

Mariesa Louise Crow

F. Finley Distinguished Professor of Electrical Engineering
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Academic Experience

Years	Title	Institution
2007-2012	Director	Energy Research and Development Center Missouri University of Science and Technology (formerly University of Missouri-Rolla)
2003-2007	Dean	School of Materials, Energy, and Earth Resources University of Missouri-Rolla
2006-Present	F. Finley Distinguished Prof.	Department of Electrical and Computer Engineering Missouri University of Science and Technology
2001-2003	Assoc. Dean for Research and Graduate Affairs	School of Engineering University of Missouri-Rolla
2000-2006	Professor	Department of Electrical and Computer Engineering University of Missouri-Rolla
1996-2000	Associate Professor	Department of Electrical and Computer Engineering University of Missouri-Rolla
1991-1996	Assistant Professor	Department of Electrical and Computer Engineering University of Missouri-Rolla
1990-1991	Assistant Professor	Department of Electrical Engineering Arizona State University
1989-1990	Visiting Assistant Professor	Department of Electrical and Computer Engineering University of Illinois
1986-1989	Graduate Research Assistant	Department of Electrical and Computer Engineering Power and Energy Systems University of Illinois

Education

Degree	Institution	Year
Ph.D. (EE)	University of Illinois, Urbana/Champaign	1989
M.S. (EE)	University of Illinois, Urbana/Champaign	1986
B.S.E. (EE)	University of Michigan, Ann Arbor	1985

Professional Activities

- IEEE** (Power Engineering Society)..... 1983-present
- Vice President, Publications (2013-present)
 - Vice President, Education/Industry Relations (2002-2004)
 - Editorial Board, Power Engineering Review (1999-2002)
 - Associate Editor, IEEE Transactions on Power Systems (2005-present)
 - Chair, Student Activities Subcommittee (1996-2000)
 - Chair, Research Subcommittee (2004-2006)
 - Member, System Dynamic Performance Committee
 - Chair, Power Engineering Education Committee (2008-2010)
 - Chair, Major Awards Committee (2011-present)
 - Member, Fellows Committee (2012-present)
 - IEEE Technical Activities Board Awards and Recognition Committee
- International Transactions on Electrical Energy Systems** (formerly
European Transactions on Electric Power) (Editor) 2008-present
- American Society for Engineering Education** 1992-present

Honors and Awards

National

Fellow, IEEE	2010
Distinguished Service Award, IEEE Power & Energy Society	2010
PES Prize Paper Award, PEEC, IEEE Power Engineering Society	2006
IEEE Third Millennium Medal, IEEE Power Engineering Society	2000
PES Prize Paper Award, PEEC, IEEE Power Engineering Society	2000
Outstanding Working Group Chair, IEEE Power Engineering Society	1998
Walter Fee Outstanding Young Engineer, IEEE Power Engineering Society	1997
Dow Outstanding New Faculty Award, American Society of Engineering Educators ...	1997

State

Rising Star Innovation Award, Missouri Small Business Development Centers	2008
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Region

Make a Difference Award, Society of American Military Engineers, Fort Leonard Wood Chapter	2009
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University of Missouri-Rolla/Missouri University of Science and Technology

Missouri S&T Outstanding Teaching Award	2010
	2008
F. Finley Distinguished Professor of Electrical Engineering	2007
UMR Women's Hall of Fame, Inductee	2007
Faculty/Staff of the Month (from the National Residence Hall Honorary Society)	2005
UM-Rolla Woman of the Year	2002
U-Missouri Leadership Professional Development Program	2001

Primary Courses Taught

University of Missouri-Rolla/Missouri University of Science and Technology 1991-Present

- Power system analysis (Undergraduate required)
- Advanced power system analysis (Undergraduate elective/Graduate)
- High voltage engineering (Undergraduate elective/Graduate)
- Power Quality (Undergraduate elective/Graduate)
- Computer methods for power system analysis (Graduate)
- Power system stability (Graduate)
- Flexible control of transmission systems (Undergraduate elective/Graduate)
- Global Research (Undergraduate seminar)

Registered Professional Engineer – Missouri

Certified Environmental Management Systems Auditor

Campus Service (current)

- Student Grievance Committee
- Female and Underrepresented Minority Faculty Recruitment and Retention Committee
- Tenure Committee, Faculty Senate, (chair 2011), 2010-present
- Promotion & Tenure, Engineering Subcommittee chair, 2012
- Faculty Ambassador Recruiting Team
- Women in Nuclear Engineering, Faculty Advisor
- Research Capacity Taskforce
- Chancellor's Committee on Diversity and Inclusion

Department Committees

- Promotion and Tenure

University of Missouri System (current)

- Faculty Committee on Tenure

Funded Grants and Contracts

Sponsor	Project dates	% effort	Project funding
Department of Energy	10/1/2013-9/30/2019	40	\$847,439
Sandia National Laboratories	7/11/2013-9/30/2013	50	\$57,989
National Science Foundation	8/1/2013-7/31/2016	50	\$269,980
Missouri Department of Transportation	6/25/2012-12/31/2013	10	\$99,980
US Army Corps of Engineers	5/7/2012- 5/6/2013	40	\$353,373
National Science Foundation	9/1/2011-8/31/2014	100	\$210,000
Sandia National Laboratories	2/28/2011-9/30/2011	100	\$99,793
US Army Research and Development Center	2/11/2011-2/10/2013	12.5	\$757,054
Leonard Wood Institute	10/1/2010-12/31/2011	34	\$315,340
Air Force Research Laboratory	7/10/2009-7/9/2012	40	\$862,500
Leonard Wood Institute	9/1/2009-9/30/2010	50	\$446,423
Sandia National Laboratories	7/31/2009-9/30/2010	100	\$44,000
National Science Foundation (U Michigan)	9/15/08-8/31/12	100	\$287,922
National Science Foundation (From NC State)	9/1/08-8/31/14	22	\$2,708,756
State of Missouri, Office of Administration	3/31/08-5/31/10	20	\$306,056
Sandia National Laboratories	12/2/07-12/1/09	50	\$574,740
Leonard Wood Institute	10/1/07-9/30/08	35	\$245,127
National Science Foundation	5/1/2007-4/30/2010	100	\$155,377
Department of Education	8/21/2006-8/13/2009	25	\$383,181
National Science Foundation	9/15/2006-8/31/10	50	\$100,000
Sandia National Laboratories	5/1/06-4/30/07	25	\$680,859
Sandia National Laboratories	4/18/05-4/30/06	25	\$1,270,391
National Science Foundation	9/1/04-8/31/07	33	\$300,000
Sandia National Laboratories	6/1/04-5/31/05	40	\$727,890
National Science Foundation	6/1/04-5/31/05	25	\$230,000
National Science Foundation	9/1/03-8/31/06	50	\$200,000
Electric Power Research Institute	6/1/03-12/31/03	50	\$75,000
Sandia National Laboratories	2/15/03-12/31/03	70	\$57,136
Electric Power Research Institute	9/1/02-8/31/03	100	\$50,000
National Science Foundation	9/1/02-8/31/03	25	\$70,000
Office of Naval Research	2/28/02-2/28/03	30	\$1,916,582
Ford Motor Company	5/01/02-4/30/03	33	\$40,000
Sandia National Laboratories	2/15/02-12/31/02	65	\$54,954
Sandia National Laboratories	2/15/01-12/31/01	65	\$53,975
Naval Surface Warfare Command	1/01/01-12/31/01	33	\$567,537
Virginia Tech	1/1/01-12/31/02	100	\$25,000

