

Zhifang Wang, PhD

Associate Professor

Department of Electrical and Computer Engineering
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Education

- Ph.D., Cornell University, Electrical and Computer Engineering, Ithaca, NY, USA, Aug 2005.
Dissertation: **Bluetooth Enabled Wireless Network and Its application in Electric Power Systems**,
Advisor: Dr. Robert J. Thomas, IEEE life Fellow
- M.S., Tsinghua University, Electrical Power Engineering, Beijing, China, Aug 1998
Dissertation: **Secondary Voltage Control**, Advisor: Dr. Qiang Lu, IEEE Fellow
- B.S., Tsinghua University, Electrical Power Engineering, Beijing, China 1995
Dissertation: **Dynamic Long-term Voltage Stability**, Advisor: Dr. Yuanzhang Sun, IEEE Senior Member

Appointments

- *Associate Professor*, ECE, Virginia Commonwealth University, 2018- present
- *Assistant Professor*, ECE, Virginia Commonwealth University, 2012- 2018
- *Associate Specialist*, ECE, University of California, Davis, CA, 2010- 2012
- Postdoc, Information Trust Institute, University of Illinois at Urbana-Champaign, 2008-2010
- Postdoc, Electrical and Computer Engineering, Cornell University, 2005-2008

Research Interests

- Power System Modeling and Optimization
- Integration of Renewable Generation
- Grid Vulnerability Analysis
- Voltage Stability and Controls
- Smart Grid Communication Architecture

Teaching Experiences

EGRE 471 Power System Analysis (spring2013, fall2013, fall2014, spring2016, spring2017, spring2018)
EGRE 671 Power System Operation and Controls (Advanced Power System Analysis) – Graduate level
(spring2013, fall2013, fall2014, spring2016, fall2017)
EGRE 573 Sustainable and Efficient Power Systems (spring2015, fall2016, fall2018)
EGRE 336 Intro Communication Systems (spring 2014, spring 2015, fall2018)
EGRE 444 Communication Systems (fall2015, fall2017)
EGRE 402 Capstone Senior Design Projects (fall 2012, spring & fall 2013, spring & fall 2014, spring & fall
2015, spring 2016, fall 2017, spring 2018, fall 2018)
EGRE 692 Independent Study: Power Electronics (fall 2015)
EGRE 697 Directed Research (offered each semester since spring 2013 for my own graduate students)

Honors and Awards

HICSS'48 Best Paper Award (2015)
IEEE Donald G. Fink Award (2013)
IEEE Senior Member (2012)
Cornell Graduate Fellowship (1998)
Chinese Society for Electrical Engineering Scholarship First Prize (1995)

Student Honors and Awards

VCU ECE Outstanding Graduate Award (2017, 2018)
 2017 NAPS Student Paper Contest Award (2017)
 VCU SoE DERI Graduate Awards (2017, 2018)

Sponsorship of Scholarly Activities

Funded projects since joining VCU: (Total awards as PI/co-PI: **1.305 million**, my share: **\$489.5k**)

1. PI, *Random Topology Power Grid Modeling and an Automated Simulation Platform*, DoE-CERTS, through subcontract with Lawrence Berkley National Lab, June 2014 - Dec 2017, \$248,000. (my share \$248k)
2. Co-PI, *Optimizing the Grid Integration of Distributed Solar Energy through Smart Grid Technology, Power Controls, & Public Policy Initiatives.*, VCU PERQ Award, Aug 2015- Dec 2016, \$29,201. (my share \$11.5k)
3. PI, Synthetic Data for Power Grid R&D, DoE ARPA-E, June 2016- Dec 2018, \$1,028,325. (my share \$230k)

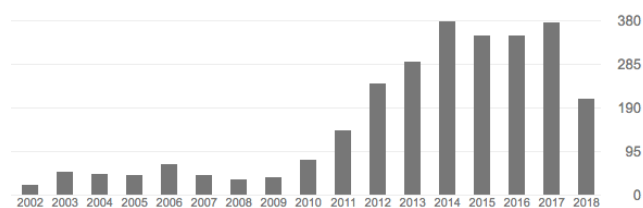
Publications (Supervised student coauthor is indicated with an asterisk `*`)

