

Nicole D. Jackson, Ph.D.

Senior Member of the Technical Staff
Sandia National Laboratories

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Education

Ph.D. Civil Engineering

2020

University of Illinois at Urbana-Champaign, Urbana, IL

Advisor: Megan Konar

Dissertation: *From Global to Local: Understanding Linkages Between Climate Shocks and Food Security*

M.S. Materials Science & Engineering

2014

University of Illinois at Urbana-Champaign, Urbana, IL

M.S. Engineering Mechanics

2008

Virginia Tech, Blacksburg, VA

Advisor: Scott Case

Thesis: *Reliability-based Durability Assessment of GFRP Bars for Reinforced Concrete*

B.S. Civil Engineering

2005

University of Illinois at Urbana-Champaign, Urbana, IL

Minor in International Engineering – Germanic Studies

Professional and Research Appointments

Senior Member of the Technical Staff

07/2021 – Present

Energy Water Systems Integration Department

Climate Change Security Center

Sandia National Laboratories, Albuquerque, NM

Postdoctoral Appointee

11/2019 – 07/2021

Energy Water Systems Integration Department

Climate Change Security Center

Mentors: Vincent Tidwell, Thushara Gunda, and Andrea Staid

Sandia National Laboratories, Albuquerque, NM

Graduate Research Assistant

01/2019 – 08/2019

Department of Bioengineering, Karin Jensen Research Group

University of Illinois at Urbana-Champaign, Urbana, IL

Graduate Research Assistant

08/2014 – 11/2019

Department of Civil & Environmental Engineering, Megan Konar Research Group

University of Illinois at Urbana-Champaign, Urbana, IL

Physical Sciences Trainee

06/2014 – 02/2016

Land Remediation and Pollution Control Division

U.S. Environmental Protection Agency, Cincinnati, OH

Project Manager Learning-in-Community: Haiti Infrastructure and Development University of Illinois at Urbana-Champaign , Urbana, IL	08/2013 – 08/2013
Graduate Research Assistant Department of Civil & Environmental Engineering, John S. Popovics Research Group University of Illinois at Urbana-Champaign , Urbana, IL	08/2008 – 04/2010
Graduate Research Assistant Department of Engineering Science & Mechanics, Materials Research Group Virginia Tech , Blacksburg, VA	01/2007 – 08/2007 08/2004 – 12/2005
Undergraduate Research Assistant Department of Civil & Environmental Engineering, John S. Popovics Research Group University of Illinois at Urbana-Champaign , Urbana, IL	05/2003 – 08/2003
Undergraduate Research Assistant Del E. Webb School of Construction, Christine Fiori Research Group Arizona State University , Tempe, AZ	06/2002 – 08/2002

Honors and Awards

Bay Area Research Slam Finalist 1 of 3 Sandia postdocs in a research competition sponsored by Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, and SLAC National Accelerator Laboratory	2021
Sandia National Laboratories Postdoctoral Technical Showcase Third Place Recognition from the Sandia Postdoctoral Association	2020
Rising Stars in Civil & Environmental Engineering Participant Workshop for early-career women at the Massachusetts Institute of Technology	2019
Academic Leadership for Women in Engineering Travel Grant Recipient (\$2,000) Sponsored by the Society of Women Engineers	2018
List of Teachers Ranked as Excellent with Outstanding Ranking (x2) Recognition at University of Illinois at Urbana-Champaign based on student course evaluations	2018
Diversifying Faculty in Higher Education in Illinois Fellowship (\$30,000) Tuition and stipend provided by the State of Illinois	2017 – 2019
Mavis Future Faculty Fellowship (\$2,000) Fellowship from the University of Illinois at Urbana-Champaign College of Engineering	2017 – 2018
Congressional Visit Days Participant 1 of 2 members of the Illinois delegation sponsored by the American Geophysical Union	2017
Fall Conference Travel Grant Recipient (\$425) Sponsored by University of Illinois at Urbana-Champaign Graduate College and Department of Civil & Environmental Engineering	2016