Sponsor	Project dates	% effort	Project funding
National Science Foundation	9/1/00-8/31/01	16	\$100,000
Ameren Corp	9/1/00-12/31/01	100	\$26,000
National Science Foundation	9/1/00-8/31/01	100	\$13,440
National Science Foundation	9/1/00-8/31/01	50	\$100,000
Ford Motor Company	5/1/00-4/30/03	33	\$150,000
Sandia National Laboratories	2/5/00-9/30/00	65	\$39,000
Massachusetts Institute of Technology	1/1/00-12/31/00	33	\$59,281
National Science Foundation	12/1/99-11/30/00	100	\$15,000
National Science Foundation	9/1/99-8/31/02	33	\$344,444
National Science Foundation	9/1/99-8/31/00	20	\$75,000
Ameren Corp	7/1/99-6/30/00	20	\$50,000
National Science Foundation	6/1/99-5/31/04	20	\$2,698,142
U. of Missouri Research Board	6/1/99-5/31/00	20	\$60,320
Sandia National Laboratories	2/5/99-9/30/99	65	\$54,568
Ameren Corp. (formerly Union Electric)	1/1/99-5/31/00	50	\$25,000
National Science Foundation	1/1/99-12/31/99	100	\$13,850
Ford Motor Company	11/1/98-10/31/99	25	\$58,421
Naval Surface Warfare Center (P.C. Krause)	10/1/98-3/1/99	30	\$62,500
National Science Foundation	7/1/98-6/30/99	100	\$11,000
National Science Foundation	1/1/98-12/31	100	\$14,039
U. of Missouri Research Board	1/1/98-12/31	25	\$90,380
National Science Foundation	10/1/97-9/30/99	18	\$135,447
National Science Foundation	2/15/97-5/31/97	100	\$13,000
Union Electric Co.	8/22/96-12/31/98	50	\$20,693
National Science Foundation	7/1/96-6/30/98	16	\$200,899
U. of Missouri Research Board	1/1/96-5/31/97	50	\$49,985
National Science Foundation	9/1/95-2/1/00	50	\$428,544
Missouri Institute of Instructional Development	5/15/95-12/31/95	50	\$20,745
Illinois Power Co.	1/1/95-12/31/95	100	\$11,500
Union Electric Co.	1/1/95-12/31/95	50	\$15,000
Electric Power Research Institute	4/1/93-7/1/97	100	\$147,500
National Science Foundation	9/1/92-2/28/99	100	\$310,693
National Science Foundation	8/15/91-1/31/94	100	\$59,462
Total for M. L. Crow			\$7,363,468
Total			\$20,918,207

Funded Projects:

- The MidAmerica Regional Microgrid Education and Training (MARMET) Consortium, \$4,300,000, M. L. Crow (PI), 10/1/2013-9/30/2019, DOE (with J. Kimball (Co-PI), S. Long (Co-PI)). Missouri S&T Lead University with University of Illinois, University of Wisconsin, and Iowa State University sub-awardees, (\$847,439 Missouri S&T).
- Enabling Secure, Scalable Microgrids with High Penetration Renewables, \$57,989, M. L. Crow (PI), 7/11/2013-9/30/2013, Sandia National Laboratories (with A. C. Elmore (Co-PI)).
- Computationally Efficient Solvers for Power System Simulation, \$269,980, M. L. Crow (PI), 8/1/2013-7/31/2016, National Science Foundation (with Maggie Cheng (Co-PI)).
- Longitudinal Useful Life Analysis and Replacement Strategies for LED Traffic Indicators, \$99,980, Missouri Department of Transportation, M. L. Crow (Co-PI), 6/25/2012-12/31/2013 (with S. Long (PI), R. Qin, A. Gosavi, C-H. Wu (Co-PIs)).
- Building scale off-grid renewable Energy system for Fort Leonard Wood, \$353,373, US Army Corps of Engineers, M. L. Crow (Co-PI), 5/7/2012-5/6/2013, (with A. C. Elmore (PI)).
- Stochastic Transient Stability Analysis for Structure Preserved Electric Power Systems, \$210,000, National Science Foundation, M. L. Crow (PI), 9/1/2011-8/31/2014.
- Development and validation of advanced energy management control algorithms for short or long term energy storage, Task IV, \$99,793, Sandia National Laboratories, M. L. Crow (PI), 2/28/11-9/30/2011.
- A Framework for Complexity Management in Virtual Forward Operating Base Camps, \$398,932, US Army Research and Development Center, M. L. Crow (Co-PI), 2/11/2011-2/10/2012 (with S. Corns (PI), S. Long, S. Grasmann, A. C. Elmore, and C. Dagli (Co-PIs)).
- Smart Grid Capability for Forward Operating Base Camps, \$315,340, Leonard Wood Institute, M. L. Crow (PI), 10/1/2010-12/31/2011 (with A. C. Elmore and B. McMillin)
- Advanced Military Installations that Integrate Renewable Energy and Advanced Energy Storage Technologies – Task I, \$862,500, Air Force Research Laboratory, M. L. Crow (PI), 7/10/2009-7/9/2012 (with A. C. Elmore and B. McMillin)
- Portable, Scalable, Self-Contained Renewable Energy Systems to Optimize Forward Operating Base Generation Capabilities, \$446,423, Leonard Wood Institute, M. L. Crow (PI), 9/1/2009-9/30/2010 (with A. C. Elmore)
- Development and validation of advanced energy management control algorithms for short or long term energy storage, Task III, \$44,000, Sandia National Laboratories, M. L. Crow (PI), 7/31/09-9/30/2010.
- EFRI-RESIN: A Multi-Scale Design and Control Framework for Dynamically Coupled Sustainable and Resilient Infrastructures, with Applications to Vehicle-to-Grid Integration, \$287,922, National Science Foundation (subcontract through the University of Michigan), M. L. Crow (PI), 9/15/2008 – 8/31/2012.
- NSF Engineering Research Center for Future Renewable Electric Energy Delivery and Management (FREEDM) Systems, \$2,08756, National Science Foundation, M. L. Crow (PI), 9/1/08-8/31/14, (with B. Chowdhury, K. Corzine, M. Ferdowsi, J. Kimball, and B. McMillin).

