Roshanak Nateghi

PhD, US Citizen

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Webpage
Linkedin *Google Scholar*

Academic Appointments

Purdue University, West Lafayette, IN

2021–Present ***Associate Professor***, *School of Industrial Engineering*.

2019–Present ***Executive Committee Member***, *Purdue Climate Change Research Center*.

2015–Present ***Affiliate Faculty***, *Center for the Environment*.

2015–Present ***Affiliate Faculty***, *Purdue Climate Change Research Center*.

2015–present ***Affiliate Faculty***, *Ecological Science and Engineering*.

2015–2021 ***Assistant Professor***, *School of Industrial Engineering & Division of Environmental and Ecological Engineering*.

Non-Academic Appointments

US Department Of Energy, Office Of Energy Efficiency & Renewable Energy, Building Technology Office, Washington, DC

2021–Present ***AAAS Science and Technology Policy Fellow***.

Education

2009–2012 **PhD, Geography and Environmental Engineering**, *Johns Hopkins University*, Baltimore, MD.

2007–2009 **Master of Science in Engineering, Geography and Environmental Engineering**, *Johns Hopkins University*, Baltimore, MD.

2002–2006 **Master of Engineering, Mechanical Engineering**, *Imperial College London, UK*, (*Note:* The Master of Engineering program at Imperial College is a direct 4-year Master's program).

Research Experience

2012–2015 ***Postdoctoral Fellow***, *Geography and Environmental Engineering, Johns Hopkins University, Baltimore, MD*.

2012–2015 ***Affiliate Member***, *Systems Institute*.

2012–2015 ***Affiliate Member***, *Environment, Energy, Sustainability and Health Institute*.

2013–2015 **Visiting Scholar**, *Resources for the Future, Washington, DC*.

Research Interests and Expertise

Methodological

- big data; statistical machine learning; predictive modeling; computer vision; social media analytics; uncertainty quantification; simulation; risk and decision analysis; complexity theory

Application Areas

- sustainable urban systems; multi-hazard hazards risk analysis; climate change impact assessment; urban resilience; energy-water-food nexus.

Grants Awarded

Federal Grants

2013–2017 Investigators: **Roshanak Nateghi (PI)**, *Program: National Science Foundation Science Engineering and Education for Sustainability (NSF SEES)*, Proposal Title: "Sustainable Energy Infrastructure Planning", $550,915.00.

2017–2020 Investigators: Makaran Hastak (PI), **Roshanak Nateghi (Co-PI),** Walley Tyner (Co-PI), *Program: National Science Foundation Humans, Disasters, and the Built Environment*, Proposal Title: An Investment Prioritization Decision Framework that Integrates the Growing Risks of Severe Weather-Induced Outages., $468,851.00.

2018–2021 Investigator: **Roshanak Nateghi (PI),** Daniel Chavas (Co-PI), *Program: National Science Foundation Civil Infrastructure Systems*, Proposal Title: Data-Centric Uncertainty-informed Framework for Resilience Analytics of Critical Infrastructure Under Extreme Climate Events.
$222,102.00

2018–2021 Investigators: Andrew Liu (PI), **Roshanak Nateghi (Co-PI)**, Gesualdo Scutari (Co-PI), *Program: National Science Foundation Critical Resilient Infrastructure Systems and Processes*, Proposal Title: Distributed Edge Computing to Improve Resilience of Interdependent Systems, $461,314.00.

2020–2023 Investigator: **Roshanak Nateghi**, *Program: National Science Foundation Civil Infrastructure Systems* , Proposal Title: A Deeply Integrated Physics-Based and Data-Driven Approach for Effective Resilience Management of the Transmission Grid, $350,000.

2021–2022 Investigator: **Roshanak Nateghi (PI)**, *Program: National Science Foundation I-Corps*, Proposal Title: Global solar irradiance forecasting with flexible prediction time horizons, Proposal Title: Global solar irradiance forecasting with flexible prediction time horizons.
$50,000.00

Seed Grants

05/2017–09/2017 Investigator: **Roshanak Nateghi**, *Purdue Support for Exploratory Research Seed Grant*, Proposal Title: A Transformative Framework to Enhance Sustainability at the Energy-Water Nexus, $10,000.00.

05/2016-05/2017 Investigators: **Roshanak Nateghi (PI)**, Harshsa Honnappa (Co-PI), David Yu (Co-PI), *Purdue Center for the Environment Seed grant*, Proposal Title: Title: Sustainable Adequacy Planning in the Residential Building Stock under Deep Uncertainty, $20,000.00.

05/2018-05/2019 Investigators: **Roshanak Nateghi (PI)**, Suresh Rao (Co-PI), Z. Ma (Co-PI), *Purdue Center for the Environment Seed grant*, Proposal Title: Mitigating Urban Drought Risks in a Changing Climate, $15,000.00.

06/2019-06/2020 Investigators: Sarah McMillan (PI), **Roshanak Nateghi (Co-PI)**, Zhao Ma (Co-PI), Brady Hardiman (Co-PI), Proposal Title: Socio-Ecological Resilience of Urban Ecosystems to Extreme Climate Events, $66,680.00.

Publications

Journal Article (Forthcoming)

- *Note: * Indicates students or postdoctoral fellows advised by Dr. Nateghi.*

2022 Debora Maia-Silva*, Rohini Kumar, **Roshanak Nateghi**, The Goldilocks zone in cooling demand: What can we do better?, *Earth's Future*.
DOI:10.1029/2021EF002476

2022 Renee Obringer*, **Roshanak Nateghi**, Debora Maia-Silva*, Sayanti Mukherjee, C.R. Vineeth*, Douglas Brent McRoberts, Rohini Kumar, Anthropogenic warming intensifies household air conditioning demand across the United States, *Earth's Future*. DOI:10.1029/2021EF002434

2022 Benjamin Rachunok*, Chao Fan, Ronald Lee, **Roshanak Nateghi**, Ali Mostafavi, Is the data suitable? The comparison of keyword versus location filters in crisis informatics using Twitter data, *International Journal of Information Management Data Insights*.

Journal Articles

2022 Negin Alemazkoor*, Mazdak Tootkaboni, **Roshanak Nateghi**, and Arghavan Louhghalam. Smart-meter big data for load forecasting: An alternative approach to clustering. *IEEE Access; DOI: 10.1109/ACCESS.2022.3142680*. IEEE, 2022.

2021 **Roshanak Nateghi**, Jeannette Sutton, and Pamela Murray-Tuite. The frontiers of uncertainty estimation in interdisciplinary disaster research and practice. *Risk analysis*, volume 41, pages 1129–1135. Wiley Online Library, 2021.

2021 **Roshanak Nateghi** and Terje Aven. Risk analysis in the age of big data: The promises and pitfalls. *Risk Analysis; DOI: 10.1111/risa.13682*. Wiley Online Library, 2021.

2021 Benjamin Rachunok* and **Roshanak Nateghi**. Overemphasis on recovery inhibits community transformation and creates resilience traps. *Nature communications*, volume 12, pages 1–11. Nature Publishing Group, 2021.

