN course director)
BIEN 185 (U/G): Computer Applications in Biomedical Engineering
BIEN 194 (U): Biocomputer Engineering Design Laboratory II
GEEN 2961 (U): E-Lead I: Foundations of Leadership and Individual Development
GEEN 3961 (U): E-Lead II: Leading With Others
GEEN 4961 (U): E-Lead III: Leading Technology and Innovation
BIEN 252 (G): Advanced Topics in Biomedical Computing
BIEN 250 (G): Biomedical Signal Processing
BIEN 251 (G): Advanced Biomedical Signal Processing
BIEN 252 (G): Multidimensional Biomedical Time Series Analysis
BIEN 8210 (G): Teaching Methodologies for Biomedical Engineering

Independent Study Courses (3 credits each)

BIEN 195: Total 12 Undergraduate students
BIEN 295: Total 15 Graduate students

Course Titles:
BIEN 195 (U) Nonlinear Dynamics: Application to Fibrillation

BIEN 195 (U) Parametric Approaches to Coherence Estimation
BIEN 195 (U) Measurement and Analysis of Clinical Variables
BIEN 195 (U) Bivariate Analysis of Intra-cardiac Electrograms and Surface ECG
BIEN 195 (U) Real-time Detection of Cardiac Fibrillation
BIEN 195 (U) ST and T wave changes during Cocaine administration
BIEN 195 (U) ST and Heart Rate Variability in Models of VF
BIEN 195 (U) Functional Imaging
BIEN 195 (U) Web based Biocomputer Instruction
BIEN 195 (U) MRI and MR Spectroscopy for Detection of Brain lesions
BIEN 195 (U) Anesthesia and Electrophysiology of the Brain
BIEN 295 (G) Coherence Estimation via Linear Adaptive Filters
BIEN 295 (G) Advanced Topics in Biomedical Signal Processing
BIEN 295 (G) ARMA modeling of Heart Rate Variability
BIEN 295 (G) Time Series Analysis of Functional MR Images
BIEN 295 (G) Data Compression for Implantable Devices
BIEN 295 (G) Real-time Implementation of Arrhythmia Detection
BIEN 295 (G) Topics in Automated Arrhythmia Detection
BIEN 295 (G) Engineering Approaches to Heart Failure
BIEN 295 (G) Imaging of Cerebral Blood Flow
BIEN 295 (G) Biophysics and Biochemistry of Stroke
BIEN 295 (G) Computer Applications in Functional Imaging
BIEN 295 (G) Wavelets in Biosignal Processing
BIEN 295 (G) Time-Frequency and Wavelet Analysis
BIEN 295 (G) Imaging and Electrophysiologic Study of Brain Function
BIEN 295 (G) Multidimensional Time Series Analysis for Brain Imaging Applications

BIEN 297 (G) Weekly Department Seminar Series (1997-2012)

BIEN 4920/4998 (146/147) Senior Capstone Design Project Faculty Advisor

- Heart Rate Monitoring in Race Horses Using Telemetry (sponsor: *Medical College of Wisconsin*), 1991
- SMART cards for patient monitoring applications (industrial sponsor: *Marquette Electronics, Inc*., Milwaukee, WI), 1991
- Ambulatory Blood Pressure Monitoring Using Impedance Plethysmography (industrial sponsor*: Marquette Electronics, Inc.*, Milwaukee, WI), 1993
- Motion/Position Sensing Transducer For ECG Holter Monitor (industrial sponsor: *Marquette Electronics, Inc.*, Milwaukee, WI), 1996
- Pace-pulse simulators for ECG Evaluation (industrial sponsor: *BCI International*, Waukesha, WI), 1997
- Tread Mill Control Console Design (industrial sponsor: *Marquette Medical Systems*, Milwaukee, WI). 1998
- Flow phantom for functional MRI (sponsor: *Medical College of Wisconsin*), 1999
- Respiratory Gating Device for Pediatric CT (Sponsor: *Medical College of Wisconsin*), 2000
- Magnet Monitor for MR (Sponsor: *GE Medical Systems*), 2001-2002
- Dehydration measurement device, 2001-2002
- Magnet Monitor II (Sponsor: *GE Medical Systems*), 2002-2003
- Aquameter II, 2002-2003
- Pacemaker Demo Device (Sponsor: *Medtronic Inc.*), 2003-2004
- CPR control system (Sponsor: *North Chicago VA.*), 2003-2004
- Pacemaker Demo Device II (Sponsor: *Medtronic Inc.*), 2004-2005
- Pacemaker Demo Device III (sponsor: *Medtronic Inc*.), 2005-2006
- Thermal Perfusion Test Vehicle (sponsor: *Medtronic, Inc*.) 2006-2007
- Phrenic nerve stimulator (sponsor: *Medtronic, Inc*.) 2008-2009
- Portable, low-cost 12-lead diagnostic ECG Device (sponsor: *GE Healthcare*) 2009-2010
- Device to disable arrhythmia detection in implantable ICD (sponsor: *Medtronic, Inc*) 2010-2011
- Low cost Physiologic Signal Mapping Device (sponsor: *Medtronic, Inc*) 2011-2012
- Respiration Monitor for MR environment (sponsor: *Neocoil*) 2012-2013

Continuing Education Seminar in Biomedical Engineering at GE Medical Systems, 2001 and 2002. (assisted L. Waples in creating, organizing, and implementing this continuing education seminar series for industry. Lectured the first 3 sessions.)

Continuing Education Seminar in Biomedical Engineering at Abbott Laboratories, 2002. (assisted L. Waples in creating, organizing, and implementing this continuing education seminar series for industry. Lectured the first session.)