- Renewable Energy Demonstration at Troop I Headquarters, \$306,056, State of Missouri, Office of Administration, M. L. Crow (Co-PI), 3/31/08-5/31/10 (with A. C. Elmore (PI) and J. Burken (Co-PI))
- Development and validation of advanced energy management control algorithms for short or long term energy storage, \$574,740, Sandia National Laboratories, M. L. Crow (PI), 12/2/07-7/30/09 (with B. McMillin and M. Ferdowsi)
- Emergency Drinking Water System Powered by Renewable Energy Systems, \$245,128, Leonard Wood Institute, M. L. Crow (Co-PI), 10/1/07-9/30/08 (with A. C. Elmore (PI)).
- Multiple FACTS Device Coordination using Synchronized Wide Area Measurements, \$155,377, National Science Foundation, M. L. Crow (PI), 5/1/2007-4/30/2010, (with Yilu Liu, Virginia Tech (VT funded separately))
- GAANN – Electric Energy Conversion for High Impact Applications in Power and Energy Systems, \$383,181, Department of Education, M. L. Crow (Co-PI), 8/21/2006-8/20/2010, (with B. Chowdhury (PI), K. Corzine, and M. Ferdowsi).
- Collaborative Research: CSR—EHS: Semantic Domain Integration for Embedded and Hybrid Systems, \$100,000, National Science Foundation, M. L. Crow (Co-PI), 9/15/06-8/31/10. (with B. McMillin (PI))
- The Study and Reduction of the Deleterious Effects on Interacting Power Control Devices, \$680,859, Sandia National Laboratory, M. L. Crow (PI), 5/1/2006-4/30/2007, (with B. McMillin, X. Liu, J. Sarangapani, B. Chowdhury, D. Tauritz, A. Huang (NC State), and S. Ranade (NM State)).
- Interconnected Laboratory Scale FACTS Devices, (\$1,270,391), Sandia National Laboratories, M. L. Crow (PI), 4/18/2005-4/30/2006, (with B. McMillin, X. Liu, J. Sarangapani, B. Chowdhury, D. Tauritz, A. Huang (NC State), Y. Liu (Virginia Tech), and S. Ranade (NM State)).
- MRI – Construction of a Laboratory to Study FACTS Device Interactions, (\$300,000), National Science Foundation, M. L. Crow (Co-PI), 9/1/04-8/14/08, (with B. McMillin (PI) and X. Liu)
- Dynamic Performance of Integrated FACTS/ESS in Large Scale Systems, (\$727,890), Sandia National Laboratory, M. L. Crow (PI), 6/1/04-5/31/05 (with B. McMillin, X. Liu, J. Sarangapani, and A. Huang (Virginia Tech))
- Neural Network-based Wide Area Coordination and Local Control of Elements in a Large Complex System, M. L. Crow (PI), 6/1/04-5/31/07 (with K. Venayagamoorthy, D. Wunch, and R. Harley (Georgia Tech))
- Benchmarking Integrated FACTS and Modern Energy Storage Systems, (\$199,996), National Science Foundation, M. L. Crow (PI), 9/1/03-8/31/06 (with Yilu Liu, Virginia Tech).
- TUCAP System Application Study, (\$75,000), Electric Power Research Institute, M. L. Crow (PI), 6/1/03-12/31/03 (with Yilu Liu, Virginia Tech).
- Integration and Testing of Energy Storage with Flexible AC Transmission System Devices – Phase V, (\$57,136), Sandia National Laboratories, M. L. Crow (PI), 2/15/03-12/31/03 (with S. Pekarek).
- Integration of FACTS and Superconducting Magnetic Energy Storage (SMES): Qualitative and Quantitative Comparisons, (\$50,000), Electric Power Research Institute, M. L. Crow (PI), June 15, 2002-June 14, 2003.

- Intelligent Adaptive Control of FACTS Devices in a Distributed Power Network Containing Turbogenerators, (\$70,000), National Science Foundation, M. L. Crow (PI), 9/01/02-8/31/03. (with K. Venayagamoorthy, D. Wunsch and R. Harley (Georgia Tech))
- Naval Combat Survivability – Year 2 Research Efforts, (\$2,974,681), Office of Naval Research, M. L. Crow (Co-PI), 30%, 10/01/01-9/30/2002 (with S. Pekarek, J. Drewniak)
- Integration and Testing of Energy Storage with Flexible AC Transmission System Devices – Phase IV, (\$54,954), Sandia National Laboratories, M. L. Crow (PI), 2/15/02-12/31/02 (with S. Pekarek).
- Integration and Testing of Energy Storage with Flexible AC Transmission System Devices – Phase III, (\$53,975), Sandia National Laboratories, M. L. Crow (PI), 2/15/01-12/31/01 (with S. Pekarek).
- Naval Combat Survivability, (\$567,537), Naval Surface Warfare Center, M. L. Crow (Co-PI), 1/01/01-12/31/01. (with S. Pekarek, J. Drewniak)
- Integration of Energy Storage Systems and Modern Flexible AC Transmission Devices, (\$25,000), Virginia Tech., M. L. Crow (PI), 1/1/01-12/31/01.
- Acquisition of Test Equipment for Electromagnetic Compatibility Research in Ultra-Fast Digital Electronics and Power Electronics, (\$100,000), National Science Foundation, (Co-PI), 9/1/00-8/31/01.
- Placement and Rating of FACTS Devices, (\$26,000), Ameren Corp., M. L. Crow, (PI), 9/1/00-12/31/01.
- Fault Tolerance and Security for Power Grid Configuration with FACTS Devices, (\$100,000), National Science Foundation, M. L. Crow (Co-PI), 9/1/00-8/31/01. (with B. McMillin)
- Travel Grant: Promoting Student Participation in the North American Power Symposium, (\$13,440), National Science Foundation, M. L. Crow (PI), 9/1/00-8/31/01.
- Anticipating and Mitigating Full-Vehicle Electromagnetic Interference, (\$150,000) Ford Motor Company University Research Program, (Co-PI) 5/1/00 – 4/30/03. (with S. Pekarek, J. Drewniak)
- Integration and Testing of Energy Storage with Flexible AC Transmission System Devices – Phase II, (\$39,000), Sandia National Laboratories, M. L. Crow (PI), 2/5/00-9/30/00. (with S. Pekarek)
- Electromagnetic Compatibility of Power-Electronic Based Systems by Design, Massachusetts Institute of Technology, (\$59,281), M. L. Crow (Co-PI), 1/1/00-12/31/00. (with J. Drewniak and S. Pekarek)
- Travel Grant: Promoting Student Participation in the 2000 IEEE Power Engineering Society Winter Meeting, (\$15,000), National Science Foundation, M. L. Crow (PI), 12/1/99-11/30/00.
- Mid-term Voltage Stability Assessment and Measures for Mitigating Voltage Collapse in Interconnected Power Systems, (\$344,444), National Science Foundation, M. L. Crow (Co-PI), 9/1/99-8/31/02. (with B. Chowdhury and L. Acar)
- A Modular Power Electronics Based Systems Laboratory for Undergraduate Power Engineering Curriculum Enhancement, (\$75,000), National Science Foundation, M. L. Crow (Co-PI), 9/1/99-8/31/00. (with S. Pekarek, N. Cox, B. Chowdhury)