Summary:

Type	Counts		Recently Submitted
	Since joining VCU (published + accepted)	Total Published	
Journal Paper	4	15	4
Conference Paper	29	46	1
Book Chapters	1	3	0
Total	34	64	5

Google Scholar Citation Record:

Citation indices	All	Since 2013
Citations	2808	1954
h-index	19	16
i10-index	29	23



Web of Science Citation Record:

Citation indices	All
Citations	672
h-index	9
i10-index	9

Only 28 out of 50 publications have been found in Web of Science. The citation count in WoS is also much lower than that in Google scholar. Because a number of important conferences and journals in the area of power system and renewable generation are not included in WoS. The citation record was completed by the VCU Science and Engineering Research Librarian Martha I. Roseberry. A more detailed citation document provided by Martha will be included in volume 2.

Book Chapters (3 published)

- [BC1] [Z. Wang](#), A. Scaglione, R. J. Thomas, contributed book chapter, “**Power Grid Network Analysis for Smart Grid Applications**”, chapter 7 in *Smart Grids: Clouds, Communications, Open Source, and Automation*, edited by David Bakken, CRC Press, 2014.
- [BC2] [Z. Wang](#), A. Scaglione, R. J. Thomas, contributed book chapter, “**Electrical Centrality Measures for Power Grids**”, chapter 12 in *Control and Optimization Theory for Electric Smart Grids*, edited by M. Ilic, and A. Chakraborty, Springer, 2012.
- [BC3] A. Scaglione, [Z. Wang](#), *M. Alizadeh, contributed book chapter, “**New Models for Networked Control in Smart Grid**”, chapter 2 in *Smart Grid Communications and Networking*, edited by E. Hossain, Z. Han, and H. V. Poor, Cambridge University Press, 2011.

Refereed Journal Articles (11 published, 3 accepted, 2 under review)

- **Refereed Journal Articles: Submitted Works under Review**

- [1] *H. Sadeghian, and [Z. Wang](#), “**Distributed PV Installation: Randomized or Optimized**”, IEEE trans. on Sustainable Energy, Submitted 2017. (IF: 4.25, top journal in the area of renewable generation research)
- [2] *M. H. Athari and [Z. Wang](#), “**Stochastic Cascading Failure Model with Uncertain Generation using Unscented Transform**”, IEEE trans. on Sustainable Energy, Submitted 2018.

- **Refereed Journal Articles: Works Accepted for Publication**

- [J15] *M. H. Athari and [Z. Wang](#), “**Introducing Voltage-level dependent Parameters to Synthetic Grid Electrical Topology**”, IEEE trans. on Smart Grid, Submitted 2017, Accepted June 2018. (IF: 5.68, top journal in the area of power system research).