2021 Benjamin Rachunok*, Jackson Bennett*, Roger Flage, and **Roshanak Nateghi**. A path forward for leveraging social media to improve the study of community resilience. *International Journal of Disaster Risk Reduction*, volume 59, page 102236. Elsevier, 2021.

2021 Renee Obringer* and **Roshanak Nateghi**. What makes a city 'smart' in the anthropocene? a critical review of smart cities under climate change. *Sustainable Cities and Society*, volume 75, page 103278. Elsevier, 2021.

2021 Renee Obringer*, Benjamin Rachunok*, Debora Maia-Silva*, Maryam Arbabzadeh, **Roshanak Nateghi**, and Kaveh Madani. The overlooked environmental footprint of increasing internet use. *Resources, Conservation and Recycling*, volume 167, page 105389. Elsevier, 2021.

2021 Pamela Murray-Tuite, Y. Gurt Ge, Christopher Zobel, **Roshanak Nateghi**, and Haizhong Wang. Critical time, space, and decision-making agent considerations in human-centered interdisciplinary hurricane-related research. *Risk Analysis*, volume 41, pages 1218–1226. Wiley Online Library, 2021.

2021 Y. Gurt Ge, Christopher W Zobel, Pamela Murray-Tuite, **Roshanak Nateghi**, and Haizhong Wang. Building an interdisciplinary team for disaster response research: A data-driven approach. *Risk analysis*, volume 41, pages 1145–1151. Wiley Online Library, 2021.

2021 Minsoo Choi*, Benjamin Rachunok*, and **Roshanak Nateghi**. Short-term solar irradiance forecasting using convolutional neural networks and cloud imagery. *Environmental Research Letters*, volume 16, page 044045. IOP Publishing, 2021.

2021 Jackson Bennett*, Benjamin Rachunok*, Roger Flage, and **Roshanak Nateghi**. Mapping climate discourse to climate opinion: An approach for augmenting surveys with social media to enhance understandings of climate opinion in the united states. *PloS one*, volume 16, page e0245319. Public Library of Science San Francisco, CA USA, 2021.

2020 Ellen Wongso*, **Roshanak Nateghi**, Benjamin Zaitchik, Steven Quiring, and Rohini Kumar. A data-driven framework to characterize state-level water use in the united states. *Water Resources Research*, volume 56, page e2019WR024894. Wiley Online Library, 2020.

2020 Tariq Usman Saeed*, **Roshanak Nateghi**, Thomas Hall, and Brigitte Waldorf. Statistical analysis of area-wide alcohol-related driving crashes: a spatial econometric approach. *Geographical Analysis*, volume 52, pages 394–417. Wiley Online Library, 2020.

2020 Leigh Raymond, Douglas Gotham, William McClain, Sayanti Mukherjee*, **Roshanak Nateghi**, Paul Preckel, Peter Schubert, Shweta Singh, and Elizabeth Wachs. Projected climate change impacts on indiana's energy demand and supply. *Climatic change*, volume 163, pages 1933–1947. Springer, 2020.

2020 Benjamin Rachunok* and **Roshanak Nateghi**. The sensitivity of electric power infrastructure resilience to the spatial distribution of disaster impacts. *Reliability Engineering & System Safety*, volume 193, page 106658. Elsevier, 2020.

2020 Aiyshwariya Paulvannan Kanmani*, Renee Obringer*, Benjamin Rachunok*, and **Roshanak Nateghi**. Assessing global environmental sustainability via an unsupervised clustering framework. *Sustainability*, volume 12, page 563. Multidisciplinary Digital Publishing Institute, 2020.

2020 Renee Obringer*, Sayanti Mukherjee, and **Roshanak Nateghi**. Evaluating the climate sensitivity of coupled electricity-natural gas demand using a multivariate framework. *Applied Energy*, volume 262, page 114419. Elsevier, 2020.

2020 Renee Obringer*, Rohini Kumar, and **Roshanak Nateghi**. Managing the water–electricity demand nexus in a warming climate. *Climatic Change*, volume 159, pages 233–252. Springer, 2020.

2020 Debora Maia-Silva*, Rohini Kumar, and **Roshanak Nateghi**. The critical role of humidity in modeling summer electricity demand across the united states. *Nature communications*, volume 11, pages 1–8. Nature Publishing Group, 2020.

2020 Rohini Kumar, Benjamin Rachunok*, Debora Maia-Silva*, and **Roshanak Nateghi**. Asymmetrical response of california electricity demand to summer-time temperature variation. *Scientific Reports*, volume 10, pages 1–9. Nature Publishing Group, 2020.

2020 Jackson Bennett*, Aidan Baker*, Emily Johncox*, and **Roshanak Nateghi**. Characterizing the key predictors of renewable energy penetration for sustainable and resilient communities. *Journal of Management in Engineering*, volume 36, page 04020016. American Society of Civil Engineers, 2020.

2020 Negin Alemazkoor*, Benjamin Rachunok*, Daniel Chavas, Andrea Staid, Arghavan Louhghalam, **Roshanak Nateghi**, and Mazdak Tootkaboni. Hurricane-induced power outage risk under climate change is primarily driven by the uncertainty in projections of future hurricane frequency. *Scientific Reports*, volume 10, pages 1–9. Nature Publishing Group, 2020.

2019 Benjamin Rachunok*, Jackson B Bennett*, and **Roshanak Nateghi**. Twitter and disasters: a social resilience fingerprint. *IEEE Access*, volume 7, pages 58495–58506. IEEE, 2019.

2019 Renee Obringer*, Rohini Kumar, and **Roshanak Nateghi**. Analyzing the climate sensitivity of the coupled water-electricity demand nexus in the midwestern united states. *Applied Energy*, volume 252, page 113466. Elsevier, 2019.

2019 Sayanti Mukherjee*, CR Vineeth*, and **Roshanak Nateghi**. Evaluating regional climate-electricity demand nexus: a composite bayesian predictive framework. *Applied Energy*, volume 235, pages 1561–1582. Elsevier, 2019.

2019 Sayanti Mukherjee* and **Roshanak Nateghi**. A data-driven approach to assessing supply inadequacy risks due to climate-induced shifts in electricity demand. *Risk Analysis*, volume 39, pages 673–694. Wiley Online Library, 2019.

2019 C. Bayan Bruss*, **Roshanak Nateghi**, and Benjamin Zaitchik. Explaining national trends in terrestrial water storage. *Frontiers in Environmental Science*, volume 7, page 85. Frontiers, 2019.

2019 Panteha Alipour*, Sayanti Mukherjee*, and **Roshanak Nateghi**. Assessing climate sensitivity of peak electricity load for resilient power systems planning and operation: A study applied to the texas region. *Energy*, volume 185, pages 1143–1153. Elsevier, 2019.

2018 **Roshanak Nateghi**. Multi-dimensional infrastructure resilience modeling: an application to hurricane-prone electric power distribution systems. *IEEE Access*, volume 6, pages 13478–13489. IEEE, 2018.