- A Power Electronics-Based Systems Laboratory for Undergraduate Power Engineering Curriculum Enhancement, (\$50,000), Ameren Corp., M. L. Crow (Co-PI), 7/01/99-6/30/00. (with S. Pekarek, N. Cox, B. Chowdhury)
- IGERT: Variable Speed Electromechanical Drive Systems, (\$2,698,142), National Science Foundation, M. L. Crow (PI), 6/1/99-5/31/04. (with S. Pekarek, J. Drewniak, W. Eversman, B. McMillin, M. O'Keefe)
- Variable Speed Electromechanical Drive Systems (\$60,320), University of Missouri Research Board, M. L. Crow (PI), 6/1/99-5/31/00. (with S. Pekarek, J. Drewniak, W. Eversman, B. McMillin, M. O'Keefe)
- Excitation System Nonlinear Parameter Estimation for Power System Stability Studies: Practical Implementation, (\$25,000), Ameren Corp., M. L. Crow (Co-PI), 1/1/99-5/30/00. (with K. Erickson)
- Integration and Testing of Energy Storage with Flexible AC Transmission System Devices, (\$54,568), Sandia National Laboratories, M. L. Crow (PI), 2/5/99-9/30/99. (with S. Pekarek)
- An Analytical Analysis of Algorithms to Calculate Selected Eigenvalues of Large Matrices (\$25,000), Ameren Corporation, M. L. Crow (PI), 1/1/99-5/31/00.
- Promoting Undergraduate and Graduate Participation in the IEEE 1999 Power Engineering Society Winter Meeting, (\$13,850), National Science Foundation, M. L. Crow (PI), 1/1/99-12/31/99.
- Identifying and Characterizing EMI Coupling Paths in Electric Propulsion Systems for Hybrid Electric Vehicles, (\$58,421), Ford Motor Research Laboratory, M. L. Crow (Co-PI), 11/1/1998-10/31/1999. (with J. Drewniak and S. Pekarek)
- Transient Modeling of Finite Inertia Power Systems, Task 5 and 6, (\$62,500), P.C. Krause & Associates, M. L. Crow (Co-PI), 10/1/98-3/1/99. (with S. Pekarek and J. Drewniak)
- Promoting Student Participation in the IEEE 1998 SPM Power Engineering Society Meeting, (\$11,000), National Science Foundation, M. L. Crow (PI), 7/1/98-6/30/99.
- Promoting Undergraduate and Graduate Participation in the IEEE Power Engineering Society, (\$14,039), National Science Foundation, M. L. Crow (PI), 1/1/98-12/31/98.
- Equipment for Power Electronics in Power Systems, (\$90,380), University of Missouri Research Board, M. L. Crow (PI), 1/1/98-12/31/98. (with S. Pekarek, J. Drewniak)
- Acquisition of Equipment for Research in High-Speed Electronics and Power Electronics in Bulk and Finite Inertia Power Systems, (\$135,447), National Science Foundation, M. L. Crow (PI), 10/1/97-9/30/98. (with EMC Group)
- A Plan for Sponsored Attendance of Electrical Engineering Students to the IEEE Power Engineering Society Winter Meeting, (\$13,000), M. L. Crow (PI), National Science Foundation, 1/15/97-5/31/97.
- Excitation System Nonlinear Parameter Estimation for Power System Stability Studies: Feasibility Study, (\$20,693), M. L. Crow (PI), 8/22/96-8/21/97.
- Acquisition of Multidisciplinary Instrumentation for Intelligent Control, (\$200,899), M. L. Crow (Co-PI), National Science Foundation, 7/1/96-6/30/97.
- A Flexible AC Transmission System Laboratory, (\$49,985), M. L. Crow (PI), University of Missouri Research Board, 1/1/96-5/31/97. (with S. Sudhoff)
- Combined Research and Curriculum Development: Flexible Power System Control, (\$428,544), M. L. Crow (PI), National Science Foundation, 9/1/95-2/1/99. (with S. Sudhoff)

- A Modular Course in FACTS Featuring Interactive Software, (\$20,745), M. L. Crow (Co-PI), Missouri Institute of Instructional Development, 5/15/95-12/31/95. (with S. Sudhoff)
- Integrated Voltage Stability Index, (\$11,500) M. L. Crow (PI), Illinois Power Company, 1/1/95-12/31/95.
- Excitation System Model Parameter Estimation for Power System Stability Studies: Feasibility Study, (\$15,000), M. L. Crow (PI), Union Electric Company, 1/1/95-12/31/95.
- Computational Algorithms for Power System Dynamic Security Assessment, (\$147,500), Electric Power Research Institute, 4/1/93-7/1/97.
- National Science Foundation Young Investigator, (\$310,693), M. L. Crow (PI), National Science Foundation, 9/1/92-2/28/99.
- Dynamic Evaluation of Voltage Collapse on Power Systems, (\$59,462), M. L. Crow (PI), National Science Foundation, 8/15/91-1/31/94.

Publications and Other Scholarly Contributions

Publications	Total
Books and Book Chapters	8
Journal and Professional Articles.....	78
Conference Articles	131

Books

Mariesa L. Crow, *Computational Methods for Electric Power Systems, second edition*, CRC Press, ISBN 978-1-4200-8660-7, (291 pages) 2009.

Mariesa L. Crow, *Computational Methods for Electric Power Systems*, CRC Press, ISBN 0-8493-1352-X, (256 pages) 2002. (plus 49 page solutions manual ISBN 0849314100).

Book Chapters

K. Wang* and M. L. Crow, “Modern Flexible AC Transmission System Controllers” in *Electricity Transmission, Distribution and Storage Systems*, ed. by Ziad Melhem, Woodhead Publishing Series in Energy No. 38, Woodhead Publishing, Cambridge, UK, October 2013.

M. L. Crow (Lead Editor), J. Sanchez-Gasca (Lead Editor), J. Chow, J. Hauer, H. Huang, J. Pierre, D. Trudnowski, L. Vanfretti, N. Zhou, “Linear Ringdown Analysis Methods” (Chapter 1), *Identification of Electromechanical Modes in Power System, IEEE PES Special Publication TP462*, Main Editors: M. L. Crow, M. Gibbard, A. Messina, J. Pierre, J. Sanchez-Gasca, D. Trudnowski, D. Vowles, June 2012.

Mariesa L. Crow, “Computational Methods for Electric Power Systems” in *Power Systems (Electric Power Engineering Handbook, 2nd ed)*, ed. by Leonard Grigsby, Taylor & Francis, CRC Press, ISBN: 0849392926, 2007.

Mariesa L. Crow and Nirup Shetty*, “Electric Power Systems Measurements and Variables,” in *Encyclopedia of Energy*, ed. by Cutler Cleveland, Elsevier Press, ISBN 012176480X, 2004.

P. Ribeiro, B. Johnson, M. Crow, A. Arsoy, M. Steurer, and Y. Liu, “Energy Storage: Power Electronics Interface and Improved System Performance,” in *Encyclopedia of Life Support Systems*, (UNESCO), 2003.

M. L. Crow, D. J. Tylavsky, and A. Bose, “Concurrent Processing in Power System Analysis,” *Advances in Control & Dynamic Systems*, edited by C. T. Leondes, Academic Press, Inc., vol. 42, part 2, pp. 1-56, 1991.