Graduate Student Training

MS Thesis Director:

Daniel Priester	Title: "Instrumentation and Control for Micro- processor-based Coronary Perfusion System," December 1991
Frederick Sawka	Title: "A Topographic Mapping Program for EEG Coherence," May 1992

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Eric Lovett	Title: "Bispectral Analysis of Intracardiac Electrograms and Surface ECG," May 1993
Shaker Al-Alawi	Title: "Frequency Response Characterization for a Microprocessor-based Coronary Perfusion System," May 1993
Michael Querimit	Title: "Real-Time Data Compression for a Holter Monitor," December 1994
Lara Sadek	Title: "Detection of Atrial Fibrillation From the Surface Electrocardiogram Using Bivariate Analysis," August 1995
Gary Stephany	Title: "Real-time Bivariate Analysis for Use in an Implantable Device," Incomplete
Anne Roth	Title: "Modeling Tracer Response Curves From Dynamic Magnetic Resonance Imaging During Cerebral Transit of Gadolinium-DTPA," Incomplete
Ziad Saad	Title: "Retinotopic Mapping of the Visual Cortex Using Functional Magnetic Resonance Imaging," December 1996
Samhita Shahane	Title: "Bivariate Analysis for Detection of Atrial Fibrillation from Surface ECG," December 1997
Chieh-Yi Tang	Title: "Real-Time Algorithms for Detection of Cardiac Arrhythmias," December 1997
Anh Vuong	Title: "Automated Detection of Cardiac Arrhythmias Using a Single Intracardiac Lead," August 1999
Aaron Olson	Title: "Diffusion Weighted Magnetic Resonance Imaging (DW-MRI) of Early Stroke in Humans: A Comparison of Two Methods," July 2000
Ken Larson	Title: "A computer controlled, phantom flow system for use in fMRI environment," incomplete.
Amanda Potocky	Title: "An investigation of the relationship between calcium concentration and left ventricular pressure in isolated guinea pig hearts," August 2002
Michael Ellingson	Title: "Removal of the cardio-ballistic and gradient switching artifacts from EEG acquired during fMRI studies," August 2002
Angela Tomlinson	Title: "Effects of ischemia and anesthesia on variability in cardiac electrophysiology," May 2002
Deborah Jaye	Title: "The Hydrodynamic Efficiency of Left Ventricular Energy Transfer During Dual Chamber Coupled Pacing," May 2005

Ph.D. Dissertation Director:

Ziad Saad	Title: "Temporal Variability in FMRI Response to Visual Stimulation in Human Brain," May 2000

Samhita Shahane	Title: “Modeling Calcium-LVP dynamics in isolated guinnea pig hearts,” May 2003
Olga Yakubovich	Title: “ Quantifying the effects of anesthetic agents on EEG using mutlielectrode arrays,” May 2004
Michael Ellingson	Title: “Localization and Analysis of Neural Generators of Auditory Deviance Detection Using Simultaneous EEG and FMRI,” December 2005
Rachael Kirchhoff	Title: “Brain-Based Vision Deficits: Characterization and Simulation for Presurgical Planning,” May 2006
John Janik	Title: “Neuroimaging tools for assessing visual system pathology,” December 2011
Jeannette Vizuete	Title: “Functional integration in the cortical neuronal network in conscious and anesthetized animals,” December 2012
Yan Ma	Title: “Novel Paradigms for Visual Field Mapping with Functional Magnetic Resonance Imaging,” August 2013

Additional Thesis Committees (member):

35 M.S. committees
45 Ph.D. committees

Undergraduate Research Supervision (excluding independent study):

- Howard Hughes Undergraduate Research Faculty Mentor: 5 Students
- NSF Minority Undergraduate Research Faculty Mentor: 2 Students
- McNair Scholars: 2 students
- NSF REU undergraduate research mentor: 1 student

Invited Lectures

"Bivariate analysis of Cardiac Rhythms", EECE Colloquium Series,
Marquette University, March 3, 1992
"Implantable Devices for Cardiac Arrhythmias", Biomedical Engineering Society,
Marquette University, November 19, 1992
"Time Series Analysis of Cardiac Arrhythmias", MSCS Colloquium Series,
Marquette University, February 4, 1992
"Implantable Devices: A Matter of the Heart", Parent's Weekend Lecture Series,
Marquette University, October 1, 1994.
"Computer Applications in the EP Laboratory", Meet the Experts Panel Member,
NASPE 16th Annual Scientific Session, Boston, MA, May 4, 1995
"Engineering Aspects of Implantable Antiarrhythmic Devices", Tau Beta Pi Banquet,
Marquette University, November 1996