2018 Yu Qiao, Tariq Usman Saeed*, Sikai Chen, **Roshanak Nateghi**, and Samuel Labi. Acquiring insights into infrastructure repair policy using discrete choice models. *Transportation Research Part A: Policy and Practice*, volume 113, pages 491–508. Elsevier, 2018.

2018 Renee Obringer* and **Roshanak Nateghi**. Predicting urban reservoir levels using statistical learning techniques. *Scientific Reports*, volume 8, pages 1–9. Nature Publishing Group, 2018.

2018 Sayanti Mukherjee*, **Roshanak Nateghi**, and Makarand Hastak. Data on major power outage events in the continental us. *Data in brief*, volume 19, page 2079. Elsevier, 2018.

2018 Sayanti Mukherjee*, **Roshanak Nateghi**, and Makarand Hastak. A multi-hazard approach to assess severe weather-induced major power outage risks in the us. *Reliability Engineering & System Safety*, volume 175, pages 283–305. Elsevier, 2018.

2018 Mustafa Lokhandwala* and **Roshanak Nateghi**. Leveraging advanced predictive analytics to assess commercial cooling load in the us. *Sustainable Production and Consumption*, volume 14, pages 66–81. Elsevier, 2018.

2017 **Roshanak Nateghi** and Sayanti Mukherjee*. A multi-paradigm framework to assess the impacts of climate change on end-use energy demand. *PloS One*, volume 12, page e0188033. Public Library of Science San Francisco, CA USA, 2017.

2017 Sayanti Mukherjee* and **Roshanak Nateghi**. Climate sensitivity of end-use electricity consumption in the built environment: an application to the state of florida, united states. *Energy*, volume 128, pages 688–700. Elsevier, 2017.

2016 **Roshanak Nateghi**, Seth Guikema, Yue Wu, and C Bayan Bruss*. Critical assessment of the foundations of power transmission and distribution reliability metrics and standards. *Risk analysis*, volume 36, pages 4–15. Wiley Online Library, 2016.

2016 **Roshanak Nateghi**, Jeremy Bricker, Seth Guikema, and Akane Bessho. Statistical analysis of the effectiveness of seawalls and coastal forests in mitigating tsunami impacts in iwate and miyagi prefectures. *PloS One*, volume 11, page e0158375. Public Library of Science San Francisco, CA USA, 2016.

2014 **Roshanak Nateghi**, Seth Guikema, and Steven Quiring. Power outage estimation for tropical cyclones: Improved accuracy with simpler models. *Risk analysis*, volume 34, pages 1069–1078. Wiley Online Library, 2014.

2014 **Roshanak Nateghi**, Seth Guikema, and Steven Quiring. Forecasting hurricane-induced power outage durations. *Natural hazards*, volume 74, pages 1795–1811. Springer, 2014.

2014 Andrea Staid, Seth Guikema, **Roshanak Nateghi**, Steven Quiring, and Michael Z Gao. Simulation of tropical cyclone impacts to the us power system under climate change scenarios. *Climatic change*, volume 127, pages 535–546. Springer, 2014.

2014 Seth Guikema, **Roshanak Nateghi**, Steven Quiring, Andrea Staid, Allison Reilly, and Michael Gao. Predicting hurricane power outages to support storm response planning. *IEEE Access*, volume 2, pages 1364–1373. IEEE, 2014.

2011 **Roshanak Nateghi**, Seth Guikema, and Steven Quiring. Comparison and validation of statistical methods for predicting power outage durations in the event of hurricanes. *Risk Analysis: An International Journal*, volume 31, pages 1897–1906. Wiley Online Library, 2011.

2011 Royce Francis, Stefanie Falconi, **Roshanak Nateghi**, and Seth Guikema. Probabilistic life cycle analysis model for evaluating electric power infrastructure risk mitigation investments. *Climatic change*, volume 106, pages 31–55. Springer, 2011.

Sayanti Mukherjee and volume=13 pages=192–195 year=2017 publisher=Elsevier **Roshanak Nateghi**, journal=Data in brief. Climate, weather, socio-economic and electricity usage data for the residential and commercial sectors in fl, us.

In Conference Proceedings

2019 Benjamin Rachunok* and **Roshanak Nateghi**. Interdependent infrastructure system risk and resilience to natural hazards. In *Proceedings of the 2019 IISE Annual Conference; Edited by H.E. Romeijn, A. Schaefer, and R. Thomas*, pages 659–664. 2019.

2019 Renee Obringer* and **Roshanak Nateghi**. Multivariate modeling for sustainable and resilient infrastructure systems and communities. In *Proceedings of the 2019 IISE Annual Conference; Edited by H.E. Romeijn, A. Schaefer, and R. Thomas*, pages 1238–1243. 2019.

2017 **Roshanak Nateghi** and Allison Reilly. All-hazard approaches to infrastructure risk reduction: Effective investments through pluralism. In *Resilience Engineering Chapter, Safety and Reliability. Theory and Applications, Edited by Marko Cepin, Radim Bris; the 27th European Safety and Reliability (ESREL), Portorož Slovenia*. 2017.

2017 Sayanti Mukhopadhyay* and **Roshanak Nateghi**. Estimating climate—demand nexus to support longterm adequacy planning in the energy sector. In *2017 IEEE Power & Energy Society General Meeting*, pages 1–5. IEEE, 2017.

2016 Mina Ostovari*, Denny Yu, Shan Xie, Qing Ye, Bhagyashree Katare, Mohammad Adibuzzaman, Kenneth Musselman, **Roshanak Nateghi**, Cleveland Shield, and Yuehwern Yih. Bridging the gap between population needs and barriers into onsite clinic use. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, volume 60, pages 1809–1812. SAGE Publications Sage CA: Los Angeles, CA, 2016.

2015 **Roshanak Nateghi** and Terje Aven. A framework for conceptualizing the performance of and assessing the risks to systems. In *Safety and Reliability of Complex Engineered Systems, Edited by Luca Podofillini, Bruno Sudret, Bozidar Stojadinovic, Enrico Zio, Wolfgang Kröger; the Proceedings of the 25th European Safety and Reliability (ESREL) Conference, Zürich, Switzerland*, page 839–845. 2015.

2015 Andrea Staid, Seth Guikema, **Roshanak Nateghi**, Steven Quiring, and Michael Gao. Assessing the sensitivity of power distribution systems in u.s. metropolitan areas to climate-induced hurricane impacts. In *Safety and Reliability of Complex Engineered Systems, Edited by Luca Podofillini, Bruno Sudret, Bozidar Stojadinovic, Enrico Zio, Wolfgang Kröger;;the Proceedings of the 25th European Safety and Reliability Conference (ESREL), Zürick, Switzerland*, 2015.

2014 Andrea Staid, Seth Guikema, **Roshanak Nateghi**, Steven Quiring, and Michael Gao. Simulation methods to assess long-term hurricane impacts to us power systems. In *Proceedings of the 12th international conference on probabilistic security assessment and management*, 2014.