Fall Conference Travel Grant Recipient (\$425)	2015
Sponsored by University of Illinois at Urbana-Champaign Graduate College and Department of Civil & Environmental Engineering	
List of Teachers Ranked as Excellent	2014
Recognition at University of Illinois at Urbana-Champaign based on student course evaluations	
Support for Under-represented Groups in Engineering (SURGE) Fellowship (\$22,000)	2008 – 2009
Tuition and stipend from the University of Illinois at Urbana-Champaign College of Engineering	
Summer Pre-doctoral Institute Fellow (\$2,500)	2008
Summer stipend and housing allowance from the University of Illinois at Urbana-Champaign Graduate College	
Integrative Graduate Education and Research Trainee in Macromolecules (\$30,000)	2004 – 2005
Tuition and stipend provided by the National Science Foundation and Virginia Tech	

Research Grants

Total: \$2,321,000

“Completing the Feedback Loop: Linking Data, Operation and Maintenance, Manufacturers, and Insurance Markets”	2022 – 2024
Institutional PI (Sandia) with PI Adam Shinn (kWh Analytics), and Institutional PI Andy Walker (National Renewable Energy Laboratory), U.S. Department of Energy Solar Energy Technology Office, \$1,967,000 (DE-EE0009827)	
“FY22 Strategic Initiative: Climate Impacts on National Critical Infrastructure” (CINCI)	2021 – 2022
Senior Personnel with PI Jon Zimmerman (Sandia), Sandia National Laboratories, \$250,000	
“Resilience of Global Chemical Facilities to Climate Change”	2022
Task lead for Characterization of Climate Risk with PI Andrew W. Nelson (Sandia) and Institutional PI Lina Sela (University of Texas at Austin), Sandia National Laboratories – Climate Innovation Late Start Laboratory Directed Research & Development, \$104,000	
Pending Support	
“Predictive Modeling of Weather Impacts on Utility-scale Photovoltaic Systems”	2022
PI, Sandia National Laboratories – Exploratory Express, \$109,287	
“Multi-scale Modeling of Hail with the Energy Exascale Earth Systems Model for Decision Making”	2023–2025
PI, Sandia National Laboratories – Laboratory Directed Research & Development, \$1,200,000	
“Critical Infrastructure Decision-Making under Long-Term Climate Hazard Uncertainty”	2023–2025
Senior Personnel with PI Andrea Staid (Sandia), Sandia National Laboratories – Laboratory Directed Research & Development, \$1,050,000	
“Ensuring Grid-Resource Adequacy and Resilience in the Face of Climate Change”	2023–2024
Senior Personnel with PI Clifford Ho (Sandia), Sandia National Laboratories – Laboratory Directed Research & Development, \$950,000	

Peer-reviewed Publications

7 peer-reviewed publications including 4 as first author ([Google Scholar Page](#))

- [7] **N.D. Jackson** and T. Gunda. (2021) Evaluation of Extreme Weather Impacts on Utility-scale Photovoltaic Plant Performance in the United States, *Applied Energy*, Vol 302, pp 117508 ([paper](#)) ([data](#))
- [6] **N.D. Jackson**, M. Konar, P. Debaere, and J. Sheffield. (2021) Crop-specific Exposure to Extreme Temperature and Moisture for the Globe for the Last Half Century, *Environmental Research Letters*, Vol 16, Issue 6, pp 064006 ([paper](#)) ([data](#))
- [5] R. von Gnechten, J. Wang, M. Konar, K. Baylis, P. Anderson, S. Giroux, **N.D. Jackson**, and T. Evans. (2020) A Gravity Model and Network Analysis of Household Food Sharing in Zambia, *Environmental Research Letters*, Vol 15, Issue 11, pp 115010 ([paper](#))
- [4] **N.D. Jackson**, M. Konar, P. Debaere, and L. Estes. (2019) Probabilistic Global Maps of Crop-Specific Areas from 1961 to 2014, *Environmental Research Letters*, Vol 14, Issue 9, pp 094023 ([paper](#)) ([data](#))
- [3] M. Niazi, C. Nietch, M. Maghrebi, **N.D. Jackson**, B.R. Bennett, M. Tryby, and A. Massoudieh. (2017) Storm Water Management Model: Performance Review and Gap Analysis, *Journal of Sustainable Water in the Built Environment*, Vol 3, Issue 2, pp 04017002 ([paper](#))
- [2] **N.D. Jackson**, M. Konar, and A.Y. Hoekstra. (2015) The Water Footprint of Food Aid, *Sustainability*, Vol 7, Issue 6, pp 6435-6456 ([paper](#))
- [1] J.S. Popovics, G.P. Cetrangolo, and **N.D. Jackson**. (2006) Experimental Investigation of Impact-Echo Method for Concrete Slab Thickness Measurement, *Journal of the Korean Society for Nondestructive Testing*, Vol 26, Issue 6, pp 427-439 ([paper](#))