Journal Articles

- [1] Tu A. Nguyen*, Xin Qiu*, Joe D. Guggenberger*, M. L. Crow, and A. C. Elmore, "Performance Characterization for Photovoltaic-Vanadium Redox Battery Microgrid Systems," *IEEE Transactions on Sustainable Energy*, (to appear).
- [2] Joe D. Guggenberger*, A. C. Elmore, and M. L. Crow, "Microgrid Load Characterization using Regional Weather Data," *Renewable Energy*, (to appear).
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- [53] W. Siever, R. P. Kalyani, M. L. Crow, and D. Tauritz, "UPFC control employing gradient descent search," *North American Power Symposium*, Ames, IA, October 2005.
- [54] A. Armbruster, M. Gosnell, B. McMillin, M. Crow, "The Maximum Flow Algorithm Applied to the Placement and Distributed Steady-State Control of UPFCs," *North American Power Symposium*, Ames, IA, October 2005.

- [55] A. Armbruster and M. Gosnell and B. McMillin and M. L. Crow, "Power Transmission Control Using Distributed Max Flow", *The 29th Annual IEEE International Computer Software and Applications Conference*, Edinburgh, Scotland, July 25-28, 2005.
- [56] J. Chaloupek, D. Tauritz, B. McMillin, and M. L. Crow, "Evolutionary Optimization of Flexible AC Transmission Systems Device Placement for Increasing Power Grid Reliability," *6th International Workshop on Frontiers in Evolutionary Algorithms*, July 21 - 26, 2005, Salt Lake City, Utah.
- [57] L. Zhang, M. Baldwin, Y. Liu, M. R. Ingram, D. T. Bradshaw, S. Eckroad, and M. L. Crow, "A Solution for EAF Induced Problems in Bulk Power Systems by FACTS/ESS," *Proceedings of the 2005 PES Annual Meeting*, San Francisco, CA, June 2005.
- [58] L. Zhang, Y. Liu, M. L. Crow, "Coordination of UFLS and UFGC by Application of D-SMES," *Proceedings of the 2005 PES Annual Meeting*, San Francisco, CA, June 2005.
- [59] K. Corzine and M. L. Crow, "Power Engineering Laboratory Facilities at the University of Missouri-Rolla, (panel summary) *Proceedings of the 2005 PES Annual Meeting*, San Francisco, CA, June 2005.
- [60] W. Liu, J. Sarangapani, D. Wunsch, M. L. Crow, "Decentralized Neural Network Control of a Class of Large-Scale Systems with Unknown Interconnections," *Proceedings of the 2004 IEEE International Conference on Decision and Control*, Nassau, Bahamas, December 2004.
- [61] J. Chen, M. Crow, B. Chowdhury, L. Acar, "An Error Analysis of the Multirate Method for Power System Transient Stability Simulation," *Proceedings of the 2004 IEEE PES Power System Conference and Exposition*, New York City, October 2004.
- [62] Li Zhang, Y. Liu, Michael R. Ingram, Dale T. Bradshaw, Steve Eckroad, Mariesa L. Crow, "EAF Voltage Flicker Mitigation By FACTS/ESS," *Proceedings of the 2004 IEEE PES Power System Conference and Exposition*, New York City, October 2004.
- [63] Li Zhang, Y. Liu, Michael R. Ingram, Dale T. Bradshaw, Steve Eckroad, Mariesa L. Crow, "Bulk Power System Low Frequency Oscillation Suppression By FACTS/ESS," *Proceedings of the IEEE PES Power System Conference and Exposition*, New York City, October 2004.
- [64] A. Armbruster, M. Gosnell, B. McMillin, M. Crow, "Power Transmission Control using Distributed Max Flow," *The 2004 International Conference on Parallel Processing (ICPP-04)*, Montreal, Quebec, August 2004.
- [65] W. Liu, J. Sarangapani, G. K. Venayagamoorthy, D. Wunsch, M. L. Crow, "Neural Network Stabilizing Control of Single Machine Power System with Control Limits, *International Joint Conference on Neural Networks*, Budapest, July 2004.

- [66] F. Dong, B. Chowdhury, M. Crow, L. Acar, "Cause and Effects of Voltage Collapse – Case Studies with Dynamic Simulations," *Proceedings of the 2004 IEEE Power Engineering Society General Meeting*, Denver, CO, June 2004.
- [67] J. Guo, L. Acar, B. Chowdhury, M. Crow, "Small Local Dynamic Fuzzy Logical Models for Large-Scale Power Systems," *Proceedings of the 2004 IEEE Power Engineering Society General Meeting*, Denver, CO, June 2004.
- [68] C. Qian and M. L. Crow, "A Multi-processor Control System Architecture for a Cascaded StatCom with Energy Storage," *Applications of Power Electronics Conference*, Anaheim, California, February 2004.
- [69] Y. Cheng, C. Qian, M. L. Crow, and S. Atcitty, "Efficient Utilization of Battery Energy Storage in a Multilevel Converter StatCom," *Proceedings of the Electric Energy Storage Applications and Technologies Conference*, San Francisco, CA, October 2003.
- [70] M. L. Crow, "A Comparison of Linear Model Identification Methods," *International Symposium on Modern Computing*, Ames, IA, October 2003. (Invited)
- [71] Y. Cheng and M. L. Crow, "A Five-Level Inverter-Based StatCom and StatCom/BESS," *Proceedings of the North American Power Symposium*, October 2003.
- [72] L. Dong and M. L. Crow, "Hybrid Fuzzy Logic Control for UPFC to Reduce Control Interactions," *Proceedings of the North American Power Symposium*, October 2003.
- [73] Salman Mohagheghi, Jung-Wook Park, Ronald G. Harley, Ganesh K. Venayagamoorthy, and Mariesa L. Crow, "An Adaptive Neural Network Identifier for Effective Control of a Static Compensator Connected to a Power System," *International Joint Conference of Neural Networks*, Portland, OR, July 2003.
- [74] R. P. Kalyani, G. K. Venayagamoorthy, M. L. Crow, "Neuroidentification of system parameters for the shunt and series branch control of UPFC," *Proceedings of the 2003 IEEE Power Engineering Society General Meeting*, Toronto, Ontario, July 2003.
- [75] L. Dong and M. L. Crow, "Hybrid Fuzzy Logic Control with Global Signals for UPFC to Reduce Control Interactions," *Proceedings of the Caribbean Colloquium on Power Quality*, Puerto Rico, June 2003 (Invited).
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- [80] Chengyue Guo; Crow, M.; Chowdhury, B.; Acar, L.; "A new approach to secondary voltage control," *IEEE Power Engineering Society 2002 Summer Meeting*, Volume: 3, Page(s): 1605 –1609.
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- [82] Y. Cheng, C. Qian, M. L. Crow, S. Atcitty, "Development of Novel Power Electronic Topologies for the Integration of Battery Energy Storage in FACTS Devices", *Electric Energy Storage Applications and Technologies Conference*, San Francisco, CA, April 2002.
- [83] Y. Cheng and M. L. Crow, "A Diode-Clamped Multi-level Inverter for the StatCom/BESS," *Proceedings of the 2002 IEEE PES Winter Meeting*, New York City, January 2002.
- [84] L. Dong and M. L. Crow, "A New Control Strategy for the Unified Power Flow Controller," *Proceedings of the 2002 IEEE PES Winter Meeting*, New York City, January 2002.
- [85] C. Qian and M. L. Crow, "A Cascaded Converter-Based StatCom with Energy Storage," *Proceedings of the 2002 IEEE PES Winter Meeting*, New York City, January 2002.
- [86] C. Qian and M. L. Crow, "A Multilevel StatCom with Battery Energy Storage," *Proceedings of the 2001 IEEE PES Transmission & Distribution Conference and Expo*, Atlanta, GA, October 2001.
- [87] C. Qian, L. Zhang, C. Shen, M. L. Crow, and S. Atcitty, "A Comparison of FACTS Devices Integrated with Battery Energy Storage Systems", *Proceedings of the 2001 IEEE PES Transmission & Distribution Conference and Expo*, Atlanta, GA, October 2001.
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- [102]Z. Yang, M. L. Crow, C. Shen, L. Zhang, P. Cao, "Steady-State Characteristics of a StatCom with Energy Storage," *Proceedings of the 1999 North American Power Symposium*, pp. 517-521, October 1999.
- [103]S. Starrett, A. Pahwa, K. Olejniczak, M. L. Crow, and S. Sudhoff, "A Virtual Classroom Via Dataconferencing: A Multi-Institutional Experience," *Proceedings of the Frontiers in Education Conference*, Tempe, Arizona, November 1998.
- [104]Z. Yang, P. Cao, and M. L. Crow, "A New Voltage Stability Index Based on the Continuation Power Flow Method," *Proceedings of the North American Power Symposium*, pp. 42-47, Cleveland, Ohio, October 1998.
- [105]R. Bhaskar and M. L. Crow, "Excitation System Nonlinear Parameter Estimation for Power System Stability Studies: Feasibility Study," *Proceedings of the North American Power Symposium*, pp. 453-458, Cleveland, Ohio, October 1998.
- [106]M. L. Crow, S. D. Sudhoff, K. Olejniczak, S. K. Starrett, and A. Pahwa, "A Power Engineering Triad: Flexible Control of Power Systems," *Proceedings of the 1997 North American Power Symposium*, pp. 436-441, October 1997.
- [107]P. Rao and M. L. Crow, "StatCom Control for Power System Applications," *Proceedings of the 1997 North American Power Symposium*, pp. 172-178, October 1997.
- [108]E. Ludwig, M. L. Crow, K. Erickson, K. Shah, "A Feasibility Study of On-Line Excitation System Parameter Estimation," *Proceedings of the 1997 IEEE Power Industry Computer Applications Conference*, Columbus, Ohio, pp. 324-330, May 1997.
- [109]M. L. Crow, S. D. Sudhoff, S. K. Starrett, A. Pahwa, K. Olejniczak, "A Power Engineering Triad: Flexible Control of Power Systems," *Proceedings of the NSF Engineering Education Innovator's Conference*, Washington, D. C., April 1997.
- [110]A. Basa and M. L. Crow, "A Large Scale Implementation of a Steady-State Voltage Security Margin indicator," *Proceedings of the 1996 North American Power Symposium*, Cambridge, Massachusetts, pp. 335-342, October 1996.
- [111]M. L. Crow, S. D. Sudhoff, A. Pahwa, S. K. Starrett, and K. Olejniczak, "A Multi-Institutional Cooperative Approach to Power Engineering Education," *Proceedings of the 1996 Midwest Symposium on Circuits and Systems*, Ames, Iowa, August 1996.
- [112]J. Ayyagari and M. L. Crow, "The Effect of Excitation Limits on Voltage Stability," *Proceedings of the 1995 North American Power Symposium*, Bozeman, Montana, pp. 377-382, October 1995.