2013 Seth David Guikema, **Roshanak Nateghi**, and Steven Quiring. Storm power outage prediction modeling. In *Safety, Reliability and Risk Analysis: Beyond the Horizon; The Proceedings of the European Safety and Reliability Conference (ESREL)*, pages 3089–3096, 2013.

2013 Seth David Guikema, **Roshanak Nateghi**, and Steven Quiring. Predicting infrastructure loss of service from natural hazards with statistical models: Experiences and advances with hurricane power outage prediction. In *The Proceedings of the European Safety and Reliability Conference (ESREL)*, 2013.

2011 **Roshanak Nateghi** and Seth David Guikema. A comparison of top-down statistical models with bottom-up methods for power system reliability estimation in high wind events. In *Vulnerability, Uncertainty, and Risk: Analysis, Modeling, and Management*, pages 594–601. 2011.

2010 **Roshanak Nateghi**, Seth David Guikema, and Steven Quiring. Statistical modeling of power outage duration times in the event of hurricane landfalls in the us. In *10th International Probabilistic Safety Assessment & Management Conference (PSAM), Seattle, WA*, pages 3117––3128. 2010.

Book Chapters

2018 **Roshank Nateghi**, and Seth David Guikema, Modeling Power Outage Risk From Natural Hazards, in *Oxford research encyclopedia of natural hazard science*, DOI:10.1093/acrefore/9780199389407.013.52.

2010 **Roshanak Nateghi,** Steven Quiring, and Seth Guikema, Estimating the impact of climate variability on cumulative hurricane destructive potential through data mining, in *in Hurricanes and Climate Change*, Edited by J.B. Elsner, R.E. Hodges, J.C. Malmstadt, and K.N. Scheitlin. Springer, New York.

Other Publications

Feb. 2021 **Roshanak Nateghi**, "The Texas blackouts showed how climate extremes threaten energy systems across the US", *The Conversation*.

Jan. 2021 **Roshanak Nateghi**, "Disrupting vulnerability traps and catalyzing community resilience. Day One Project", *Day One Project*.

Apr. 2020 Stefanie Falconi **Roshanak Nateghi**, Opinion: "What a pandemic can teach us about climate resilience", *Thomson Reuters Foundation News*.

Feb. 2019 Leigh Raymond, Doug Gotham, William McClain, Sayanti Mukherjee*, **Roshanak Nateghi** , Paul Preckel, Peter Schubert, Shweta Singh, Liz Wachs, M. Widhalm, and Jeffrey Dukes, "*Climate Change and Indiana's Energy Sector*", *Indiana Climate Change Impact Assessment*.

Dec. 2013 Seth Guikema, Steven Quiring, **Roshanak Nateghi,** Allison Reilly, "Predicting power outages from hurricanes: supporting emergency response planning", *International Association of Emergency Managers (IAEM) Bulletin*.

Student Advising

Advisory Committee

- Chair:
  Ellen Wongso (Master's), Aiyshwariya Paulvannan Kanmani (Master's), Jackson Bennet (Master's), Min Soo Choi (PhD), Benjamin Rachunok (PhD), Renee Obringer (PhD), Debora Maia Silva (PhD), Kendrick Hardaway (PhD), Kanaan Hardaway, Steve Woo (PhD).

- Member:
  Diane Constance Aloisio (PhD), Zhipeng Deng (PhD), Sayanti Mukhopadhyay (PhD), Milind Sharma (PhD), Nikhil Nayanar (PhD), Zibo Zhao (PhD), Shan Xie (PhD), Kyubyung Kang (PhD), Ashutosh Nayak (PhD), Jeong Joon Boo (PhD), Mayank Gupta (Master's), Y. Wang (PhD), Ali Movahedi (PhD at UIC), Gaia Cervini (Master's), Lindsay Darking (PhD), Jonggwang Kim (PhD).

Teaching

Purdue University

2015–2021 **IE 330**, *Probability and Statistics in Engineering II*, Fall Semester.

2021 **IE 690**, *Infrastructure Planning and Management*, Spring Semester.

2021 **IE 590**, *Big Data Risk Analytics for Engineering Management and Public Policy*, Spring Semester.

2019 **EEE/EAPS/IE595**, *Extreme Weather and Climate: Science and Risk*, Spring Semester.

2018–2019 **EEE 595**, *Predictive Modeling* , Spring Semester.

2018 **IE 690**, *Energy Systems Planning*, Spring Semester.

2018 **EEE 560**, *Energy Systems Analytics*, Spring Semester.

2017 **EEE 595/IE 590**, *Risk and Decision Analysis*, Spring Semester.

2016 **EEE 595/IE 590**, *Advanced Data Analytics*, Spring Semester.

2016 **EEE 560**, *Energy Analytics*, Fall Semester.

Johns Hopkins University

2015 **EN.575.606**, *Statistical Computing*, Spring Semester.

2014 **EN.570.221.13**, *Sustainability Science*, Spring Intersession.

2013 **EN.575.608**, *Data Analytics for Engineering and Management Science*, Fall Semester.

Invited Talks

Jan. 2022 **Roshanak Nateghi**, Judsen Bruzgul, Heather Payne, Michale Craig, *Past the Tipping Point: How Regulators and Utilities Are and Will be Looking at Ways to Mitigate the Inevitable Impacts of Climate Change*, the Energy Bar Association Seminar, Moderated by Harvey Reiter.

Dec. 2021 Kendrick Hardaway*, **Roshanak Nateghi**, Roger Flage, Seth Guikema, *The need for risk science in autonomous vehicle adoption*, International Society for Risk Analysis Annual Meeting (Virtual).

Apr. 2021 **Roshanak Nateghi**, *Podcast on "Texas Energy Crisis - Sustainability vs. Resilience, a Risk Perspective"*, the International Society for Risk Analysis podcast series on "Let's Talk Risk," Moderated by Seth Guikema and Mark Weir.

Dec. 2020 Renee Obringer*, Debora Maia-Silva*, **Roshanak Nateghi**, Sayanti Mukherjee, Rohini Kumar, *Characterizing the impact of climate change on household air conditioning use across the United States*, International Society for Risk Analysis Annual Meeting (Virtual).

Dec. 2020 **Roshanak Nateghi**, Benjamin Rachunok*, Debora Maia-Silva*, Rohini Kumar, *The implications of asymmetrical temperature response of peak electricity demand for power reserve margin planning under climate change*, International Society for Risk Analysis Annual Meeting (Virtual).

Dec 2020 Debora Maia-Silva*, **Roshanak Nateghi**, Rohini Kumar, *Beyond air temperature: cooling degree day projections for different measures of heat stress and the associated consequences to residential energy consumption*, International Society for Risk Analysis Annual Meeting (Virtual).

Dec. 2020 Benjamin Rachunok*, **Roshanak Nateghi**, *Engineering resilience and equitable resilience*, International Society for Risk Analysis Annual Meeting (Virtual).