- **Refereed Journal Articles: Completed Works**

- [J14] A. Birchfield, E. Schweitzer, *M. H. Athari, et al., and [Z. Wang](#), “**Validation Metrics to Assess the Realism of Synthetic Power Grids**”, Energies 2017, 10(8), 1233; doi:10.3390/en10081233. (IF: 2.62)
- [J13] *M. H. Athari and [Z. Wang](#), “**Impacts of Wind Power Uncertainty on Grid Vulnerability to Cascading Overload Failures**”, in IEEE Transactions on Sustainable Energy, vol. 9, no. 1, pp. 128-137, Jan. 2018. (IF: 4.91, top journal in the area of renewable generation research)
- [J12] *S. H. Elyas, [Z. Wang](#), “**Improved Synthetic Power Grid Modeling with Correlated Bus Type Assignments**”, IEEE Trans on Power Systems, 32(5): 3391-3402, 2017. (IF: 5.68, top journal in the area of power system research, citation 3)
- [J11] S. Galli, A. Scaglione and [Z. Wang](#), “**For the Grid and through the Grid: the role of power line communications in the Smart grid**” in the special issue "Smart Grid: The Electric Energy System of the Future," Proceedings of the IEEE, 99(6):998-1027, 2011. (IF: 5.629, citation 653)
IEEE Xplore [Top 100 Downloaded Articles](#) for five months from June to October 2011, selected by the IEEE Communication Society as [one of the best readings in PLC](#). Receive the [2013 IEEE Donald G. Fink Prize Paper Award](#)
- [J10] *M. Alizadeh, *X. Li, [Z. Wang](#), A. Scaglione, R. Melton, “**Demand Side Management in the Smart Grid: Information Processing for the Power Switch**”, IEEE Signal Processing Magazine: Special Issue on Smart Grid, 2011. (IF: 6.671, citation 67)
- [J9] [Z. Wang](#), R. J. Thomas, and A. Scaglione, “**Generating Statistically Correct Random Topologies for Testing Smart Grid Communication and Control Networks**”, *IEEE Transactions on Smart Grid*, volume 1(1):28-39, 2010. (IF: 3.190, citation 155, top journal in the area of smart grid research)
- [J8] [Z. Wang](#), R. J. Thomas, and Z. J. Haas, “**Performance comparison of Bluetooth scatternet formation protocols for multi-hop networks**”, *Wireless Networks*, volume 15(2), p.209–226, 2009. (IF: 1.590,

citation 21)

- [J7] *X. Yao, Y. Sun, Z. Wang, “**Studies on the Optimal Allocation of Reactive Power Sources**”, *Automation of Electric Power Systems*, vol. 23(3), 1999. (IF: 3.939, citation 18)
- [J6] Y. Sun, Z. Wang, *X. Yao, “**Study on Secondary Voltage control of Power System**”, *Automation of Electric Power Systems*, vol. 23(9), p.9-14, 1999. (IF: 3.939, citation 66)
- [J5] Y. Sun, Z. Wang, “**OLTC Simulation Model and its Impact on the Stability of Voltage and Reactive Power**”, *Automation of Electric Power Systems*, vol. 22 (5), p.10-13, 1998. (IF: 3.939, citation 6)
- [J4] Z. Wang, Y. Sun, G. Zhang, Y. Huang, “**Simulation Analysis of Nonlinear Optimal Excitation Controllers Improving the Stability of the Central-China Power System**”, *Power System Technology*, vol. 22(3), p.11-13, 1998. (IF: 3.449, citation 5)
- [J3] Y. Sun, Z. Wang, “**Dynamic Load Restoration Modeling and Its Impact on Voltage Stability**”, *Automation of Electric Power Systems*, vol. 21(1), p. 29-32, 1997. (IF: 3.939, citation 4)
- [J2] Y. Sun, Z. Wang, Q. Lu, “**The Effects of Static Var Compensator On the Voltage Stability**”, *Proceedings of the Chinese Society for Electrical Engineering*, volume 17(6), p.373-376, 1997. (IF: 4.239, citation 88)
- [J1] Y. Sun, Z. Yang, Z. Wang, Q. Lu, “**Voltage Stability Improvement Using ASVG Nonlinear Control**”, *Automation of Electric Power Systems*, volume 20(6), p.21-26, 1996. (IF: 3.939, citation 21)

Refereed Conference Articles

(44 published, 2 accepted, 1 submitted, 1 Best Paper Award, 1 Student Contest Award)

- **Refereed Conference Articles: Submitted Works under Review**

- [1] *M. H. Athari, K. Hannah, Z. Wang, “**Automated Enhancement of Transmission Planning Bus-Branch Model with EMS Node-Breaker Substation Models**”, 2018 CIGRE Grid of The Future Symposium, Washington DC.