"Signal Processing and Cardiac Arrhythmias," Biophysics Institute,
Medical College of Wisconsin, Milwaukee, WI, March, 1997
"Signals From the Heart: Automated Detection of Arrhythmias," Biomedical Engineering Department Seminar Series,
Northwestern University, Evanston, IL, April 18, 1997
"Bivariate Analysis and Cardiac Arrhythmias,"
Marquette Medical Systems, Milwaukee, WI, June 17, 1997
"Automated Detection of Cardiac Arrhythmias: Signals From the Heart," Dept. Biomedical Engineering,
Marquette University, October 16, 1998
"Bivariate Analysis of Cardiac Arrhythmias," Cardiac Rhythm and Management Laboratory,
University of Alabama-Birmingham, Birmingham, AL, March, 1999
"Biomedical Engineering: New Frontiers," BMES Student Chapter Seminar Series,
Medical College of Wisconsin, September 13, 1999
"Biomedical Engineering: Challenges of the Future," McNair Scholars Program, Marquette University, July, 2000
"Real World Biomedical Engineering: Engaging the Students," The Whitaker Foundation Biomedical Engineering
Educational Summit. Leesburg, Virginia, December 2000
"Cardiac Electrophysiology and Functional Imaging of the Brain: Applications of Biomedical Signal Processing,"
AEMB/BMES Student Chapter Seminars. Marquette University, January 31, 2001
"Functional MRI of the Brain," Colloquium Series, Department of Electrical Engineering,
Marquette University, October 16, 2001
"Mending the Heart and Reading the Mind," Association of Marquette University Women, Annual Business Meeting,
Marquette University, Milwaukee Wisconsin, 2002
Commencement Speaker, Marquette University Graduation, December 2003
"Imaging Brain Function: Finding the Signal," National Association of Engineering Student Councils (NAESC) National
Conference, Marquette University, March 2004
"Functional MR Imaging and EEG Analysis of Brain Function: Signal Processing Challenges,"
Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, September 2004
"Career and Time Management," Panel Member, Committee on Research first annual institute for faculty,
Marquette University, January 2005
"Functional MR Imaging and EEG Analysis of Brain Function: Signal Processing Challenges and Clinical Application,"
Department of Biomedical Engineering, Boston University, Boston, MA, February 2005
"Cooperative Education: Building University-Industry Partnerships in Biomedical Engineering,"
Whitaker Education Summit, Landsdowne, VA, March 2005
"Signal Processing Challenges for Extracting Information from fMRI and EEG Analysis of Brain Function," The
Integrative Neuroscience Research Center Seminar, Marquette University, June 2005
"Functional Neuroimaging," Department of Biomedical Engineering, Case Western University, Cleveland, OH, October
2006
"Open Discussion on Women in Science and Technology," Academic Careers in Engineering and Science (ACES)
Lectureship, Case Western Reserve University, October 27, 2005
"Functional MRI and EEG Analysis of Brain Function," Design of Medical Devices Conference, Minneapolis, MN, April
2006
"Functional MR Imaging and EEG Analysis of Brain Function," Department of Biomedical Engineering,
University of Wisconsin, Keynote for BMES Spring Banquet, May 2006.
"Functional Imaging of the Brain," Minnesota Club of Marquette University Alumni, Minneapolis, MN, April 2008
"Functional MR Brain Imaging: Moving from Basic Science to Clinical Application," Department of Biomedical
Engineering, UC Irvine, Irvine, CA October 2009
"Bringing Technology to Life: Our Journey to the Future," Keynote Address, GE Healthcare Technology Symposium,
Milwaukee, WI, September 21, 2010
"Technology and Healthcare: Engineering for Life," Middle School STEM Day for Girls, Keynote Speaker,
Visitation School, Mendota Heights, MN, October 29, 2011

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"Functional Neuroimaging Using MR: Moving From Basic Research to Clinical Application ," Department of Biomedical Engineering, UC Davis, Davis, CA May 2012

"Functional Neuroimaging Using MR: Moving From Basic Research to Clinical Application ," Department of Biomedical Engineering, Texas A&M, College Station, TX, April 2013

"Functional Neuroimaging: Moving From Basic Research to Clinical Application," Keynote Address, Department of Biomedical Engineering Annual Research Symposium, Northwestern University, Evanston, IL, May 29, 2014

Keynote, Women's Leadership Alliance annual meeting, Brady Corporation, Milwaukee, April 2015

Other Scholarly Activities

- Technical Reviewer for:
  IEEE Transactions on Biomedical Engineering.
  Annals of Biomedical Engineering.
  American Journal of Physiology
  Biotechnology Progress

- Editorial Board:
  IEEE Book Press, Biomedical Engineering Series (M. Akay, Editor)

- Book Reviews (total 9):

  IEEE Book Press
  McGraw-Hill
  CRC Press
  Whitaker Foundation Textbook Materials

- Conference Session Chair:

  - "Pacemakers and Implantable Devices,"
    IEEE Engineering in Medicine and Biology Annual International Conference, Orlando Florida, 1991
  - "ECG Data Compression,"
    Computers in Cardiology, Durham, NC, 1992
  - "Time-Frequency Analysis,"
    IEEE Engineering in Medicine and Biology Annual International Conference, Montreal, Canada, 1995
  - "Atrial Signals,"
    Computers in Cardiology, Cleveland, Ohio, 1998
  - "Cooperative Education and Internships,"
    Joint BMES-EMBS Conference, Atlanta, GA, 1999
  - "Education and Industry: Effective Infrastructure,"
    2000 Annual Meeting of the ASEE, St. Louis, MO, 2000
  - 'Signal Processing Education,"
    2000 World Congress Medical Physics and Biomedical Engineering, Chicago, IL, 2000
  - "Variability in Biological Signals I,"
    2000 World Congress Medical Physics and Biomedical Engineering, Chicago, IL, 2000
  - "Vasculature Imaging,"

2000 Annual Fall Meeting of the Biomedical Engineering Society, Seattle, WA, 2000

- "BMES Chapter Development Workshop,"
  2001 Annual Fall Meeting of the Biomedical Engineering Society, Durham, NC, 2001
- "BME Education and Industry,"
  2002 Joint Meeting of the BMES/IEEE EMBS Societies, Houston, TX, 2002
- "Statistical Biosignal Analysis I,"
  2002 Joint Meeting of the BMES/IEEE EMBS Societies, Houston, TX, 2002"BMES Chapter Development Workshops (I and II)," 2002 Joint Meeting of the BMES/IEEE EMBS Societies, Houston, TX, 2002
- "BMES Chapter Development Workshops (I and II),"
  2003 Annual Meeting of the BMES Society, Nashville, TN, 2003
- "Biomedical Imaging Education,"
  Whitaker Biomedical Engineering Education Summit II, Landsdowne, VA, March 2005
- "Innovations in BME Pedagogy II,"
  2006 Annual Meeting of the Biomedical Engineering Society
- "Medical Device Panel,"
  Third Education Summit on Biomedical Engineering, Chicago, IL, June 2008
- "Undergraduate Research I and II," 2014 Annual Meeting of the Biomedical Engineering Society, San Antonio, TX, October 2014