Sep. 2020 **Roshanak Nateghi**, *Invited Panelist, Rapid Response Workshop: "Hurricane Season – Impacts"*, Climate Central: A Science & News Organization.

May 2020 Gabrielle Wong-Parodi, Khara Grieger, Mark Borsuk, **Roshanak Nateghi**, *Panel Podcast on "COVID Conversations on Risk,"*, the International Society for Risk Analysis podcast series on "Let's Talk Risk," Moderated by Seth Guikema.

Apr. 2020 **Roshanak Nateghi**, *Virtual Panel on "Virtual Dissertation Defenses" to discuss the equity and equality implications of the virtual environment under COVID19*, Center for the Environment, Discover Park, Purdue University.

Jun. 2019 **Roshanak Nateghi**, *Riding out the gray swans: disaster resilience via big data analytics*, Department of Safety, Economics and Planning, University of Stavanger, Norway.

Oct. 2019 Renee Obriner***, Roshanak Nateghi**, *Modeling the impact of climate change on the New York state energy consumption*, The Institute for Operations Research and the Management Sciences Annual Meeting, Seattle, WA,.

Oct. 2019 Renee Obringer*, **Roshanak Nateghi**, *Multifaceted modeling for smart urban systems*, he Institute for Operations Research and the Management Sciences Annual Meeting, Seattle, WA.

Oct. 2019 Panthea Alipour*, Sayanti Mukherjee, **Roshanak Nateghi**, *A generalized predictive modeling framework to assess climate sensitivity of peak electricity load*, The Institute for Operations Research and the Management Sciences Annual Meeting, Seattle, WA.

Oct. 2019 Benjamin Rachunok*, Jackson Bennett*, **Roshanak Nateghi**, *Twitter and disasters: learning resilience from social media*, The Institute for Operations Research and the Management Sciences Annual Meeting, Seattle, WA.

Oct. 2019 Renee Obringer*, **Roshanak Nateghi**, *Multifaceted modeling for smart urban systems*, The Institute for Operations Research and the Management Sciences Annual Meeting, Seattle, WA.

Dec. 2019 Renee Obringer*, Rohini Kumar, **Roshanak Nateghi.**, *Projecting the interdependent water and electricity use into the future under different climate change scenarios*, International Society for Risk Analysis Annual Meeting, Arlington, VA.

Dec. 2019 Jackson Bennett*, Benjamin Rachunok*, Roger Flage, **Roshanak Nateghi**, *Harnessing social media data to understand regional climate change attitudes*, International Society for Risk Analysis, Arlington, VA.

Dec. 2019 Benjamin Rachunok*, Jackson Bennett*, **Roshanak Nateghi**, *Methods for using twitter to understand community resilience*, International Society for Risk Analysis Annual Meeting, Arlington, VA.

Dec. 2019 Debora Maia-Silva*, Rohini Kumar, and **Roshanak Nateghi**, *Humidity's role in modeling summer-time electricity demand across the US*, International Society for Risk Analysis Annual Meeting, Arlington, VA.

Apr. 2018 **Roshanak Nateghi** and Seth Guikema, *Podcast on "We've Been Underestimating Climate Change"*, the International Society for Risk Analysis podcast series on "Let's Talk Risk".

Apr. 2017 **Roshanak Nateghi**, *Sustainability and resilience of critical infrastructure systems*, Technische Universität Dresden, Germany.

Aug. 2017 Seth Guikema, Steven Quiring, **Roshanak Nateghi**, Abdollah Shafieezadeh, *Invited Panelist: Storm Outage Prediction, Preparedness and Response Workshop*, Ohio State University, Columbus, OH.

May 2019 Renee Obringer**, Roshanak Nateghi**, *Multivariate modeling for sustainable and resilient infrastructure systems and communities*, Institute of Industrial and Systems Engineers Annual Conference and Expo, Orlando, FL.

Apr. 2019 **Roshanak Nateghi**, *On taming the 'gray swans' in the age of analytics*, The Department of Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL.

Apr. 2019 **Roshanak Nateghi**, *Smart and resilient urban systems*, The Department of Industrial and Systems Engineering, University at Buffalo, NY .

Jan. 2019 Suresh Rao, **Roshanak Nateghi**, *Smart city interfaces and interdependencies*, Purdue University Engineering Faculty Conversation on Smart Cities.

Apr. 2019 **Roshanak Nateghi**, *Data-driven models for resilient urban systems*, Purdue University Graduate Transportation Seminar in Civil Engineering.

Dec. 2018 **Roshanak Nateghi**, Andrew Liu, Gesualdo Scutari, *On quantifying resilience*, National Science Foundation Critical Resilient Infrastructure Systems and Processes Workshop, Washington DC.

Feb. 2018 **Roshanak Nateghi**, Gregory Ballard, Leigh Raymond, Walley Tyner, Maureen McCann, *Invited Panelist: Contemporary Matters: PPRI Lunch Series on Sustainable Energy, Purdue University*.

Nov. 2018 Panteha Alipour*, Sayanti Mukherjee, **Roshanak Nateghi**, *The impact of climate model uncertainties in projecting long-term regional energy demand*, The Institute for Operations Research and the Management Sciences Annual Meeting, Phoenix, AZ.

Dec. 2018 Renee Obringer*, **Roshanak Nateghi**, *multivariate analysis of the residential water-electricity demand nexus in the Midwest*, International Society for Risk Analysis Annual Meeting, New Orleans, LA.

Dec. 2018 Debora Maia Silva*, Rohini Kumar, **Roshanak Nateghi**, *Electricity demand analytics under climate variability and change*, International Society for Risk Analysis Annual Meeting, New Orleans, LA.

Dec. 2018 **Roshanak Nateghi**, *Multi-dimensional infrastructure resilience modeling: a data-driven approach*, International Society for Risk Analysis Annual Meeting, New Orleans, LA.

Dec. 2018 Sayanti Mukherjee, **Roshanak Nateghi**, *A comparative analysis of climate sensitivities of high and moderate intensity regional electricity demand*, International Society for Risk Analysis Annual Meeting, New Orleans, LA.

Dec. 2018 **Roshanak Nateghi**, *Analytics for resilient urban systems*, Operations Research and Industrial Engineering, University of Texas at Austin, TX .

Dec. 2018 Benjamine Rachunok*, **Roshanak Nateghi**, *A comparison of spatial and random failures when simulating network outages*, International Society for Risk Analysis, New Orleans, LA.

Nov. 2018 Benjamin Rachunok*, **Roshanak Nateghi**, *The sensitivity of electric power infrastructure resilience to the spatial distribution of disaster impacts*, The Institute for Operations Research and the Management Sciences Annual Meeting, Phoenix, AZ.

Oct. 2018 **Roshanak Nateghi**, *Riding out the 'gray swans': data-driven models for resilient infrastructure and communities*, The Department of Earth and Environmental Engineering, Columbia University, New Yor City, NY.