- **Refereed Conference Articles: Works Accepted for Publication**

- [C46] *H. Sadeghian, *H. O. Alwan, Z. Wang, “**Decentralized Demand Side Management Optimization for Residential and Commercial Loads with PV Installation**”, 2018 IECON, Washington DC, UA, Oct 21-23, 2018.
- [C45] *M. H. Athari, Z. Wang, “**Grid Vulnerability Analysis based on Probabilistic Cascading Failure Model and Wind Power Installation**”, 2019 HICSS, Hawaii, USA, Jan 2-8, 2019.

- **Refereed Conference Articles: Completed Works**

- [C44] *H. Sadeghian, *S. H. Elyas, Z. Wang, “**A Novel Algorithm for Statistical Assignment of Transmission Capacities in Synthetic Grid Modeling**”, 2018 IEEE PES GM, Portland, OR, USA, Aug 4-6, 2018.
- [C43] *Z. Wang, *M. H. Athari, *S. H. Elyas, “**Statistically Analyzing Power System Network**”, 2018 IEEE PES GM, Portland, OR, USA, Aug 4-6, 2018.
- [C42] *H. Sadeghian, Z. Wang, “**Photovoltaic Generation in Distribution Networks: Optimal vs. Random Installation**”, IEEE PES 2017 Innovative Smart Grid Technologies (ISGT2018) Conference, Washington DC, USA, Feb 19-22, 2018.
- [C41] *H. Sadeghian, Z. Wang, “**Decentralized Demand Side Management with Rooftop PV in Residential Distribution Network**”, IEEE PES 2017 Innovative Smart Grid Technologies (ISGT2018) Conference,

Washington DC, USA, Feb 19-22, 2018.

- [C40] *H. Athari, Z. Wang, “**Interdependence of Transmission Branch Parameters on the Voltage Levels**”, 2018 HICSS, Big Island, HI, Jan 2-8, 2018.
- [C39] *F. Liu, Z. Wang, “**A Novel Adaptive Genetic Algorithm for Wind Farm Layout Optimization**”, 2017 North American Power Symposium (NAPS), Sep 17-19, 2017. (**Student Paper Contest Award**)
- [C38] *H. Sadeghian, Z. Wang, “**Combined Heat and Power Unit Commitment with Smart Parking Lots of Plug-in Electric Vehicles**”, 2017 North American Power Symposium (NAPS), Morgantown, WV, Sep 17-19, 2017.
- [C37] *S. H. Elyas, *H. Alwan, *H. Sadeghian, Z. Wang, “**Optimized Household Demand Management with Local Distributed Solar Generation**”, 2017 North American Power Symposium (NAPS), Morgantown, WV, Sep 17-19, 2017.
- [C36] *M. H. Athari, C. Yang, Z. Wang, “**Sequential Optimal Placement of Distributed Photovoltaics using Downstream Power Index**”, 2017 North American Power Symposium (NAPS), Morgantown, WV, Sep 17-19, 2017.
- [C35] *S. H. Elyas, Z. Wang, R. J. Thomas, “**On the Statistical Settings of Generation Capacities and Dispatch in a Synthetic Grid Modeling**”, 10th Bulk Power Systems Dynamics and Control Symposium (IREP’2017), Espinho, Portugal, Aug 27-Sep 1 2017.
- [C34] *M. H. Athari, Z. Wang, “**Statistical Study on Transformer Parameters for the Validation of Synthetic Grid Modeling**”, 10th Bulk Power Systems Dynamics and Control Symposium (IREP’2017), , Espinho, Portugal, Aug 27-Sep 1 2017.
- [C33] *M. H. Athari, Z. Wang, “**Studying Cascading Overload Failures under High Penetration of Wind Generation**”, 2017 IEEE PES General Meeting, Chicago, IL USA, July 16-20, 2017.
- [C32] *M. H. Athari, Z. Wang, *S. H. Elyas, “**Time-Series Analysis of Photovoltaic Distributed Generation Impacts on a Local Distributed Network**”, PowerTech 2017, Manchester, UK, June 18-22, 2017.
- [C31] *H. Sadeghian, *M. H. Athari, Z. Wang “**Optimized Solar Photovoltaic Generation in a Real Local Distribution Network**”, IEEE PES 2017 Innovative Smart Grid Technologies (ISGT2017) Conference, Arlington, VA USA, Apr 23-26, 2017.
- [C30] Z. Wang, *S. H. Elyas, “**On the Scaling Property of Power Grids**”, HICSS’50, Big Island, HI, Jan 4-7, 2017.
- [C29] *S. H. Elyas, Z. Wang, “**Statistical Analysis of Transmission Line Capacities for the Random Topology Power Grid Modeling**”, IEEE PES 2016 Innovative Smart Grid Technologies (ISGT2016) Conference, Minneapolis, MN USA, Sep 6-9, 2016.
- [C28] *M. H. Athari, Z. Wang, “**Modeling the Uncertainties in Renewable Generation and Smart Grid Loads for the Study of the Grid Vulnerability**”, IEEE PES 2016 Innovative Smart Grid Technologies (ISGT2016) Conference, Minneapolis, MN USA, Sep 6-9, 2016.
- [C27] Z. Wang, *S. H. Elyas, R. J. Thomas, “**Generating Synthetic Power System Data with Accurate Electric Topology and Parameters**”, the 51st International Universities Power Engineering Conference (UPEC 2016), Coimbra, Portugal, Sep 6-9, 2016.
- [C26] *S. H. Elyas, Z. Wang, “**A Multi-objective Optimization Algorithm for Bus Type Assignments in Random Topology Power Grid Model**”, HICSS’49, Kauai, HI, Jan 2016.
- [C25] Z. Wang, *S. H. Elyas, R. J. Thomas, “**A Novel Measure to Characterize the Bus Type Assignments of Realistic Power Grids**”, PowerTech 2015, Eindhoven, Netherlands, June 2015.
- [C24] Z. Wang, R. J. Thomas, “**On Bus Type Assignments in Random Topology Power Grid Models**”,