Manuscripts in Preparation

- [5] "Global Crop-Specific Trade Openness and Risk due to Extreme Temperature and Wetness for the Last Half Century" with Megan Konar, Peter Debaere, and Kathy Baylis
- [4] "Projecting Water Shortage: The Modeling Conundrum" with Vincent Tidwell, Nathalie Voisin, and Jim Yoon
- [3] "Estimating Wildfire-Induced Impacts to Photovoltaic Energy Production in the Western United States" with Samuel D. Gilletly and Andrea Staid
- [2] "Characterization of Weather During Large-Scale Power Outages in the United States" with Jinzhu Yu, Hiba Baroud, Andrea Staid, and JP Watson
- [1] "Long-term Estimates of Hazard Risks to Power System Assets" with Joshua Mott, Mariah Caballero, and Andrea Staid

Conference Proceedings

- [4] S. Gilletly, **N.D. Jackson**, and A. Staid. (2021) Quantifying Wildfire-Induced Impacts to Photovoltaic Energy Production in the Western United States, *48th IEEE Photovoltaic Specialists (PVSC)*, virtual ([paper](#))
- [3] **N.D. Jackson**, K.I. Tyler, Y. Li, W. Chen, C. Liu and R. Bhargava. (2017) Keeping Current: An Update on the Structure and Evaluation of a Program for Graduate Women Interested in Engineering Academia, *ASEE Annual Conference & Exposition, Conference Proceedings*, Dayton, Ohio ([paper](#))

- [2] K.I. Tyler, Y. Li, **N.D. Jackson**, W. Chen, C. Liu and R. Bhargava. (2017) Overcoming Difficulties in Research Statement Preparation for the Academic Job Search: Expansion of a Peer-Focused Professional Development Program, *ASEE Annual Conference & Exposition, Conference Proceedings*, Dayton, Ohio ([paper](#))
- [1] **N. Jackson**, Y. Malave, C.L. Roberts-Wollmann, S. Case, and J. Lesko (2005) Reliability-based Uniform Flexural Resistance Factors for GFRP Reinforced Concrete Members, *Third International Conference for Composites in Construction*, Lyon, France

SAND Reports

- [3] A. Staid, E.S. Fleming, T. Gunda, and **N.D. Jackson** (2021) Critical Infrastructure Decision-Making Under Long-Term Climate Hazard Uncertainty: The Need for an Integrated, Multidisciplinary Approach, Sandia National Laboratories, SAND2021-11394 R
- [2] T. Gunda, **N.D. Jackson**, D. Sanchez, K. Klise, K. Ruehl, and S.Kuzio (2021) Advanced Data Analytics in Renewable Energy: Review of Capabilities, Needs, and Opportunities, Sandia National Laboratories, SAND2021-6297 R
- [1] T. Gunda, A. Neal, P. Carlson, C. Richardson, J.A. Perez, M. Aamir, B. Anderson, and **N.D. Jackson** (2020) TAOS: A Tool for Assisting Organization Selections for Security Integrated Assessments', Sandia National Laboratories, SAND2020-10751