Mar. 2018 **Roshanak Nateghi**, *Data-centric methods for resilient infrastructure system*, The Department of Civil and Environmental Engineering, University of Maryland, College Park, MD .

Mar. 2018 **Roshanak Nateghi**, *Bridging the data-decisions gaps for resilient infrastructure system and communities*, The Department of Environmental Health and Engineering, Johns Hopkins University Baltimore, MD.

Feb. 2018 **Roshanak Nateghi**, *Data-driven methods for sustainable and resilient critical infrastructure systems*, The Department of Industrial and Systems Engineering, Rensselaer Polytechnic Institute, Troy, NY.

Nov. 2017 Daniel Aldrich, Patrick Flannelly, David Johnson, **Roshanak Nateghi**, Megan Sapp Nelson, Chittayong Surakitbanharn, *Invited Panelist: Discovery Park's Purdue Policy Research Institute's panel on "Floods, Tornados and Disaster Resilience*, Purdue University, West Lafayette, IN.

Dec. 2017 Benjamin Rachunok*, **Roshanak Nateghi**, *Transportation network recovery analysis*, International Society for Risk Analysis Annual Meeting, Crystal City, VA.

Dec. 2017 C. Bayan Bruss*, **Roshanak Nateghi**, Benjamin Zaitchik, *Why the well runs dry: assessing global trends in groundwater stress*, International Society for Risk Analysis Annual Meeting, Crystal City, VA.

Dec. 2017 **Roshanak Nateghi**, *Electricity power system inadequacy risk in the residential sector*, International Society for Risk Analysis Annual Meeting, Crystal City, VA.

Oct. 2017 Benjamin Rachunok*, **Roshanak Nateghi**, *Modeling uncertainty: the cost of wrong assumptions*, The Institute for Operations Research and the Management Sciences Annual Meeting, Houston, TX.

Oct. 2017 Hua Cai, **Roshanak Nateghi**, Rouxhi Wen, Benjamin Rachunok, *The Institute for Operations Research and the Management Sciences Annual Meeting, Houston, TX*.

Oct. 2017 **Roshanak Nateghi**, C. Bayan Bruss*, Benjamin Zaitchik, *Characterizing the evolution of global ground-water stress*, The Institute for Operations Research and the Management Sciences Annual Meeting, Houston, TX.

Oct. 2017 **Roshanak Nateghi**, *Assessing residential power inadequacy risks in the US*, The Institute for Operations Research and the Management Sciences Annual Meeting, Houston, TX.

Dec. 2016 **Roshanak Nateghi**, *Electricity demand analysis in the residential sector*, International Society for Risk Analysis Annual Meeting, San Diego, CA.

Dec. 2016 **Roshanak Nateghi,** Seth Guikema, Grace Wu, C. Bayan Bruss* , *Critical assessment of power transmission and distribution reliability metrics and standards*, International Society for Risk Analysis Annual Meeting, San Diego, CA.

Nov. 2016 Ellen Wongso*, **Roshanak Nateghi**, *Predictive analytics for sustainable water consumption.*, The Institute for Operations Research and the Management Sciences Annual Meeting, Nashville, TN.

Sep. 2016 **Roshanak Nateghi**, *Webinar on Storm Impact Modeling for Power Distribution Systems*, Con Edison.

Jun. 2016 **Roshanak Nateghi**, *Sustainability in the energy sector*, Partners for Pollution Prevention Meeting, Indiana Department of Environmental Management.

Jul. 2016 **Roshanak Nateghi**, *Opportunities and challenges in promoting sustainable electricity use in the residential sector: a regional analysis of the US consumers*, The 26th International Environment, Sustainability and Climate Change Symposium, Oxford, U.K..

Jun. 2016 C. Bayan Bruss*, **Roshanak Nateghi**, Benjamin Zaitchik, *Statistical Learning and Data Science,Chapel Hill NC*, Predictive analytics for ground water levels across 81 countries.

Jan. 2016 **Roshanak Nateghi**, *Predictive risk analytics for disaster preparation, response and planning*, The Department of Earth, Atmospheric and Planetary Sciences, Purdue University, West Lafayette, IN.

Dec. 2015 **Roshanak Nateghi**, Akhil Muralidharan*, David Yu, *Embracing the principles of sustainability science in risk assessment and management*, International Society for Risk Analysis Annual Meeting, Crystal City, VA .

Dec. 2015 **Roshanak Nateghi,** Terje Aven, *Reflections on how to conceptualize and assess the performance and risk of complex systems*, International Society for Risk Analysis Annual Meeting, Baltimore, MD.

Nov. 2015 Seth Guikema, **Roshanak Nateghi**, Jeremy Bricker, *Data mining for understanding tsunami death rates in Japan*, The Institute for Operations Research and the Management Sciences Annual Meeting, Philadelphia, PA.

Mar. 2015 **Roshanak Nateghi**, *The Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI*, "Predictive analytics for disaster preparation, response, and planning".

Mar. 2015 **Roshanak Nateghi**, *Leveraging big data analytics for sustainable and resilient critical infrastructure*, The Department of Industrial Engineering, Virginia Tech, Blacksburg, VA.

Feb. 2015 **Roshanak Nateghi**, *Data driven disaster response and planning*, The Department Environmental and Ecological Engineering, Purdue University, West Lafayette, IN.

Dec. 2014 Seth Guikema, **Roshanak Nateghi**, *Storm damage prediction*, Pepco Holdings, North East MD.

Nov. 2014 **Roshanak Nateghi**, Seth Guikema, *Evaluating risk mitigation investments in coastal power systems prone to hurricane impacts*, The Institute for Operations Research and the Management Sciences Annual Meeting, San Francisco, CA.

Jun. 2014 Seth Guikema, **Roshanak Nateghi**, Allison Reilly, *Hurricane power outage modeling*, US DOE, Office of Electricity, Washington DC.

Oct. 2013 **Roshanak Nateghi**, *Evaluating electric power infrastructure risk mitigation investments*, Carbon Management Technology, Alexandria, VA.

Sep. 2013 **Roshanak Nateghi**, *Modeling the reliability of U.S. coastal power systems impacted by hurricanes*, Resources for the Future, Washington DC.

Oct. 2012 **Roshanak Nateghi,** Seth Guikema, *Long-term impacts of climate change on hurricane activity and power system reliability in hurricane-prone regions*, International Society of Risk Analysis Annual Meeting, San Francisco, CA.

Contributed Conference/Symposium Presentations

JUN. 2018 **Roshanak Nateghi**, *Multidimensional infrastructure resilience modeling*, International Symposium for Sustainable Systems and Technology, Buffalo, NY.

May 2018 **Benjamin Rachunok8, RoshanaK Nateghi**, *Interdependent infrastructure system risk and resilience to natural hazards*, Institute for Industrial and Systems Engineers Annual Conference. Orlando, FL.

Dec. 2018 **Renee Obringer*, Roshanak Nateghi**, *Projecting urban water supplies into the future: a case for the complementary Nature predictive and explanatory models*, Society for Risk Analysis Annual Meeting, New Orleans, LA.