HICSS'48, Kauai, HI, Jan 2015. (HICSS'48 Best Paper Award).

- [C23] Z. Wang, “**Managing Microgrid Demands with Adaptive Hybrid Load Forecasting**”, NSF-UMN Workshop on Electric Power Curriculum, Minneapolis MN, Oct 2014.
- [C22] Z. Wang, “**A Fast and Adaptive Load Forecasting Model for Microgrid Demands**”, Darnell Energy Summit, Richmond, VA, Sep 2014.
- [C21] *F. Liu, Z. Wang, “**Electric Load Forecasting Using Parallel RBF Neural Network**”, invited paper to the special session “**Information Processing in the Smart Grid**”, 1st IEEE Global Conference on Signal and Information Processing, Austin, Texas, December 2013, p.531-534.
- [C20] Z. Wang, A. Scaglione, “**The impact of volatile generation/load profile in Smart Grid on the grid vulnerability to cascading overload failures**”, special session “**Smart Grid Communication and Networks**”, Asilomar Conference, Pacific Grove, CA, Dec 2012.
- [C19] Z. Wang, *X. Li, V. Muthukumar A. Scaglione, S. Peisert, C. McParland “**Networked Loads in the Distribution Grid**”, Invited Paper to the special session “Information processing for smart grid” 2012 APSIPA Conference, Hollywood, CA, Dec 2012.
- [C18] Z. Wang, A. Scaglione, “**Comparison of Grid Vulnerability Measures to Cascading Overload Failures**”, Invited Paper to the special session “Information processing for smart grid” 2012 APSIPA Conference, Hollywood, CA, Dec 2012.
- [C17] C. Chen, S. Kishore, Z. Wang, *M. Alizadeh, A. Scaglione, “**A Cournot Game Analysis on Market Effects of Queuing Energy Request as Demand Response**”, 2012 IEEE Power & Energy Society General Meeting, San Diego, CA, July 2012.
- [C16] *M. Alizadeh, Z. Wang, A. Scaglione, C. Chen, S. Kishore, “**On the Market Effects of Queuing Energy Requests as an Alternative to Storing Electricity**”, 2012 IEEE Power & Energy Society General Meeting, San Diego, CA, July 2012.
- [C15] *X. Li, Z. Wang, A. Scaglione, “**Decentralized Data Processing and Management in Smart Grid via Gossiping**”, invited paper to IEEE 7th Sensor Array and Multichannel Signal Processing Workshop, Hoboken, NJ, 2012.
- [C14] Z. Wang, A. Scaglione, R. J. Thomas, “**A Markov-Transition Model for Cascading Failures in Power Grids**”, HICSS'45, Jan 4-7, 2012, Maui, Hawaii.
- [C13] *M. Alizadeh, Z. Wang, A. Scaglione, “**Demand Side Management Trends in the Power Grid**”, IEEE 4th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2011), Dec 13-16, 2011, San Juan, Puerto Rico.
- [C12] S. Galli, A. Scaglione, and Z. Wang, “**Power Line Communications and the Smart Grid**”, 1st IEEE International Conference on Smart Grid Communications (SmartGridComm), Gaithersburg, Maryland, Oct 4-6 2010.
- [C11] Z. Wang, A. Scaglione and R.J. Thomas, “**Compressing Electrical Power Grids**”, 1st IEEE International Conference on Smart Grid Communications (SmartGridComm), Gaithersburg, Maryland, October 4-6, 2010.
- [C10] Z. Wang, A. Scaglione and R.J. Thomas, “**Electrical Centrality Measures for Electric Power Grid Vulnerability Analysis**”, invited article for the 49th IEEE Conference on Decision and Control, Atlanta, Georgia, December 15-17, 2010.
- [C9] *M. Alizadeh, A. Scaglione, and Z. Wang, “**On the impact of Smart Grid metering infrastructure on load forecasting**”, invited article for the 48th Annual Allerton Conference on Communication, Control, and Computing, p. 1628-1636, Monticello, Illinois, Sep29 – Oct 1, 2010.