Invited Presentations

- [11] Pv+Storage Operations and Maintenance Considerations, PV Reliability Workshop, Virtual, (forthcoming) February 2022.
- [10] A Tale of Two Models: Projecting Water Scarcity for the Colorado River Basin, AGU Fall Meeting, Virtual, December 2021.
- [9] A Tale of Two Models: Projecting Water Scarcity for the Colorado River Basin, AGU Fall Meeting, Virtual, December 2021.
- [8] Panelist, PV Magazine Roundtables: Optimizing systems and hardware to meet environmental and performance challenges, Virtual, November 2021.
- [7] Estimating Weather Impacts on Utility-Scale Photovoltaic Plant Performance, Bay Area Research Slam 2021, Virtual, October 2021.
- [6] Weather Impacts On Utility-Scale Photovoltaic Plant Performance, Materials and Structural Systems Division, National Institute of Standards and Technology, Virtual, October 2020.
- [5] Reusing Operations & Maintenance Records: Moving from Reactive to Proactive Management of Solar Photovoltaic Sites, Sandia National Laboratories Emeritus Meeting Early-Career Technical Showcase, Albuquerque, NM, March 2020.
- [4] Multi-Site Assessment of Extreme Weather Impacts on PV Plant Performance and Reliability, PV Reliability Workshop. Lakewood, CO, February 2020.
- [3] Climate Shocks, Agriculture and Trade, Civil and Environmental Engineering Department, Massachusetts Institute of Technology, October 2019.
- [2] Global Gridded Crop Specific Agricultural Areas from 1961-2014, Civil, Materials, and Environmental Engineering Department, University of Illinois at Chicago, February 2019.
- [1] Global Gridded Crop Specific Agricultural Areas from 1961-2014, Energy Water Systems Integration Department, Sandia National Laboratories, January 2019.

Contributed Presentations

† – presentation by mentee

Oral Presentations

- [16] **N.D. Jackson**, V.C. Tidwell, N. Voisin, and J. Yoon. Do We Really Trust Projections of Water Scarcity: Case Study of the Colorado River Basin, American Meteorological Society Annual Meeting, Virtual, January 2022.
- [15] **N.D. Jackson**, T.Gunda, and A. Staid, Weather Impacts On Utility-Scale Photovoltaic Plant Performance, eLightning presentation, AGU Fall Meeting, Virtual, December 2020.
- [14] A. Miara (speaker), J. Macknick, H. Jager, V.C. Tidwell, B.M. Fekete, N. Rao, F. Corsi, C.J. Vörösmarty, **N.D. Jackson**, and S. Cohen, Water Risk for the Bulk Power System: Asset to Grid Impacts, AGU Fall Meeting, Virtual, December 2020.
- [13] **N.D. Jackson**, Evaluation of Extreme Weather Impacts on Utility-scale Photovoltaic Plant Performance, DuraMat Early Career Scientists Seminar Series, Virtual, October 2020.
- [12] **N.D. Jackson**, Multi-site Assessment of Extreme Weather Impacts on PV Plant Performance and Reliability, Sandia National Laboratories 2020 Earth Science Symposium, Virtual, May 2020.
- [11] **N.D. Jackson**, T. Gunda, Incorporating Compound Weather Events into Utility-scale PV Performance Estimates, PV Performance Modeling Collaborative Workshop, Salt Lake City Utah, May 2020, NOTE: Cancelled due to COVID-19.
- [10] **N.D. Jackson**, M. Konar, P. Debaere, and J. Sheffield, Global Climate Shocks to Agriculture from 1961 to 2014, eLightning presentation, AGU Fall Meeting, San Francisco, CA, December 2019.
- [9] M. Konar (speaker) and **N.D. Jackson**, Global Gridded Crop Specific Agricultural Areas from 1961-2014. Fall Meeting of the American Geophysical Union. New Orleans, LA, December 2017.
- [8] **N.D. Jackson**, K.I. Tyler, Y. Li, W. Chen, C. Liu and R. Bhargava. Keeping Current: An Update on the Structure and Evaluation of a Program for Graduate Women Interested in Engineering Academia, ASEE Annual Conference & Exposition, Columbus, Ohio, June 2017.
- [7] K.I. Tyler (speaker), Y. Li, **N.D. Jackson**, W. Chen, C. Liu and R. Bhargava. Overcoming Difficulties in Research Statement Preparation for the Academic Job Search: Expansion of a Peer-Focused Professional Development Program, ASEE Annual Conference & Exposition, Columbus, Ohio, June 2017.
- [6] **N.D. Jackson**, M. Konar, and P. Debaere, Global Crop Allocation and Climate Shocks to Agriculture from 1950-2015, Midwest Big Data Hub Machine Learning Workshop, Urbana, IL, April 2017.
- [5] **N. Jackson**, M. Konar, P. Debaere and J. Sheffield, Global Climate Shocks and Crop Allocation to Agriculture from 1950 - 2015, Civil and Environmental Engineering Department Hydrology Seminar Series, University of Illinois at Urbana-Champaign, January 2017.
- [4] **N. Jackson**, M. Konar, P. Debaere and J. Sheffield, Global Climate Shocks to Agriculture from 1950 - 2015, AGU Fall Meeting. San Francisco, CA, December 2016.
- [3] **N.D. Jackson**, Climate Change and Drought in Marcala, Honduras, Rotary International Vocational Technical Training workshop to Agua y Desarrollo Comunitario, Marcala, Honduras. August 2015.
- [2] **N. Jackson**, M. Konar, A.Y. Hoekstra, The Water Footprint of Food Aid, Interdisciplinary Student Summit, Urbana, IL April 2015.
- [1] **N. Jackson**, Y. Malave, C.L. Roberts-Wollmann (speaker), S. Case, and J. Lesko. Reliability-based Uniform Flexural Resistance Factors for GFRP Reinforced Concrete Members (presentation), Third International Conference in Composites for Construction, Lyon, France, July 2005.