- [113]K. Bhattacharyya and M. L. Crow, "A Fuzzy Based Load Model for Power System Direct Load Control," *Proceedings of the 4th IEEE Conference on Control Applications*, Albany, New York, pp. 27-32, September 1995.
- [114]M. L. Crow and J. G. Chen, "The Multirate Simulation of FACTS Devices in Power System Dynamics," *Proceedings of the 1995 IEEE Power Industry Computer Applications Conference*, Salt Lake City, Utah, pp. 290-296, May 1995.
- [115]M. L. Crow and J. Chen, "The Multirate Simulation of FACTS Devices in Power System Dynamics," *Proceedings of the 1995 SCS Western Multiconference*, Las Vegas, Nevada, pp. 23-28, January 1995.
- [116]M. L. Crow, "On-Line Requirements of Dynamic Security Assessment for Systems Containing FACTS Devices," *Proceedings of the NSF Symposium on Electric Power Systems Infrastructure*, Pullman, Washington, pp. 191-192, October 1994.
- [117]K. Bhattacharyya and M. L. Crow, "A Fuzzified Load Model for Air Conditioners for Use in Direct Load Control," *Proceedings of the 1994 North American Power Symposium*, Manhattan, KS, pp. 385-392, September 1994.
- [118]J. P. Cook and M. L. Crow, "Applications of Sparsity Methods to Power System Selective Modal Analysis," *Proceedings of the 1994 North American Power Symposium*, Manhattan, KS, pp. 196-201, September 1994.
- [119]A. Nanda, D. Uy, M. L. Crow, J. Nanda, E. Khan, "A Powerful and Computationally Efficient Algorithm for Transmission Loss Calculation," *Proceedings of the 1994 IEEE Transmission and Distribution Conference*, Chicago, IL, pp. 86-90, April 1994.
- [120]A. Nanda and M. L. Crow, "Undervoltage Load Shedding (An Energy Based Approach)," *Proceedings of the 1993 North American Power Symposium*, Washington, D. C., pp. 337-344, October 1993.
- [121]J. Chen and M. L. Crow, "A Study of Numerically Efficient Algorithms for Power System Dynamic Analysis," *Proceedings of the 36th Midwest Symposium on Circuits and Systems*, Detroit, Michigan, pp. 712-715, August 1993.
- [122]R. Ybarra, N. Hubing, and M. L. Crow, "Women Shaping Technology in the 21st Century: A Video Targeted at Changing Perceptions of Careers in Engineering and Technology," *Proceedings of the ASEE 1993 National Conference*, Urbana, IL, May 1993.
- [123]A. Nanda and M. L. Crow, "A Graphical Interpretation of an Energy Based Approach to Undervoltage Load Shedding," *IEEE Power Engineering Society Student Paper Contest*, Columbus, Ohio, January 1993 (Awarded 2nd place)