- [C8] [Z. Wang](#), A. Scaglione and R. J. Thomas, “**The Node Degree Distribution in Power Grid and Its Topology Robustness under Random and Selective Node Removals**”, the 1st IEEE International Workshop on Smart Grid Communications, Cape Town, South Africa, May 2010.
- [C7] [Z. Wang](#), A. Scaglione and R. J. Thomas, “**On Modeling Random Topology Power Grids for Testing Decentralized Network Control Strategies**”, the 1st IFAC Workshop on Distributed Estimation and Control in Networked System, NecSys'09, September 24-26, 2009
- [C6] [Z. Wang](#), A. Scaglione and R. J. Thomas, “**Generating Random Topology Power Grids**”, the 41st Annual Hawaii International Conference on System Sciences, HICSS-41, January, 2008
- [C5] *S. Kirti, [Z. Wang](#), A. Scaglione, and R. Thomas, “**On the Communication Architecture for Wide-Area Real-Time Monitoring in Power Networks**,” the 40th Annual Hawaii International Conference on System Sciences, HICSS-40, Big Islands, Jan 2007
- [C4] C. Jaeseok, R. Thomas, [Z. Wang](#), A. El-Keib, R. Billinton, “**A study on probabilistic optimal reliability criterion determination in composite power system expansion planning**”, IEEE Power Engineering Society General Meeting, p.1277 – 1284, volume (2), June 12-16, 2005.
- [C3] [Z. Wang](#), Z. Haas, and R. J. Thomas, “**BlueNet II – A Detailed Realization of the Algorithm and Performance Analysis**”, HICSS-36, Big Island, Hawaii, January 2003.
- [C2] [Z. Wang](#), R. J. Thomas, Z. Haas, “**Bluenet - a New Scatternet Formation Scheme**”, 35th Hawaii International Conference on System Science, HICSS-35, Big Island, Hawaii, January 2002.
- [C1] Y. Sun, C. Sun, [Z. Wang](#), Q. Lu, “**Voltage Security Enhancement Using ASVG Nonlinear Control**”, the International Conference on Energy Management and Power Delivery, IEEE EMPD-1995, p. 337-341, Piscataway, NJ, 1995.