- <u>Invited Review Panel Participant:</u>

  - Biomedical Research Technology Special Emphasis Panel, NIH-NCRR, Rockville, MD, May, 1997
  - Site Visit Team, NSF Program for Engineering Resource Centers, Baltimore, MD, February, 1998
  - Biomedical Engineering and Research to Aid Persons with Disabilities CAREER/IIA Panel, NSF, Arlington, VA, 1999
  - Whitaker Foundation Graduate Fellowship Review Panel, Washington, D.C., 2001 and 2002 and 2003
  - External Advisory Board for Department of Bioengineering, Rice University, Houston, TX, 2005 to 2008
  - American Heart Association Bioengineering & Biotechnology 1 Grant Review Panel, Chicago, IL, April 2005
  - Early Career Translational Research Program, Young Investigator Review Panel, The Coulter Foundation, Miami, FL, 2005 - 2008
  - Whitaker Program Review Committee, Whitaker International Fellows and Scholars Program, Institute of International Education, 2006-2012
  - Center for Scientific Review Special Emphasis Review panel. BRDG-SPAN and Catalyst ARRA Review Panel 2, Bethesda, MD, November 2009
  - US Professor of The Year, The Carnegie Foundation for the Advancement of Teaching and Council for Advancement and Support of Education, 2010, 2011
  - NIH R03 Indo-US Collaborative Program on Low-Cost Medical Devices. Internet-Assisted Meeting (IAM meeting), June 8 - 9, 2011
  - NIH SBIR Review Panel, ZRG1 CVRS-B (10), Cardiovascular Sciences. Chicago, IL. July 7-8, 2011
  - NIH R03 Indo-US Collaborative Program on Low-Cost Medical Devices. Internet-Assisted Meeting (IAM meeting), October 19-20, **Chair**, 2011
  - Clinical Research Scholars Program, Medical College of Wisconsin, 2009, 2010, 2011
  - CTSI Pilot Awards, Medical College of Wisconsin, 2009, 2010, 2011
  - CTSI K12 Scholars Review Panel, **Chair,** 2010, 2011, 2012, 2013, 2014, 2015
  - FASEB Excellence in Science Award Committee, 2013-2015
  - Whitaker Program Review Committee, Whitaker International Fellows and Scholars Program, Institute of

International Education, 2014-present

- NIH SBIR Review Panel, ZRG1-CVRS (10) B, Small Business: Cardiovascular Sciences, San Francisco, CA, July 17-18, 2014

- Conference and seminar planning:

  - Planned, organized and implemented Departmental Weekly Seminar Series, 1997-2002. (Included making travel arrangements, planning itinerary and personally hosting over 35 visiting professors during '98-'01 academic years)
  - Organized MU Department of Biomedical Engineering Physiologic Signals and Signal Processing Seminar, 1991-1992
  - Planning Committee for the Annual Great Lakes Biomedical Engineering Conference, 1990-1996 (**Chair**, 1993)
  - Technical Reviewer, Student Paper Competition, Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 1996-1999
  - Invited reviewer, 2000 World Congress on Biomedical Engineering and Biophysics, Signal Processing Track
  - **Theme Track Chair** (Education and Professional Activities), First Joint Meeting of BMES and EMBS, October, 1999
  - **Organizing Committee**, Computers in Cardiology 2004, Chicago, IL Social Chair
  - **Track Chair**, "BME in Society and Industry," 2004 Annual Meeting of the BMES Society, Philadelphia, PA
  - **Program Co-Chair**, "Biomedical Imaging Research Opportunities Workshop III (BIROW III)," Bethesda, MD, March 2005
  - **Track Chair,** "Undergraduate Research," BMES Annual Meeting 2014, San Antonio, TX

Scholarly Works (underline denotes graduate students)

Refereed Journal Publications

1. **Ropella KM**, Sahakian AV, Baerman JM, Swiryn S. Effects of Procainamide on Intra-atrial Electrograms During Atrial Fibrillation: Implications for Detection Algorithms. *Circulation* 77:1047-1054, 1988
2. **Ropella KM**, Sahakian AV, Baerman JM, Swiryn S. The Coherence Spectrum: A Quantitative Discriminator of Fibrillatory and Non-fibrillatory Cardiac Rhythms. *Circulation* 80:112-119, 1989
3. Baerman JM**, Ropella KM**, Sahakian AV, Kirsh JA, Swiryn S. Effect of Bipole Configuration on Atrial Electrograms During Atrial Fibrillation. *PACE* 13:78-87, 1990
4. **Ropella KM**, Baerman JM, Sahakian AV, Swiryn S. Differentiation of Ventricular Tachyarrhythmias. *Circulation* 82:2035-2043, 1990
5. Sahakian AV, **Ropella KM**, Baerman JM, Swiryn S. Measuring the Organization of Cardiac Rhythms Using the Magnitude-squared Coherence Function. *IEEE Eng Med Biol Magazine* 9:25-28, 1990
6. Gerstenfeld EP, Sahakian AV, Baerman JM, **Ropella KM**, Swiryn S. Detection of Changes in Atrial Endocardial Activation with Use of an Orthogonal Catheter. *J Amer Coll Cardiol* 18:1034-1042, 1991
7. Sahakian AV, **Ropella KM**, Swiryn S. Atrial Electrograms and the Characterization of Atrial Fibrillation. *J Electrocardiology* 24:131-133, 1992
8. Sih HJ, **Ropella KM**, Swiryn S, Gerstenfeld EP, Sahakian AV. Observations From Intra-Atrial Recordings on the Termination of Electrically Induced Atrial Fibrillation in Humans. *PACE*. 17:1231-1242, 1994
9. Lovett EG, **Ropella KM**. Time-Frequency Coherence Analysis of Atrial Fibrillation Termination During Procainamide Administration. *Annals of Biomedical Engineering.* 25:975-984, 1997
10. Saad ZS, Jaeckel JR, Becker YZ, Kuemmel DA, Satanovsky A, **Ropella K**. Design of a randomized tining rake for portland cement concrete pavements using spectral analysis. *Transportation Research Record*. No. 1702: 63-68, 2000
11. Saad ZS, **Ropella KM**, Cox R, DeYoe EA. Analysis and Use of FMRI Response Delays. *Human Brain Mapping*. 13:74-93, 2001