Poster Presentations

- [10] S. Gilletly (speaker), **N.D. Jackson** and A. Staid, Quantifying Wildfire-Induced Impacts to Photovoltaic Energy Production in the Western United States, June 2021.
- [9] **N.D. Jackson**, T. Gunda, and A. Staid, Weather Impacts On Utility-Scale Photovoltaic Plant Performance, PV Reliability Workshop, Virtual, February 2021.
- [8] **N.D. Jackson** and T. Gunda, Reusing Operations & Maintenance Records: Moving from Reactive to Proactive Management of Solar Photovoltaic Sites. Sandia National Laboratories 13th Annual Postdoctoral Technical Showcase, Albuquerque, NM, December 2019.
- [7] **N.D. Jackson** and T. Gunda, Reusing Operations & Maintenance Records: Moving from Reactive to Proactive Management of Solar Photovoltaic Sites, AGU Fall Meeting, San Francisco, CA, December 2019.
- [6] M. Konar (speaker), **N.D. Jackson**, P. Debaere, and J. Sheffield. Trade openness and climate shocks in agriculture, AGU Fall Meeting, San Francisco, CA, December 2019.
- [5] J. Kolweier (speaker)[†], T. Bhole (speaker)[†], and **N.D. Jackson**. Evaluating FAIRness for Effective Dataset Presentation. University of Illinois at Urbana-Champaign Undergraduate Research Symposium, April 2019.
- [4] R. von Gnechten (speaker)[†], M. Konar, **N.D. Jackson**, K. Baylis, P. Anderson, S. Giroux, T.P. Evans, A network analysis of household food sharing in Zambia, AGU Fall Meeting, San Francisco, CA, December 2018.
- [3] **N. Jackson**, M. Konar, A.Y. Hoekstra, The Water Footprint of Food Aid, AGU Fall Meeting, San Francisco, CA, December 2015.
- [2] **N. Jackson**, M. Konar, A.Y. Hoekstra. The Water Footprint of Food Aid, Illinois Water Day, Urbana, IL, April 2015.
- [1] **N. Jackson** and A-P Witmer, The Human-Water Nexus: Effective Engineering Lessons from Fatima, Honduras Water Project, Illinois Water Day, Urbana, IL, April 2015.

Media

- [13] Sandia Lab News: "Sandia Shines in Inaugural Bay Area Postdoctoral Research SLAM" by Amy Treece, 10 December 2021.
- [12] Ars Technica: "The Stormy Relationship Between Solar Power and the Weather" by Doug Johnson, 14 September 2021.
- [11] PV Magazine: "Measuring Impacts on Solar Performance, Whatever the Weather" by Mark Hutchins, 01 September 2021.
- [10] Meteorological Technology International: "Snowstorms Found to Have the Biggest Impact on US Solar Farm Production" by Dan Symonds, 01 September 2021.
- [9] Technology Times: "Use of Machine Learning to Study Impacts of Severe Weather on US Solar Farms" by Zainab Asif, 01 September 2021.
- [8] Lab Manager: "Researchers Uncover Hidden Factors That Affect Solar Farms during Severe Weather", 01 September 2021.
- [7] Focus Technica: "Measuring Impacts, Whatever the Weather" by Peter Moore, 01 September 2021.