Invited Talks and Presentations

- 2018 PES General Meeting, “Power Grid Vulnerability with Renewable Integration”.
- 2018 Dominion Energy Power, “Research at VCU EPES Lab”
- 2018 Iowa State University, “Power Grid Vulnerability and Synthetic Grid Modeling”
- 2018 WCSM, “Impacts of Renewables on Power System Vulnerability”.
- 2017 NAPS, West Virginia University, “Wind Farm Layout Optimization”.
- 2017 DoE ARPA-e Review, “Integration of AutoSynGrid Model with MATLAB”.
- 2017 VCU, “Power System Modeling and Modernization: Introducing VCU EPES Lab Research”.
- 2017 DoE ARPA-e Review, “Interdependence on Voltage Levels”, Washington DC
- 2017 VCU, Department of Statistics, “Statistical Modeling of Power Grid Uncertainties and Vulnerability”.
- 2017 DoE CERTS Review, “Random Topology Grid Modeling and Simulation Platform”, Washington, DC
- 2017 DoE ARPA-e Review, “Statistical Modeling of Transformer Parameters”.
- 2016 DoE ARPA-e Review, “Scaling Properties of Power Grids and Validation Measures of Synthetic Grid Modeling”.
- 2016 University of Illinois at Urbana-Champaign, ECE Seminar, “Synthetic Grid Modeling with Random Small-world Topology and Electrical Parameters”
- 2015 Dominion Workshop, “VCU EPES Lab: Research Projects and Collaboration Opportunities”.
- 2014, 2015, 2016, DoE CERTS Review, “Synthetic Grid Modeling and Simulation Platform”.
- 2014 Darnell Energy Summit, “A Fast and Adaptive Load Forecasting Model for Microgrid Demands”.
- 2014 NSG-UMN workshop, “Managing Micro-grid Demands with Adaptive Hybrid Load Forecasting”.
- 2012 Santa Fe Institute workshop: Power Grids as Complex Networks, “Cascading Overload Failures in

Power Grid”

- 2011 SAMSI Workshop: Scientific Problems for the Smart Grid Workshop, “Power Grid Vulnerability to Cascading failures”.
- 2011 TCIPG Industry Workshop, “Metrics of power grid vulnerability to cascading failures”
- 2010 SAMSI seminar on the applications of network theory to smart grid, “Decentralized Monitoring and Control Architecture for Smart Grids”
- 2010 TCIPG Seminar, “Electrical Centrality Measures for Electrical Power Grid Vulnerability Analysis”
- 2008 TCIP Industry Workshop, “Random Topology Power Grids”

Completed Graduate Advisees:

- PhD Degree:
 - Seyyed Hamid Elyas, “Synthetic Power Grid Modeling based on Statistical Analysis”
Date Graduated: May 2017, Employment: **Smart Wire Inc.**
- Master Degree:
 - Shiyang Song, research project “Power Quality Analysis of Microgrid”.
Date Graduated: Aug 2015, Employment: **Dominion Virginia Power**
Passed national power engineer exams and became a **Certified Power Engineer** in 2016

Student Advising:

Current Research Students under my supervision in the EPES lab:

- PhD students: 3
 - Hayder Alwan (Fall 2014 ---), passed Q-exam
 - Mir Hadi Athari (Fall 2015---), passed Q-exam and Proposal Defense
 - Hamidreza Sadeghian (Fall 2016---), passed Q-exam
- MS students: 3
 - Nathaniel Moore (Fall 2014 ---)
 - Wesley Barrier (Fall 2015 ---)
 - Tianshu Yang (Fall 2016 ---)
- Undergrad students: 1
 - James Robinson (Fall 2016---)
- DERI High School students: 2
 - Charles Yang (Fall 2016 --- Spring 2017)
 - Makenzi Moore (Fall 2016 --- Spring 2017)
- Capstone Senior Design Projects Advised:
 - 2012-2013, **Power Analysis Toolkit for VCU Micro-Grid**
 - Sai Priya Veerapaneni
 - Michael Roberts
 - Udit Chavda
 - Gongbo Song