12. **Ropella KM**. Frequency domain analysis of endocardial elecrograms. *Annals of the Istituto Superiore di Sanità* 37: 351-359, 2001
13. Sarraf LE, Roth JA, **Ropella KM**. Differentiation of Atrial Arrhythmias from the Surface Electrocardiogram Using Coherence Spectra. *J Electrocardiography*. 35(1):59-67, 2002
14. Enderle JD, **Ropella KM**, Kelso DM , Hallowell B. Preparing Biomedical Engineers for Real-World Problem Solving. IEEE Eng Med Biol Magazine. 21: 59-66, 2002
15. Tümer B, Belfore II, LA, **Ropella, KM**. A syntactic methodology for automatic diagnosis by analysis of continuous time measurements using hierarchical signal representations. *IEEE Transactions on Systems, Man, Cybernetics,Part B: Cybernetics.* 33: 951-965**,** 2003
16. Saad ZS, DeYoe EA, **Ropella KM**. Estimation of FMRI Response Delays. *Neuroimage*. 18: 494-504, 2003
17. Saad ZS, **Ropella KM**, DeYoe EA, Bandettini P. The Spatial Extent of BOLD Response. *Neuroimage.* 18:494-504, 2003
18. Rhodes SS, **Ropella KM**, Audi S, Camara, AKS, Kevin LG, Pagel PS, Stowe DF. Cross-Bridge Kinectics Modeled From Myoplasmic Calcium and LV Pressure at 17 C, and After 37 C and 17 C Ischemia. *Amer J Physiology: Heart and Circulatory Physiology*. 284:H1217-H1229, 2003
19. Rhodes SS, **Ropella KM**, Camara, AKS, Chen Q, Riess ML, Stowe DF. How Inotropic Drugs Alter Dynamic and Static Indices of Cyclic Myoplasmic Calcium to Contractility Relationship in Intact Hearts. *J Cardiovascular Pharmacology***,** 42(4):539-53, 2003
20. Liebenthal E, Ellingson ML, Spanaki MV, Prieto TE, **Ropella KM**, Binder JR. Simultaneous ERP and FMRI of the auditory cortex in a passive oddball paradigm. *NeuroImage,* 19:1395-1404, 2003
21. Imas O.A., **Ropella KM**, Wood JD, Hudetz AG. Halothane Augments Event-Related Gamma Oscillations in Rat Visual Cortex. *Neuroscience*, 123:269-278, 2004
22. Waples LM, **Ropella KM**. University-Industry Partnerships in Biomedical Engineering. Building Cooperative Education and Industrial Internships for Real-World BME Experience. *IEEE EMBS Magazine*, 22: 118-121, 2003
23. Ellingson M, Liebenthal E, Spanaki MV, Prieto TE, Binder JR, **Ropella KM**. Reduction of Ballistocardiogram Artifact in the Simultaneous Acquisition of Auditory Event-Related Potentials and Functional Magnetic Resonance Images. *NeuroImage*. *22(4):1534-42, 2004*
24. Imas OA, **Ropella KM**, Ward BD, Wood JD, Hudetz AG. Volatile anesthetics enhance flash-induced gamma oscillations in rat visual cortex. *Anesthesiology*. 102(5): 937-947, 2005.
25. Imas OA, **Ropella KM**, Ward BD, Wood JD, Hudetz AG. Volatile anesthetics disrupt frontal-posterior recurrent information transfer at gamma frequencies in the rat. *Neuroscience Letters.* 387: 145-150, 2005
26. Paschal CB, Nightingale KR, **Ropella KM.** Undergraduate Biomedical Imaging Education. *Annals of Biomedical Engineering.* 34: 232-238, 2006
27. Rhodes SS, **Ropella KM**, Camara AKS, Chen Q, Riess ML, Pagel PS, Stowe DF. Ischemia-reperfusion injury changes the dynamics of Ca2+ -contraction coupling due to isotropic drugs in isolated hearts. J Appl Physiol 100: 940-950, 2006
28**.** Rhodes SS, Camara AKS, **Ropella KM**, Audi SH, Riess ML, Pagel PS, Stowe DF. Ischemia reperfusion dysfunction changes model-estimated kinetics of myofilament interaction due to inotropic drugs in isolated hearts. BioMedical Engineering OnLine 5:16-30, 2006
29. Imas OA, **Ropella KM**, Wood JD, Hudetz AG. Isoflurane disrupts anterio-posterior phase synchronization of flash-induced field potentials in the rat. *Neuroscience Letters.* 402(3): 216-21, 2006
30. Fijalkowksi, RJ, **Ropella, KM**, Stemper BD. Determination of Low-Pass Filter Cutoff Frequencies for High-Rate Biomechanical Signals Obtained Using Videographic Analysis. *Journal of Biomechanical Engineering*. 131:054502, 2009. PMID 19388786
31. Vizuete JA , Pillay S, McCallum JB , **Ropella KM** , Hudetz AG . Cross-correlogram analysis reveals state-dependent neuronal connectivity in the rat cerebral cortex. *British Journal of Anaesthesia*. 108 (2) 365P-366, FEB 2012
32. Vizuete JA**,** Pillay S, Diba K, **Ropella KM**, Hudetz, AG. Monosynaptic functional connectivity in cerebral cortex during wakefulness and under graded levels of anesthesia. *Frontiers in Integrative Neuroscience. (2012)* 6:90. 2012.

doi:10.3389/fnint.2012.00090

33. Yan, M, Ward, BD, **Ropella KM**, DeYoe, EA.Comparison of Randomized Multifocal Mapping and Temporal Phase Mapping of Visual Cortex for Clinical Use, *NeuroImage: Clinical* (2013), pp. 143-154 DOI information: 10.1016/j.nicl.2013.08.004
34. JA Vizuette, S Pillay, **KM Ropella**, AG Hudetz. Graded Defragmentation Of Cortical Neuronal Firing During Recovery Of Consciousness In Rats. *Neuroscience*. (2014) 275: 340-351, DOI:10.1016/j.neuroscience.2014.06.018 PMID: 24952333

Invited Journal Paper

Ropella, Kristina M. "What if the Patient Dies?." Conversations on Jesuit Higher Education 35.1 (2009): 14