- [6] Eurasia Review: "Sandia Uncovers Hidden Factors That Affect Solar Farms During Severe Weather", 01 September 2021.
- [5] Tech Post and Science: "Machine Learning Identifies Hidden Factors That Affect Solar Farms During Severe Weather", 31 August 2021.
- [4] Tech Xplore: "Machine Learning Identifies Hidden Factors That Affect Solar Farms During Severe Weather", 31 August 2021.
- [3] Science Daily: "Hidden Factors That Affect Solar Farms During Severe Weather", 31 August 2021.
- [2] Environmental News Network: "Sandia Uncovers Hidden Factors That Affect Solar Farms During Severe Weather", 31 August 2021.
- [1] Sandia Lab News: "Sandia Uncovers Hidden Factors That Affect Solar Farms During Severe Weather" by Mollie Rappe, 27 August 2021.

Teaching

8 semesters teaching experience with 3 as an instructor

† – Ranked as outstanding, ‡ – Ranked as excellent

F = Fall, Sp = Spring, Su = Summer

Role	Course Title	Academic Unit	Term
University of Illinois at Urbana-Champaign			
Co-Instructor	iEFX Research	College of Engineering	Su 2018 [†]
Co-Instructor	Writing in the Engineering Fields	College of Engineering	Sp 2018 [†]
Teaching Assistant	Water Resources Engineering	Civil & Environmental Engineering	F 2015
Teaching Assistant	Mechanics for MatSE	Materials Science & Engineering	Sp 2014 [‡]
Teaching Assistant	Thermal-Mech Behavior of Matls	Materials Science & Engineering	F 2013
Teaching Assistant	Thermal-Mech Behavior of Matls	Materials Science & Engineering	F 2012
Virginia Tech			
Instructor	Mechanical Behavior of Materials Laboratory	Engineering Science and Mechanics	Su 2008
Teaching Assistant	Engineering Exploration	Engineering Education	F 2007

Mentorship

Provided direct supervision to 3 graduate and 7 undergraduate students as well as mentored 52 students in 6 training programs

F = Fall, Sp = Spring, Su = Summer

Direct Supervision

* – From a demographic under-represented in STEM fields

Graduate Students

Mariah Caballero*	Sandia National Laboratories	F2020 – Present
Natalie Gayoso*	Sandia National Laboratories	F2021 – Sp2022
Rachel von Gnechten*	University of Illinois at Urbana-Champaign	2017 – 2019

Undergraduate Students

Joshua Mott	Sandia National Laboratories	Su2020 – Present
Tanvi Bhole*	University of Illinois at Urbana-Champaign Undergraduate Research Apprenticeship Program (UIUC URAP)	Sp2019
Jonathan Kolweier	UIUC URAP	Sp2019
Jacob Povlich	University of Illinois at Urbana-Champaign Civil & Environmental Engineering Research Experience for Undergraduates (UIUC CEE REU)	Sp2018
Rayan Fadel	UIUC CEE REU	Sp2018
Sajani Gumidyala*	UIUC CEE REU	Sp2016
Namrata Logishetty*	UIUC CEE REU	Sp2015

Training Programs

Role	Program	Students	Term
Professional Mentor	Florida International University Senior Capstone	5	F2021 – Present
Research Team Leader	Summer Research Opportunities Program (SROP) & Incubating a New Community of Leaders Using Software, Inclusion, Innovation, Interdisciplinary and Open-Science (INCLUSION)	12	Su2019
Research Team Leader	SROP & INCLUSION	11	Su2018
Research Team Leader	SROP & INCLUSION	10	Su2017
Research Team Leader	SROP	8	Su2016
Research Team Leader	SROP	6	Su2009

Service to the Profession**Appointed or Elected Leadership**

Steering Committee Member	Hazards Equity Working Group of the Natural Hazards Section, AGU	2020 – 2022
Board of Directors	Akelos	2016 – 2018
Membership Chair	Student Division, ASEE	2015 – 2016