Nov. 2018 **Sayanti Mukherjee, Roshanak Nateghi, Makarand Hastak**, *Modeling risks of extreme weather induced power outages*, The Institute for Operations Research and the Management Sciences Annual Meeting, Phoenix, AZ.

Jul. 2017 **Sayanti Mukherjee and Roshanak Nateghi**, *stimating climate—demand nexus to support long-term adequacy planning in the energy sector*, the Institute of Electrical and Electronics Engineers, Power and Energy Society General Meeting, Chicago, IL.

Oct. 2018 **Renee Obringer*, Zhao Ma, Roshanak Nateghi**, *Influence of norms on the water-electricity demand nexus: an interdisciplinary framework*, Behavior, Energy and Climate Change Conference, Washington DC.

Jun. 2017 **Roshanak Nateghi, Allison Reilly**, *Holistic approaches to infrastructure risk reduction: effective investments through pluralism*, Annual European Safety and Reliability ESREL, Portorož, Slovenia.

Nov. 2015 **C. Bayan Bruss*, Roshanak Nateghi, Benjamin Zaitchik**, *When the wells run dry: predicting observed grace satellite groundwater storage trends*, The Institute for Operations Research and the Management Sciences Annual Meeting, Philadelphia, PA.

Nov. 2014 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Evaluating risk mitigation investments in coastal power systems prone to hurricane impacts*, The Institute for Operations Research and the Management Sciences Annual Meeting, San Francisco, CA.

Dec. 2013 **Roshanak Nateghi,** Terje Aven, *Reflections on how to conceptualize and assess the performance and risk of different types of complex systems*, Society for Risk Analysis Annual Meeting, Baltimore, MD.

Dec. 2012 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Increased accuracy in statistical seasonal hurricane forecasting*, merican Geophysical Union, San Francisco, CA.

Jul. 2012 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Long-term reliability of U.S. coastal power distribution systems impacted by hurricanes*, National Science Foundation Civil, Mechanical and Manufacturing Innovation (NSF CMMI), Boston, MA.

Aug. 2011 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Estimating power outage duration in the event of hurricane landfalls in the U.S.*, Joint Statistical Meeting, Miami, FL.

Jun. 2010 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Statistical modeling of power outage durations in the event of hurricane landfalls in the U.S.*, Probabilistic Safety Assessment and Management, Seattle, WA.

Mar. 2009 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Climate-induced changes in hurricane winds, surge, and risk to electric power system*, Integrated Science Team Meeting of Department of Energy's Climate Change Modeling Programs, College Park, MD.

Jun. 2009 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Modeling hurricane hazard in the U.S. using regression trees*, 2nd International Summit on Hurricanes and Climate Change, Corfu, Greece.

Aug. 2008 **Roshanak Nateghi**, Seth Guikema, Steven Quiring, *Establishing the link between climate change, climate variability and hurricane hazard in the U.S.*, Joint Statistical Meeting, Denver, CO.

Service to Ubiversity, Professional Societies, Government, and Industry

Editorial Positions

2020–present Area Editor, Journal of Risk Analysis (Mathematical Modeling and Machine Learning Track)

2019–2020 Associate Area Editor, Journal of Risk Analysis (Mathematical Modeling and Machine Learning Track)

2017–2021 Research Column Editor, Decision Analysis Today: The Newsletter of the Institute for Operations Research and the Management Sciences, Decision Analysis Society

2017–2020 Editorial Board Member, Journal of Civil Engineering and Environmental Systems

2017–Present Editorial Board Member, Journal of Risk Analysis

Elected Positions at Professional Societies

2020–Present Councilor, the International Society for Risk Analysis

2020–Present Chair, Science Committee, the International Society for Risk Analysis

2020–Present Co-Chair, the International Society for Risk Analysis

2020–Present Chair, Foundational Issues in Risk Analysis Specialty Group, the International Society for Risk Analysis

2017–2018 Chair, Engineering and Infrastructure Specialty Group, the International Society for Risk Analysis

2016–2017 Vice Chair, Engineering and Infrastructure Specialty Group, the International Society for Risk Analysis

Purdue University

2020–2021 Research Seminar Committee, School of Industrial Engineering

2017–2018 Advisory Committee for the Data Science Initiative, College of Engineering

2017–2018 Faculty Search Committee, School of Industrial Engineering & School of Electrical and Computer Engineering

2017–2020 Graduate Committee, Industrial Engineering

2016–2017 Judge, Senior Design Project as well as Student Poster Competition, Industrial Engineering & the Office of Interdisciplinary Graduate Programs

2017 Reviewer, the Bisland Dissertation Fellowship as well as the Ismail Interdisciplinary Travel Award, Purdue College of Engineering

2015–2017 Undergraduate Committee, School of Industrial Engineering

2015–2019 Teaching Committee, Environmental and Ecological Engineering

Conference Organization

2020 The Institute of Industrial and Systems Engineers
- Co-chair of the Sustainable Development track

2012–Present The International Society for Risk Analysis
- Organizer, various symposia on reliability, risk and resilience of infrastructure (2012–2019)
- Member of the Program Organizing Committee (2017–2018)
- Session Chair for several symposia on infrastructure risk and resilience (2012–2021)

2018–2019 The Institute for Operations Research and the Management Sciences
- Session Organizer: "Leveraging Operations Research to Assess and Enhance Power Systems Resilience" (2018) & "Data-Driven Disaster Resilience" (2019)

Journal Referee

2010–Present Served as a reviewer for the journals of Risk Analysis, Civil Engineering and Environmental Systems, Reliability Engineering and Systems Safety, Energy, Applied Energy, IEEE Access, IEEE Transactions on Power Systems, IEEE Systems Journal, Scientific Reports, Journal of Infrastructure Systems, Safety Science, Sustainable and Resilient Infrastructure, Climate Risk Management, Plos One, International Journal of Forecasting, Industrial Ecology, Nature Climate Change

National Science Foundation

2021 Reviewer Panelist, Growing Convergence Research program

2021 Reviewer Panelist, SBIR/STTR Phase I

2013–Present Reviewer for various panels in the Division of Civil, Mechanical and Manufacturing Innovation

2014 & 2018 Reviewer panelist for two panels in the Division of Chemical, Bioengineering, Environmental, and Transport Systems

2017 Invited participant, "Interdisciplinary Methods for Disaster Research workshop"

The Department of Energy

2022 Reviewer, IBUILD: Innovations in Buildings

2022 Reviewer, Communities LEAP (Local Energy Action Program) Pilot

2022 Reviewer, Established Program to Stimulate Competitive Research (DOE EPSCoR)

2021 Reviewer, Early Career Research Awards; The Energy, Power, Control, and Networks Program (EPCN)

Honors & Awards

2021 AAAS Science & Technology Policy Fellowship

2020–2021 Selected to serve as National Expert on various press releases by Climate Central, A Science and News Organization

2019–2020 Received Wiley's certificate of recognition for a top-cited paper.