- [124]M. L. Crow, "The Interaction of System Structure, Index, and Numerical Stability in Classes of Differential/Algebraic Systems," *Proceedings of the 1992 IEEE International Symposium on Circuits and Systems*, San Diego, California, pp. 2840-2843, May 1992.
- [125]M. L. Crow and N. Hubing, "University Programs for the Recruitment and Retention of Women in Undergraduate Engineering," *Proceedings of the ASEE 27th Annual Midwest-Section Meeting*, Lawrence, Kansas, March 1992. (First Place Paper – Engineering Division).
- [126]M. L. Crow and M. Ilic, "The Waveform Relaxation Method for Systems of Differential/Algebraic Equations," *Proceedings of the 29th IEEE Conference on Decision and Control*, Honolulu, Hawaii, pp. 453-458, December 1990.
- [127]M. L. Crow and M. Ilic, "The Waveform Relaxation Algorithm for Systems of Differential/Algebraic Equations with Power System Applications," *Proceedings of the 1989 American Control Conference*, Pittsburgh, Pennsylvania, pp. 1771-1776, June 1989.
- [128]M. L. Crow, M. Ilic, and J. White, "Convergence Properties of the Waveform Relaxation Algorithm as Applied to Electric Power Systems," *Proceedings of the 1989 IEEE International Symposium on Circuits and Systems*, Portland, Oregon, pp. 1863-1866, May 1989.
- [129]M. L. Crow and M. Ilic, "Effects of System Decomposition and Waveform Relaxation Windowing on the Efficiency of Large Scale Power Systems Simulation," *Proceedings of the 12th IMACS World Congress on Scientific Computation*, Paris, France, July 1988.
- [130]M. L. Crow and M. Ilic, "Parallel Algorithms for Large Scale Power System Dynamic Simulation," *Proceedings of the 1988 American Control Conference*, Atlanta, Georgia, pp. 1795-1798, June 1988.
- [131]M. L. Crow, M. Ilic-Spong, and M. A. Pai, "Simulation of Large Electric Power Systems Utilizing Parallel Processing," *Proceedings of the 1986 North American Power Symposium*, Ithaca, New York, pp. 260-269, October 1986.

Invited Presentations (No associated papers)

St. Louis, MO (Washington University, Solar Energy-Energy Storage Group Seminar), “Advanced Storage Demonstrations for Microgrids,” November 2013.

Lawrence, KS (University of Kansas Mechanical Engineering and Electrical Engineering & Computer Science Department Seminar), “Future Electric Power Systems,” November 2013.

Tempe, AZ (The Gerald T. Heydt Festschrift Symposium), “Future Renewable Electric Energy Delivery and Management”, October 2013.

St. Charles, IL (Trustworthy Cyber Infrastructure for the Power Grid Summer School), “Renewables and Resiliency in Microgrids,” June 2013.

Dallas, TX (Univ. of Texas at Dallas, Distinguished Speakers on Energy) “Advanced Military Installations that Integrate Renewable Energy and Advanced Energy Storage Technologies, March 2013.

Kansas City, MO (Kansas City Public Media, KCUR), *Central Standard*, a live public affairs call-in shown on “The Science of Energy,” March 2013.

Alexandria, VA (Tactical Power Sources Summit), “Rechargeable battery packs and continuous operation capabilities to the warfighter,” January 2013.

Tempe, AZ (Power Engineering Graduate Seminar), “An Analysis of Power System Stochastic Stability,” February 2012.

St. Louis, MO (Gender Studies Program), “Women in Administration: Pathways and Preparation,” May 2011.

Atlanta, GA (Southern ECE Department Heads Association), “Future Electric Power Systems,” November 2010.

Ann Arbor, MI (University of Michigan), “Future Electric Power Systems,” April 2010.

Madison, WI (University of Wisconsin), “Future Electric Power Systems,” May 2009.

Miami, FL (SIAM Conference on Computational Science and Engineering), “The Multirate simulation of power systems with power-electronics-based controllers,” (with S. Pekarek), March 2009.

St. Louis, MO (Academy of Science: Energy in America Forum), “Oil, Alternative Energy, and Electricity: Where do we go from here?” October 2008.

Beijing, PRC (Tsinghua University), “Computational Algorithms for the Multirate Simulation of Power System Dynamics,” April 2007.

Lake Buena Vista, FL, (Alternative Energy NOW Conference), “Distributed Energy Micro-Grids,” February 2007.

Pittsburgh, PA, (NSF Workshop: Beyond SCADA: Networked Embedded Control Systems), (with B. McMillin), November 2006.

Tuskegee, Alabama, (NSF ECS Grantees Workshop), “Benchmarking Integrated FACTS and Modern Energy Storage Systems,” June 2006.

Guadalajara, Mexico (CINVESTAV University), “Flexible AC Transmission Systems for Improved Power System Controllability,” May 2006.

Washington, DC (NSF Workshop: Beyond SCADA: Networked Embedded Control Systems), “Beyond SCADA,” March 2006.

Winnipeg, Manitoba, (IEEE Section Invited Lecturer), “The Application of Energy Storage for Improved Power System Stability,” October 2005.

Raleigh, NC (Center for Advanced Power Electronics and Storage), “Control of a STATCOM/TUCAP,” December 2004.

Arlington, VA (NSF US/Japan Workshop on Critical Infrastructure Protection), “Advanced Protection and Control of the Power Grid,” September 2004.

Nashville, TN (Power Delivery Applications for Superconductivity EPRI Working Group Meeting), “A Comparison of STATCOM/SMES vs STATCOM/BESS,” August 2004.

New York, NY (Power Delivery Applications for Superconductivity EPRI Working Group Meeting), “StatCom/SMES vs StatCom/BESS for Power System Stability Applications,” October 2003.

Boston, MA (Beacon Power), “Assessment of FACTS/ESS for Enhanced Transmission System Operation,” September 2003.

Toronto, ON (IEEE Power Engineering Society General Meeting), “ManPower Development for Power Engineering Careers,” July 2003.

Leominster, MA (Power Delivery Applications for Superconductivity EPRI Working Group Meeting), “Assessment of FACTS/SMES for Enhanced Transmission System Operation,” September 2002.

Irvine, California (National Fuel Cell Research Center), “Bulk Power System Applications of Energy Storage and FACTS,” Workshop on Power Electronics for Fuel Cells, August 2002.

Tallahasee, Florida (Florida State University), “Development of Novel Power Electronic Topologies for the Integration of Battery Energy Storage in FACTS Devices,” Center for Advanced Power Systems, May 2002.

Playa Del Carmen, Mexico, (NSF/EPRI Workshop on Global Optimization), “Flexible AC Transmission Systems: Placement, Control, and Interaction,” April 2002.

Jackson Hole, Wyoming (Associated Edison Companies), “Engineering Education for a New Electric Power Industry,” September 2001.

Ames, Iowa (Iowa State University) Power Engineering Graduate Seminar, “Incorporation of Battery Energy Storage in FACTS,” March 2001.

Rolla, MO (2001 Engineers Week Banquet Keynote Speaker), “Power System Deregulation – Boon or Bane?” February 2001.

Columbus, Ohio (2001 IEEE Power Engineering Society Winter Meeting), “Proposal Preparation,” January 2001.

Columbus, Ohio (2001 IEEE Power Engineering Society Winter Meeting), “Comparing Alternatives: Power Systems or Electromechanics,” January 2001.

Urbana, Illinois (University of Illinois Power Engineering Graduate Seminar), “Incorporation of Battery Energy Storage into FACTS,” November 2000.

Seattle, Washington (2000 IEEE Power Engineering Society Summer Meeting), “Proposal Preparation,” July 2000.

Seattle, Washington (2000 IEEE Power Engineering Society Summer Meeting), “Laboratory Experiences,” July 2000.

Singapore (2000 IEEE Power Engineering Society Winter Meeting), “Laboratory Experiences,” January 2000.

Edmonton, Alberta (1999 IEEE Power Engineering Society Summer Meeting), “Collaborative Distance Education in Power Engineering,” July 1999.