Committee Membership Involvement

Member	Natural Hazards Section Student and Early Career Committee, AGU	2019 – Present
Member	Earth & Space Science Informatics Honors Canvassing Committee, AGU	2019 – 2020

Conference Organization Involvement

Primary Convener	Challenges and Opportunities to Tackle Uncertainty and Risk in the Energy-Water-Climate Nexus, Frontiers in Hydrology Meeting	2022 (forthcoming)
Co-Convener	PV+Storage, PV Reliability Workshop	2022 (forthcoming)
Judge	Outstanding Student Paper Award, AGU Fall Meeting	2021
Co-Convener	Student & Early Career Voices at AGU, AGU Fall Meeting	2021
Co-Convener	Resilience Modeling of Energy Systems - Parts I/II, SRA Annual Meeting	2021

Co-Organizer	Student & Early Career Conference, AGU Fall Meeting	2019 – 2021
Reviewing Activities		
Reviewer	Artificial Intelligence for the Earth Systems	2022 – Present
Reviewer	Earth's Future	2021 – Present
Conference Reviewer	IEEE Resilience Week	2021
Reviewer	Environmental Research Letters	2016 – Present
Conference Reviewer	ASEE Annual Convention	2015 – Present

Membership in Professional Societies

Society for Risk Analysis (SRA)	2021 – Present
American Society for Civil Engineers (ASCE)	2015 – Present
American Geophysical Union (AGU)	2014 – Present
Society of Women Engineers (SWE)	2014 – Present
American Society for Engineering Education (ASEE)	2014 – Present
Society for Industrial and Applied Mathematics (SIAM)	2008 – Present
American Concrete Institute (ACI)	2004 – 2008

National Laboratory, University, and Community Service

Sandia National Laboratories Service

Hiring Committee Member	Future Of Research in Climate, Earth and Energy (FORCEE) Student Internship Program	2022 – Present
Planning Member	Climate Analytics Community of Practice	2021 – Present
Core Member	Electric Grid Community of Practice	2020 – Present

University of Illinois at Urbana-Champaign Campus Service

Laboratory Assistant	Girls' Adventure in Mathematics (GAMES), Engineering and Science Environmental Engineering and Sustainability (EES) Camp	2019
Interdisciplinary Representative	Department of Civil and Environmental Engineering Graduate Student Advisory Committee	2017–2019
Instructor	Worldwide Youth in Science & Engineering Camp Engineering Ethics session	2017–2018
Chair	Engineering Graduate Student Advisory Committee	2017-2018
Vice Chair	Campus Student Election Commission	2016–2017
President	ASEE Student Chapter	2016–2017
Co-Coordinator	Illinois Female Engineers in Academia Training	2015–2018
Alumni Mentor	Honduras Water Project	2015–2018
Student Member, Secretary	Campus Student Election Commission	2015–2016
Camp Co-Coordinator	GAMES EES Camp	2014–2017
Publicity Chair	ASEE Student Chapter	2014–2015
Student Member	LGBT Resource Center Advisory Committee	2014-2015
Student Consultant on Teaching	College of Engineering	2013-2019

Virginia Tech Campus Service

Panelist	Graduate Honor System	2007–2008 2004–2005
Department Representative	College of Engineering Graduate Student Advisory Committee	2004–2005

Community

Co-Founder	Strategic Preparation for Academic Resilience and Know-how	2021 – Present
Co-Organizer	Scientific Olympiad's Write It Do It Event, Albuquerque, NM	2020
Land Use Fellow	MIT Climate CoLab	2017–2018
Energy-Water Nexus Fellow	MIT Climate CoLab	2017
Waste Management Fellow	MIT Climate CoLab	2016
Member	Mali Water Project	2015–2016
Volunteer Judge	FIRST LEGO League of Illinois	2013–2017
Mentor	University of Illinois Laboratory High School	2013
Reviewer	Martin Luther King Jr. Creative Expressions Competition	2013
Volunteer	Awesome Ladies Preparing for High Achievement Program, Jefferson Middle School, Champaign, IL	2008
Volunteer Judge	FIRST LEGO League of Virginia	2004–2005