2013-2014, **Multi-Functional Intelligent UPS for High Power Electronic Devices**

Jasdeep Kandola
Rameez Khimani
MacPherson Stevens
Raleigh Waters

2014-2015, **Photocell Optimization through Thermoelectric Generation**

Brian Nguyen,
Dante Johnson,
General Roberts

2015-2016, **Power Quality Study of Third Floor Clean Room and Harmonic Isolation via Power Inverter Isolation**

Aubrey Buckner
Gabriel Knight
Bart Thornton

2017-2018, **Modular, Lower-Arm 3D Printed Prosthesis**

Lauren Linkols
Sofia Duarte
Johhny Bui
Zack Clement

Major University, School, and Departmental Commitments:

VCU SOE:

NWCIT Committee (2015),
Grade Appeal Committee (2016).

VCU ECE:

Graduate Committee (2015-present),
Faculty Search Committee (2014, 2016, 2017),
ECE Strategic Plan Committee (2016-present).

Coordinator of ECE graduate seminars (2015-present):

Invited distinguished scholars and experts from outside to give seminar talks for ECE graduate students and faculties, enhanced interdisciplinary collaborations and promoted active engagement of graduate students.

Service to Profession:

- **NSF Panelist:** EPCN (2015), Eager-DCL (2015).
- **Industry proposal Review:** VEDP proposal review (2014).
- **Invited Textbook Review:** A first Course in Electrical and Computer Engineering (2017).
- **Technical Program Committee:**
 - IEEE SmartGridComm (2013, 2015),
 - International conference on Intelligent Green Building and Smart Grid (2014).
- **Conference Session Chair:**
 - 2012 Asilomar Conference, “*Smart Grid Communication and Networks*”

- 2013 IEEE SmartGridComm, “Pricing Demand Response”
- 2013 CMOS Symposium on Emerging Technologies Research, “Green Energy”
- 2017 NAPS Conference, “Transmission Systems Voltage Control”
- 2018 BIT WCSM, “Energy Harvesting, Storage, Conversion, and Saving”.
- **Journal Reviewer:** IEEE Transactions on Power Systems, IET Renewable Power Generation, IEEE Transactions on Smart Grid, IEEE Transactions on Power Electronics, IEEE Transactions on Industrial Informatics, Journal of Network and Computer Applications, IEEE Journal on Selected Areas in Communications: Smart Grid Communications Series.
- **Conference Reviewer:** IEEE PES GM, IEEE SmartGridComm, NAPS, IEEE PES ISGT, HICSS, CDC.
- **Academic Membership:**
 - IEEE Senior Member, IEEE Power and Energy Society member.

Collaborators & Other Affiliations:

Collaborators: Prof. Robert J. Thomas (Cornell University), Prof. Thomas Overbye (Texas A&M), Prof. James S. Thorp (Virginia Tech), Prof. Dave Bakken (Washington State University), Prof. Neng Fan (University of Arizona), Dr. Phil Powell (Dominion Virginia Power), Dr. Stefano Galli (ASSIA, Inc), Prof. Shaline Kishore (Lehigh University), Prof. Raissa D’Souza (University of California Davis/Santa Fe Institute), Prof. Anna Scaglione (Arizona State Univ), Prof. Williams H. Sanders (University of Illinois), Prof. Hao Zhu (University of Texas Austin), Dr. Ray Zimmerman (Cornell Univ)

Previously Co-advised graduate students: Feng Liu (VCU, 2013-2014), Shiyang Song (VCU, Dominion, 2013-2015), Rameez Khimani (VCU, 2014-2015), Shrut Kirti (Cornell Univ, 2005-2008), Mahnoosh Alizadeh (UC Davis, 2008-2010), Xiao Simon Li (UC Davis, 2008-2010), Xiaoyin Yao (Tsinghua University, 1996-1998).