2020 Featured Faculty Member, Asian American & Asian Resource and Cultural Center Newsletter

2019 Awarded the Best Paper Award by the International Society for Risk Analysis. This annual award is reserved for papers published in Risk Analysis that year that have made the most significant impacts to the theory or practice of risk analysis.

2018 Received the Certificate of Outstanding Contribution in Reviewing, in recognition of the contributions made to the quality of the Journal of Reliability Engineering and System Safety

2017 Selected as one of the Best Conference Papers submitted to the 2017 IEEE PES General Meeting and presented at one of the four concurrent Best Conference Paper sessions

2012 Received the Graduate Student Fellowship by the National Science Foundation to attend the Engineering Research and Innovation Conference

2016 Received Purdue Industrial Engineering Graduate Mentor Award; Awarded annually to an outstanding graduate mentor in the School of Industrial Engineering, selected by the graduate student body

2011 Selected to attend the Future Faculty Workshop, as part of the National Science Foundation ADVANCE Program

2009 Received the Student Paper Competition Award (3rd place) by the Chesapeake Water Environment Association

Activities & Other Interests

2010–present Avid runner; I've completed 9 marathons, 9 half marathons and several 5k and 10k races.

2020–present Certified Yoga instructor

2009-present Outreach to enhance the representation of minorities in STEM:

- Served on the "Engineering Solutions to Climate Change Panel," co-organized by Science on Tap & Girls Inc., engaging girls on the effectiveness of science and engineering to address the 21st century wicked problems (Summer 2020).
- Hosted Purdue's Prospective Faculty Workshop candidates to mentor minorities on effective pathways for pursuing a career in academia (Spring 2017).

- Served on the "Industry versus Academia" Panel organized by Industrial Engineering Graduate Women Group to discuss opportunities and challenges to women and minorities in different sectors (Spring 2017).
- Served as the representative host for "Juniors Exploring Engineering at Purdue" organized by Women in Engineering Program (Spring 2016 & 2017).
- Served as a guest Speaker on "Fostering Faculty-Student Interactions," Purdue Boiler TV (Spring 2016).
- Founded the Imposter Support Group at Johns Hopkins University, aimed at providing tools and guidelines for doctoral and postdoctoral students to cope with chronic feeling of self-doubt that particularly affects minority students (Spring 2014).
- Served as a Guest Speaker on MIT's Online Science Technology and Engineering Community Webinar, motivating high school students to enter STEM fields (Fall 2014).
- Served as a mentor to high school students as part of Women in Science and Engineering Program, Johns Hopkins University (Fall 2009 Spring 2015).

Media Appearance

2021 **"Turn off that camera during virtual meetings, environmental study say"**, *Purdue Press Release*, [Link], This release was picked up by various outlets including WBAA, Forbes, BBC, Science Daily, Science Times, CTV News, Daily Mail, Consumer Affairs, Futurity, The Tribune and The Daily Star, techcodex.com.

2021 **"How Biden-Harris administration could build resilience to natural disasters and climate change"**, *Purdue Press Release*, [Link].

2021 **"The polar vortex has left millions of Texans without power. Could the same happen to Hoosiers?"**, *Indy Star*, [Link].

2021 **Discussed "grid resilience under climate change on the Buchanan and Seaton live radio show"**.

2021 **"Texas grid failure strengthens calls to climate-proof energy infrastructure"**, *MPRNEWS, Climate Cast*, [Link].

2021 **"California and Texas are warnings': blackouts show US deeply unprepared for the climate crisis"**, *The Gaurdian*, [Link].

2021 **"What really happened during the Texas power grid outage?"**, *CNBC*, [Link].

2021 **"3 Ways to prevent the next mass power outage"**, *Grist Story*, [Link].

2021 **"Designing for the future: power grids must adapt to climate change"**, *APM Research Lab*, [Link].

2020 **"More accurate climate change model reveals bleaker outlook on electricity, water use."**, *Purdue Press Release*, The news was picked up by the following outlets:.

- Environmental News Network [Link]
- Courthouse News Service [Link]
- (e)ScienceNews [Link]
- Phys.org [Link]
- World News Monitor [Link]

2020 **"New model could improve natural gas demand predictions in New York"**, *Tech Xplore*, [Link].

2020 **"As climate changes, Midwest will need more electricity, water"**, *Tribune Star*, [Link].

2020 **"Parsing tweets to strengthen community disaster resilience"**, *The Medium*, [Link].

2020 **"How will climate change affect energy use in Cities"**, *Purdue News*, [Link].

2020 **"How air conditioning could keep everyone cool without cooking the planet"**, *Grist Story*, [Link].

2020 **"Boiling Point: Climate change is wreaking havoc on the power grid in ways you never knew"**, *Los Angeles Times*, [Link].

2020 **"Protecting the grid"**, *PCCRC Featured Research*, [Link].

2019 **"How will climate change stress the power grid?"**, *Windpowerengineering.com*, [Link].

2019 **"Dewpoint may predict future energy demand."**, *Futurity*, [Link].

2019 **"Twitter 'fingerprint' helps decode how individuals respond to crises."**, *Purdue Press Release*, The news was picked up by the following outlets:.

- Science Blog [Link]
- Tech Xplore [Link]
- UN Office of Disaster Risk Reduction (UNDRR) [Link]
- L'informazione independente Agenparl.eu [Link]
- Research Buzz [Link]

2019 **"Study's projections show climate change to increase commercial Indiana energy consumption, reduce residential use."**, *American Infrastructure Magazine: Informing Municipal Management Professionals*, [Link].

2018 **"How will climate change stress the power grid? Hint: Look at dew point temperatures."**, *Physics.Org*, [Link].

2018 **"Climate change will stress the power grid more than industry estimates."**, *Market Business News*, [Link].

2018 **"Power grid pressure: Climate change to increase electricity demands."**, *UPI.com*, [Link].

2018 **Engineering Frontiers**, *"Resilience Engineering"*, [Link].

2017 **"s for creating a more resilient power system."**, *Society for Risk Analysis*, [Link].

2017 **"Study's projections show climate change to increase commercial Indiana energy consumption, reduce residential use."**, *Physics.Org*, [Link].

2016 **"Seawalls, coastal forests in Japan help reduce tsunami damage."**, *Physics.Org*, [Link].

2016 **"Seawalls can reduce tsunami death and damage."**, *Futurity*, [Link].

2016 **"Keeping the lights on through the storm."**, *Purdue University Engineering Impact*, [Link].

2015 **"Who's making sure the power stays on?"**, *JHU Press Release*, [Link].

2015 **"Will your power go off during a storm? No one knows."**, *Futurity*, [Link].

2015 **"Weak regulation of grid soundness limits efforts to improve system reliability"**, *Homeland Security Newswire*, [Link].

2015 **"Power outages may become worse absent upgrades to national, state reliability rules.""**, *Society for Risk Analysis*, [Link].

2015 **"Extreme weather poses increasing threat to US power grid"**, *Seattle Times*, [Link].