Refereed Conference Proceedings

1. Sahakian A, **Ropella K**, Baerman J, Swiryn S. Coherence Measures of Cardiac Arrhythmias from Intra-cardiac and Epicardial Leads. *Proc Computers in Cardiology*, pp.329-332, 1988
2. Sahakian A, **Ropella K**, Baerman J, Swiryn S. Median Frequency and Coherence Measures of Atrial and Ventricular Fibrillation. *Proc. IEEE Eng Med Biol Society* 10:16-17, 1988. Presented at IEEE Engineering in Medicine and Biology Society 10th Annual International Conference, 1988, Boston, MA
3. **Ropella KM**, Sahakian AV, Baerman JM, Swiryn S. Effect of Data Segmentation on Coherence Estimates of Cardiac Rhythms. *Proc. IEEE Eng Med Biol Society* 11:16-17, 1989. Presented at IEEE Engineering in Medicine and Biology Society 11th Annual International Conference, 1989, Seattle, WA
4. Sahakian A, **Ropella K**, Baerman J, Swiryn S. Adaptive Coherence Estimation on Brief Intracardiac Recordings. *Proc. IEEE Eng Med Biol Society* 11:224-225, 1989. Presented at IEEE Engineering in Medicine and Biology Society 11th Annual International Conference, 1989, Seattle, WA
5. **Ropella KM**, Sahakian AV, Baerman JB, Swiryn S. Coherence Estimation from a Single Intra-cardiac Lead with Two Electrode Elements. *Proc. IEEE Eng Med Biol Society* 12:586-587, 1990. Presented at IEEE Engineering in Medicine and Biology Society 12th Annual International Conference, 1990, Philadelphia, PA
6. Abu-Faraj Z, **Ropella KM**, Myklebust J, Goldstein M. Characterization of the Electroencephalogram as a Chaotic Time Series. *Proc. IEEE Eng Med Biol Society* 13:4-5, 1991. Presented at IEEE Engineering in Medicine and Biology Society 13th Annual International Conference, 1991, Orlando, FL
7. Ramadan Z, **Ropella KM**, Myklebust J, Goldstein M, Feng X, Flynn J. A Neural Network to Discriminate Between Dyslexic Subtypes. *Proc. IEEE Eng Med Biol Society* 13:1405-1406, 1991. Presented at IEEE Engineering in Medicine and Biology Society 13th Annual International Conference, 1991, Orlando, FL
8. Lovett EG, **Ropella KM**. Autoregressive Spectral Analysis of Intra-cardiac Electrograms: Comparison to Fourier Analysis. *Proc. Comp in Cardiol* 1:503-506, 1992. Presented at Computers in Cardiology, 1992, Durham, NC
9. Stephany GR, Jr., **Ropella KM**. Real-time estimation of Magnitude-squared Coherence for Use in Implantable Devices. *Proc. Comp in Cardiol* 1:375-378, 1992. Presented at Computers in Cardiology, 1992, Durham, NC
10. Lovett EG, **Ropella KM**. Bispectral Analysis of Intracardiac Electrograms. *Proc. IEEE Signal Processing Workshop on Higher-Order Statistics.* 1:366-368, 1993. Presented at IEEE Signal Processing Workshop on Higher-Order Statistics, 1993, South Lake Tahoe, CA
11. **Ropella KM**, Lovett EG. Parametric Approaches to Coherence Estimation for Intracardiac Electrograms. *Proc. IEEE Eng Med Biol Society*. 15:707-708, 1993. Presented at IEEE Engineering in Medicine and Biology Society 15th Annual International Conference, 1993, San Diego, CA
12. Lovett EG, **Ropella KM**. Discrimination of Ventricular Arrhythmias from Surface ECG via Mean Magnitude-squared Autobicoherence. *Proc. IEEE Eng Med Biol Society*. 2:721-722, 1993. Presented at IEEE Engineering in Medicine and Biology Society 15th Annual International Conference, 1993, San Diego, CA
13. Cochran J, Weigle C, Palmisano B, **Ropella K**. Effects of Halothane and Atropine on Heart Variability in Pediatric Subjects. *Proc. Comp in Cardiol* 1:369-371, 1994. Presented at Computers in Cardiology, 1994, Bethesda, MD.

14. Slocum JE, **Ropella KM**. Correspondence Between the Frequency Domain Characteristics of Simultaneous Surface and Intra-Atrial Recordings of Atrial Fibrillation. *Proc. Comp in Cardiol* 1:781-783, 1994. Presented at Computers in Cardiology, 1994, Bethesda, MD.
15. Sadek LE, **Ropella KM**. Detection of Atrial Fibrillation From Surface ECG using Magnitude-Squared Coherence. *Proc. IEEE Eng Med Biol Society*. 17:1-4, 1995. Presented at IEEE Engineering in Medicine and Biology Society 17th Annual International Conference, 1995, Montreal, Canada.
16. Tang CY, **Ropella KM**, Roth JA. Discrimination of Fibrillatory Rhythms from Intracardiac Electrograms Using Real-Time Magnitude-Squared Coherence. *Proc. Comp in Cardiol* 1:549-552, 1996. Presented at Computers in Cardiology, 1996, Indianapolis, IN
17. Shahane SD**, Ropella KM**, Roth JA. Comparison of Bivariate and Contextual Analysis in Discrimination of Atrial Fibrillation from Surface Electrocardiogram. *Proc. Comp in Cardiol* 1:441-444, 1996. Presented at Computers in Cardiology, 1996, Indianapolis, IN
18. Saad ZS, DeYoe EA, **Ropella KM**. Time Delay Estimates of FMRI Signals: Efficient Algorithm and Estimate Variance. *Proc. IEEE Eng Med Biol Society*. 19:1-4, 1997. Presented at IEEE Engineering in Medicine and Biology Society 17th Annual International Conference, 1997, Chicago, IL