Manhattan, Kansas (Kansas State University Power Engineering Graduate Seminar), “On-Line Excitation System Parameter Estimation,” November 1998.

San Diego, California (1998 IEEE Power Engineering Society Summer Meeting), “Collaborative Distance Education in Power Engineering,” July 1998.

Tempe, Arizona (Arizona State University Power Engineering Graduate Seminar), “On-Line Excitation System Parameter Estimation,” April 1998.

Tempe, Arizona (Arizona State University Preparing Future Faculty Lecture Series), “The Assistant Professor: The First Five Years,” April 1998.

Tampa, Florida (1998 IEEE Power Engineering Society Winter Meeting), “Collaborative Distance Education in Power Engineering,” February 1998.

New York, New York (1997 IEEE Power Engineering Society Winter Meeting), “Integrating Research Results into a Power Engineering Curriculum,” January 1997.

Ames, Iowa (Iowa State Power Engineering Graduate Seminar), “The Multirate Algorithm for the Simulation of Power System Dynamics,” November 1995.

Arlington, Virginia (National Science Foundation/Department of Energy Sponsored Workshop on Innovative Approaches to Power Engineering Education), “The Power Engineering Program at the University of Missouri-Rolla,” June 1995.

Chicago, Illinois (American Power Conference), “Parallel Processing Technology for the Power Industry,” April 1995.

Edmonton, Alberta (American Society of Engineering Educators), “Dual Career Challenges,” June 1994.

Urbana, Illinois (University of Illinois Power Systems Engineering Graduate Seminar), “A Discussion of Voltage Collapse and Methods of Analysis,” November 1992.

New York, New York (IEEE Power Engineering Society Winter Meeting), “Dynamic Evaluation of Voltage Collapse on Power Systems,” January 1992.

Tempe, Arizona (Arizona State University Computational and Applied Mathematics Seminar), “The Waveform Relaxation Algorithm for the Parallel Simulation of Power System Transients,” February 1991.

Phoenix, Arizona (IEEE Power Engineering Society, Phoenix Chapter), “Power System Voltage Collapse – A Case Study,” January 1991.

Graduate Students

Advisement	Total
M.S. Students	28 (1 in progress)
Ph.D. Students	15 (5 in progress)
Post-Doctorals	3

Ph.D.

Deepak Somayajula, *Hardware Integration of Ultracapacitor-based Energy Storage to Provide Grid Support and to Improve Power Quality of the Distribution Grid*, Ph.D. 2014. (Post-doc UNC-Charlotte).

Theresa Odun-Ayo, *Impact of Stochastic Loads and Generations on Power System Transient Stability*, Ph.D., 2011 (Missouri State University).

Lisheng Shi, *Advanced Dynamic Response Improvement Methods for DC-DC Power Electronic Converters*, Ph.D., 2010 (co-advisor with M. Ferdowsi), (Cree Corp).

Xiaomeng Li, *Ultracapacitor Characterization Analysis and its Application in Unified Power Quality Conditioners as Energy Storage*, Ph.D., 2010, (Henan Electric Power Research Institute, PRC).

Atousa Yazdani, *Energy and Voltage Management Methods for Multilevel Converters for Bulk Power System Power Quality Improvement*, Ph.D., 2009 (Quanta Technology)

Mahyar Zarghami, *Interarea Oscillation Damping in Large Scale Power Systems with Unified Power Flow Controllers*, Ph.D., 2008 (ABB).

Keyou Wang, *Laboratory Implementation of Unified Power Flow Controller hardware-in-loop Simulation*, Ph.D., 2008. (Shanghai Jiaotong University, PRC)

Radha Kalyani, *A Nonlinear Optimization Approach for UPFC Power Flow Control and Voltage Security*, Ph.D., 2007 (Midwest ISO).

Jianjun Guo, *Decentralized Control and Placement of Multiple Unified Power Flow Controllers*, Ph.D., 2006 (ETAP).

Jianjia Chen, *Further Analysis and Application of the Multirate Method for Power System Dynamic Simulation*, Ph.D. 2006 (Pterra).

Scott Rutenkroeger, *Reduction of Model Dimensions in nonlinear finite element approximations of electromechanical systems*, Ph.D., 2004 (co-advisor with S. Pekarek) (Nuclear Regulatory Commission).

Liangying Dong, *Control, Interaction Mitigation, and Location for FACTS Devices*, Ph.D., 2004 (Midwest ISO).

Ying Cheng, *StatCom/BESS Using a Diode-Clamped Multilevel Converter*, Ph.D., 2004, (Micrel Semiconductors).

Chang Qian, *Study on Multilevel Converters for Synchronous Static Compensator with Energy Storage*, Ph.D., 2004 (International Rectifier).

Lingli Zhang, *Modeling and Control of a Unified Power Flow Controller*, Ph.D., 2001 (Cirrus Systems).

Zhiping Yang, *Control of an Integrated StatCom/Battery Energy Storage System*, Ph.D., 2000 (Cisco Systems).

In Progress

Tu Nguyen, *Hydrogen Storage for Microgrid Applications*, Ph.D. 2014 (expected)

Qiu Xin, *Vanadium Redox Flow Battery Storage for Microgrid Applications*, Ph.D. 2014 (expected)

Lisa Grant, *Approaching Optimality for Solving SDD Power Systems*, Ph.D. 2015 (expected).

Darshit Shah, *Verification, Validation, and Accreditation of Microgrid Models*, Ph.D. 2014 (expected)

Maigha, *The Impact of Time-of-Use Rates on PHEV Charging Schemes*, Ph.D. 2015 (expected).

M.S.

Xiaolong Wang, *A Conforming Method for Regional Marginal Loss Surplus Allocation*, M.S. 2013, (Energy Exemplar).

Onur Kahveci, *Electrical Power Grids for the Virtual Forward Operating Base*, M.S. 2012, (pursuing Ph.D., University of Illinois)

Prasad Shinde, *Statistical and Predictive Modeling of Automated Meter Reading System Outages*, M.S. 2012, (Midwest ISO)

Lisa Grant, *Comparison of Matrix Pencil and Prony Analysis for Estimating Electromechanical Models in Noisy Signals for Power System Applications*, M. S. 2011, (pursuing Ph.D).

Murali Bottu, *Design of a Conditioner for Smoothing Wind Turbine Output Power*, M. S. 2011, (Schweitzer Engineering Laboratories).

Abhishek Singh, *Integration of Ultracapacitors in Static Compensators*, M. S. 2005, (Arizona Public Service).

Juan Wang, *A Study of ultracapacitors for power system stabilization*, M. S. 2005, (Ameren Corp).

Prasad Siriki, *The integration of SMES and a STATCOM*, M. S. 2004.

Garauv Karandikar, *Development of a benchmark power system for FACTS/BESS simulation*, M.S. 2004 (Ameren Corp).

Jyothimai Chittireddy, *Determining the Optimal Placement of FACTS Devices using Genetic Algorithms and Enumeration Techniques*, M. S. 2004 (Midwest ISO).

Atmika Singh, *A Comparison of the Hilbert Transform, Prony Analysis, and Levenberg-Marquardt methods for power system modal analysis*, M.S. 2004 (Ph.D. candidate, Engineering Management, Missouri S&T)

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