19. **Ropella KM**, Waples L. A Novel Curriculum to Prepare Undergraduate Biomedical Engineers for Industrial Opportunities. *Proc First Joint BMES-EMBS Conference*. (CD-ROM, p. 1255) 1999. Presented at the First Joint BMES-EMBS Conference, 1999, Atlanta, GA
20. Waples LM, **Ropella KM**. The biomedical engineering cooperative education/internship program at Marquette University. *Proc First Joint BMES-EMBS Conference*. (CD-ROM, p. 322) 1999. Presented at the First Joint BMES-EMBS Conference, 1999, Atlanta, GA
21. Voung AN, Saad ZS, Roth JA, **Ropella KM**. Effect of Data Segmentation and Windowing on the Differentiation of Fibrillatory Rhythms from Nonfibrillatory Rhythms Using Magnitude-Squared Coherence. *Proc First Joint BMES-EMBS Conference*. (CD-ROM, p. 322) 1999. Presented at the First Joint BMES-EMBS Conference, 1999, Atlanta, GA
22. **Ropella KM,** Waples LM, Jeutter DC. Graduate Industrial Internships in Biomedical Engineering at Marquette University **.** *Proceedings of the 2000 Annual Conference of the American Society for Engineering Education* (CD ROM) 2000. 4 pgs. Presented at the Annual ASEE Conference, 2000, St. Louis, MO
23. **Ropella KM**, Kelso DM, Enderle J. Preparing Biomedical Engineers for Real-World Problem-Solving Across the Curriculum. *Proceedings of the 2001 Annual Conference of the American Society for Engineering Education (CD ROM) 2001,* 6 pgs. Presented at the Annual ASEE Conference, June 2001, Alberquerque, NM
24. Enderle J, Kelso DM, **Ropella KM**. Preparing Biomedical Engineers for Real-World Problem-Solving Across the Curriculum. *Proceedings of the 2001 Annual Conference of the American Society for Engineering Education (CD ROM) 2001,* 6 pgs. Presented at the Annual ASEE Conference, June 2001, Alberquerque, NM
25. Roberts FM, Povinelli RJ, **Ropella KM**. Identification of ECG Arrhythmias using Phase Space Reconstruction. *Proceedings of the 5th European Conference on Principles and Practice of Knowledge Discovery in Databases*. 9 pgs. Presented at the 5th European Conference on Principles and Practice of Knowledge Discovery in Databases, September 2001, Freiburg, Germany
26. Roberts, FM, Povinelli RJ, Johnson M, **Ropella KM**. Are Nonlinear Ventricular Arrhythmia Characteristics Lost As Signal Duration Decreases? *Computers in Cardiology 2002.* Pp 221-224. Presented at Computers in Cardiology, 2002, Nashville, TN
27. Rhodes SS, Audi S, Stowe DF, Camara AK, Kevin L, **Ropella K.** Modeling the cyclic relationship between myoplasmic [ca^{2+}] and isovolumic LVP in guinea-pig intact hearts. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.252- 253, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX
28. Imas O, **Ropella KM,** AG Hudetz. Quantifying Dose-dependent changes in visual flash-induced evoked response during halothan and Isolfluran Anestheisa. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.110-111, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX

29. Ellingson ML, Leibenthal E, Spanaki MV, Prieto TE, Binder JR, **Ropella KM**. Reduction of Ballistocardiogram Artifact in the Simultaneous Acquisition of Auditory Event-related Potentials and Functional Magnetic Resonance Images. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.159- 160, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX
30. Suminski A, **Ropella KM**, Scheidt R. A Pneumatically Actuated Manipulandum for Neuromotor Control Research. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.2347- 2348, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX
31. **Ropella KM**, Waples L. Biomedical Engineering Continuing Education Courses Tailored for Industry. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.2630- 2631, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX
32. Scheidt RA, Waples L, **Ropella KM**. Reengineering Biomedical Engineering Curricula: A New Product Development Approach. *Proceedings of the Second Joint EMBS/BMES Conference*. Pp.2628- 2629, 2002. Presented at the 2nd Joint Conference of the BMES-IEEE EMBS Societies, 2002, Houston, TX
33. Kirchhoff RA, **Ropella KM**, DeYoe EA. A Visual Defect Simulator for Pre-Surgical Planning. *Proceedings of the 2004 Biomedical Engineering Society Annual Fall Meeting*, 2004. Presented at the 2004 Biomedical Engineering Society Annual Fall Meeting, Philadelphia, PA
34. Trevey, K.A., Gorman, A.L., Ropella, K.M. (2015, June), Implementation of an Undergraduate Engineering Curriculum to Prepare 21st Century Leaders, Paper presented at *2015 ASEE Annual Conference and Exposition*, Seattle, WA. 10.18260/p.24243 (12 pages)

Invited Conference Papers

Enderle JD, Kelso DM, **Ropella KM**. Preparing Biomedical Engineers for Real-World Problem-Solving. *Proceedings of The Whitaker Foundation Biomedical Engineering Educational Summit*. Leesburg, Virginia 2000

Paschal CB, Nightingale KR, **Ropella KM**. Undergraduate Biomedical Imaging Education. *Proceedings of The Whitaker Foundation Biomedical Engineering Educational Summit II*, Leesburg, Virginia, 2005

Refereed Conference Abstracts

1. **Ropella K**, Sahakian A, Swiryn S. Effect of Procainamide on Atrial Electrograms During Atrial Fibrillation: Potential Drug-Device Interaction. *J Amer Coll Cardiology* 11:165A, 1988. Presented at American College of Cardiology 37th annual scientific session, 1988, Atlanta, GA.
2. **Ropella K**, Sahakian A, Baerman J, Swiryn S. Discrimination of Fibrillatory from Non-fibrillatory Rhythms: Coherence Spectra. *PACE* 11:485, 1988. Presented at The North American Society of Pacing and Electrophysiology 9th annual scientific session, 1988, Los Angeles, CA
3. Baerman JM, **Ropella KM**, Sahakian AV, Kirsh JA, Swiryn S. Effect of Bipolar Catheter Configuration on Electrogram Morphology During Atrial Fibrillation. *PACE* 12:661, 1989. Presented at The North American Society of Pacing and Electrophysiology 10th annual scientific session, 1989, Toronto, Canada
4. Kirsh JA, Sahakian AV, Baerman JM, **Ropella KM**, Swiryn S. Physiologic Significance of Electrogram Signal Characteristics During Atrial Fibrillation: Simulated Electrograms in a Computer Model. *PACE* 12:657, 1989. Presented at The North American Society of Pacing and Electrophysiology 10th annual scientific session, 1989, Toronto, Canada
5. **Ropella KM**, Sahakian AV, Baerman JM, Swiryn S. Differentiation of Ventricular Arrhythmias for an Implantable Device. *PACE* 13:537, 1990. Presented at The North American Society of Pacing and Electrophysiology 11th annual scientific session, 1990, San Diego, CA
6. Sawka F, Presberg K, Dawson C, Rickaby D, Ropella K, Linehan J. Use of signal-processing techniques to aid analysis of invivo pulmonary arterial-occlusion (pao) curves by exponential fitting functions. In *FASEB journal* (vol.

6, no. 5, pp. A2044-a2044), 1992

7. Saad ZS**, Ropella KM**, DeYoe EA. Temporal Phase Variation of FMR Signals in Vasculature Versus Parenchyma. *Proceedings of the International Society for Magnetic Resonance in Medicine* 3:1834, 1996. Presented at the International Society for Magnetic Resonance in Medicine Fourth Scientific Meeting 1996, New York, NY
8. Saad ZS, **Ropella KM**, DeYoe EA. Estimating Temporal Phase Variance in FMRI Time Courses. *Proceedings of the International Society for Magnetic Resonance in Medicine* 1:1674, 1997. Presented at the International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting 1997, Vancouver, B.C., Canada
9. Saad ZS, DeYoe EA , **Ropella KM**. High Resolution Time Delay Estimation of FMRI Signals using the Hilbert Transform. *Proceedings of the International Society for Magnetic Resonance in Medicine* 1:1673, 1997. Presented at the International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting 1997, Vancouver, B.C., Canada
10. **Ropella KM**, Vuong AV, Shahane SD, Roth RA. Differentiation of Ventricular Arrhythmias From a Single Transvenous Lead With Two Electrode Elements: Coherence Between Bipole and Unipole.*J Amer Coll Cardiology*. 31:(Suppl A) 294A, 1998. Presented at the Scientific Sessions of the American College of Cardiology 1998, Atlanta, GA
11. Vuong AN, Saad ZS, Roth JA, **Ropella KM**. Differentiation of Fibrillatory Rhythms from Nonfibrillatory Rhythms: Coherence Spectra From a Single Lead with Two Electrode Elements. *PACE*. 22:721, 1999. Presented at the 20th Annual Scientific Sessions of the North American Society of Pacing and Clinical Electrophysiology 1999, Toronto, Canada
12. Saad ZS, DeYoe EA, **Ropella KM**. Variation in FMRI Activation Delays: Methodological or Physiological? *Proc. 5th International Conference on Functional Mapping of the Human Brain*, 1999, Dusseldorf, Germany
13. Saad ZS, **Ropella KM**, DeYoe EA. On the Estimation of Neural Latencies with FMRI. *Proc. Society for Neuroscience*, 25: 1549, 1999. Presented at the 29th Annual Meeting of the Society for Neuroscience 1999, Miami Beach, FL
14. Saad ZS, DeYoe EA, **Ropella KM.** A model of temporal and spatial variability of FMRI activation delays. *Proc. 8th Scientific Meeting ISMRM*. Pp. 982, Presented at the International Society for Magnetic Resonance in Medicine Eigth Scientific Meeting 2000, Denver, CO
15. Saad ZS, DeYoe EA, **Ropella KM**. Estimation of FMRI Response Delays: Impact of Spectral Leakage and Time Delay Bias. *Annals of Biomedical Engineering*. 28(suppl 1): S-43, 2000. Presented at the 2000 Annual Fall Meeting of the BMES Society 2000, Seattle, WA
16. Cobb M, Jeutter DC, Kidder, S, **Ropella KM**, Baseline Wander Removal Using Holter ECG Signals. . *Annals of Biomedical Engineering*. 28(suppl 1): S-56, 2000. Presented at the 2000 Annual Fall Meeting of the BMES Society 2000, Seattle, WA
17. Saad ZS, Lewis JW, **Ropella KM**, DeYoe EA. Delay of FMRI response in blood vessels versus parenchyma. *Proc. Society for Neuroscience 30th Annual Meeting. p. 821*. Presented at the 30th Annual Meeting of the Society for Neuroscience, 2000, New Orleans, LA
18. **Ropella KM**, Waples LM, Jeutter DC. A Novel Curriculum in Biocomputer Engineering at Marquette University. *Proceedings of the 2000 World Congress on Medical Physics and Biomedical Engineering*. (CD ROM) Presented at the 2000 World Congress on Medical Physics and Biomedical |Engineering, 2000, Chicago, IL.
19. Olson L, Jeutter D, Waples L, **Ropella K**. Successful graduate industrial internships in biomedical engineering at Marquette University. *Proceedings of the 2000 World Congress on Medical Physics and Biomedical Engineering*. (CD ROM) Presented at the 2000 World Congress on Medical Physics and Biomedical |Engineering, 2000, Chicago, IL.
20. Rhodes SS, **Ropella KM**, Jian AZ, Varadarajan SG, Weber CA, Jiang MT, Stowe DF. Quantifying cyclic LVP-[Ca2+] Loops and the effects of inotropic drugs in intact hearts. *Biophysical Journal*, 80: 7a, 2001. Presented at the 45th Annual meeting of the Biophysical Society, 2001, Boston, MA.
21. Stowe DF, Goggins CP, Bartley BA, Rhodes SS, Camara AK, Heisner JS, Chen Q, Novalija E, **Ropella KM**. How Cardiac drugs alter contractility -myoplasmic calcium loops in intact beating hearts. *Biophysical Journal*, 80: 350a, 2001. Presented at the 45th Annual meeting of the Biophysical Society, 2001, Boston, MA
22. Saad Z, **Ropella K**, DeYoe E, Bandettini P. Extensive Expansion of FMRI Activation Volume with Scan Averaging.

Neuroimage 11: 2001, *Proc. 7th International Conference on Functional Mapping of the Human Brain)*. Presented at the 7th Annual conference of the Human Brain Mapping Society, 2001, Brighton, England

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