

Amanda West

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Education

Georgia Institute of Technology - Atlanta, GA

Doctor of Philosophy in Electrical Engineering, Electrical Energy Systems Aug 2020 – Present
Microelectronics and Nanomanufacturing Certification – Penn State University Fall 2024
Hands on Photovoltaics Experience – National Renewable Energy Laboratory Summer 2024

Master of Science in Electrical Engineering, Supercritical Dielectrics Aug 2020 – May 2024

Bachelor of Science in Electrical Engineering, Semiconductor Devices May 2016

Work Experience

Graduate Research Assistant, Advance Computational Electricity Systems Laboratory Aug 2022 – Present

Georgia Institute of Technology, Atlanta, G.A.

- Developed control theoretic energy regeneration framework to assess semiconductor manufacturing investment in communities resulting in a new methodology to connect business modelling, and electrical power distribution system resilience.
- Developed a novel operational energy metric that calculates the relational electrical energy per node of a transmission network in relation to itself and other nodes of the transmission network, using quantitative data analysis.
- Designed and modeled electricity rate optimization problems, which improved energy access in residential electrical power systems through electrification initiatives and ensured the electric utilities maintained their revenue requirement.
- Conducted testing of multi-period optimization problem to enhance fairness of transmission system planning of public safety power shutoffs utilizing Julia, JMP, and a high-performance cloud computing cluster, resulting in increased resilience in underserved areas.
- Responsible for managing research deliverables and presenting findings through technical presentations and published written work.

Graduate Research Assistant, Plasma Dielectrics Laboratory

Aug 2020 – Aug 2022

Georgia Institute of Technology, Atlanta, G.A.

- Characterized the viscosity of supercritical fluid mixtures to identify a mixture to replace SF₆ in medium voltage DC switchgear utilizing high pressure chambers, gas regulation, LabVIEW data acquisition, quartz tuning fork oscillator circuit design, and impedance analysis.
- Contributed to the ARPA-E BREAKERS EDISON project with a 3-year funding cycle of 3.3 M and the NSF CAREER Supercritical Insulation for Energy and Cost Efficiency (SCIENCE) project with a 5-year funding cycle of 0.5 M
- Conducted bench scale prototyping of supercritical fluid viscosity sensor at 23 times cost reduction from leading supercritical fluid viscosity sensor, resulting in a publication of the prototyping methodology and results.
- Advised three undergraduate students in sensor manufacturing and testing, plasma chamber manufacturing, and computational fluid dynamic simulation, resulting in one student continuing this research as their senior design project.
- Assisted research engineer with high voltage tests for first of its kind hybrid DC circuit breaker prototype with supercritical CO₂ insulation resulting in successful creation of circuit breaker chamber sealing procedure.
- Constructed plasma chamber to conduct gas spectral emission experiments for rapid waste-water treatment utilizing mass flow controllers, roughing pump, and vacuum fittings, resulting in successful creation of argon and oxygen plasmas.

R&D Graduate Intern, Energy Storage and Technology Systems

May 2021 – Aug 2021

Sandia National Laboratories, Atlanta, G.A Remote

- Designed BESS/PV sizing and control optimization problem to replace a gas-fired peaker plant with a case study in Albuquerque, New Mexico, which resulted in 1.12% increase of net present benefits as compared to a new combustion power plant replacement.
- Authored presentation focused on battery/PV sizing and control optimization to replace a gas-fired peaker plant with a case study in Albuquerque, New Mexico
- Presented research findings to the Energy Storage and Technology Systems division, 15 senior research scientists

- Utilized the Anaconda distribution platform and Gurobi optimization solver to develop and solve two convex linear optimization problems

Technical Support Engineer, National Instruments

Nov 2019 – Aug 2020

Austin, T.X.

- Mentored three coworkers through career transitions by teaching them self-advocacy in the workplace
- Provided customers technical information about FPGA, LabVIEW, and system design in a concise and digestible format to achieve their project goals on time
- Established a bi-weekly discussion forum for racial equity awareness which enabled team members to connect and learn about race during these divisive times

Electronics Engineer, United States Air Force 453 Electronic Warfare Squadron (EWS)

Oct 2016 – Oct 2019

San Antonio, T.X.

- Authored white paper discussing satellite communications network and conversion from analog to digital modulation
- Technical advisor to radar propagation model team, enhancing satellite communications section of the software model
- Led 5-person team as the SME, and coordinated with six external organization to virtually train 500+ individuals
- Developed Excel macro using VBA to automate training scenario process which increased efficiency by 50%
- Collaborated with senior computer scientist and engineer for over 6 months to develop accurate GUI training materials
- Designed, developed, and implemented the first training and test plans for virtual mission training software team
- Enhanced antenna pattern configuration code by troubleshooting existing code to include a new antenna pattern format

Undergraduate Research Assistant, Kippelen Research Group

Aug 2014 - Aug 2015

Georgia Institute of Technology, Atlanta, G.A.

- Collaborated with doctoral students creating 60 organic field-effect transistors advancing electronic energy research.
- Utilized four-point probes, spin-coating in air and nitrogen gloveboxes. I characterized the performance of the field-effect transitions using LabVIEW, Microsoft Excel, and Origin software.
- Manufactured, tested, and characterized 180 organic solar cells proving the effectiveness of a new fabrication method
- Designed, tested, and presented four experiments to test the efficacy of the organic photovoltaic recipe. Presented the results and conclusions to lab director and six doctoral candidates verifying the lab processes. This was a part of preliminary work which eventually became a part of one of the five types of solar cells from Georgia Tech sent to the International Space Station to test their operability in the harsh space environment in 2019.

Awards / Scholarships / Fellowships / Achievements

- Graduate Fellowships/Awards:
 - University Center of Exemplary Mentoring (UCEM) (2023)
 - National Science Foundation Graduate Research Fellowship Program (NSF GRFP) (2023)
 - Best Student Presenter, Sandia National Laboratories Future of Research in Climate, Earth and Energy Institute (FORCEE) Student Symposium (2021)
 - Georgia Tech Presidential Fellowship (2020)
 - Graduate Engineering for Minorities (GEM) Ph.D. Engineering and Science Fellowship (2020)
- Professional Awards
 - 453rd Electronic Warfare Squadron Outstanding Civilian Category II of the Year (2018)
 - Air Force Warfare Center Outstanding Civilian Category II of the Year (2017)
 - 453rd Electronic Warfare Squadron Outstanding Civilian Category III of the Quarter (July – Sept 2017)
 - 53rd Electronic Warfare Group Outstanding Civilian Category II of the Quarter (Jan – Mar 2017)

Mentoring and Outreach

Mentoring

- Georgia Institute of Technology, Atlanta G.A.
 - Mark Nicoletti, Undergraduate Researcher Nov 2020 – Apr 2022
 - Celine Jordan, Undergraduate Researcher Jan 2021 – May 2022
 - Sebastian Calzolano, Undergraduate Researcher May 2022 – Aug 2022
 - Braden Queen, Undergraduate Researcher Oct 2023- May 2024
- Pride Peers Georgia Tech LGBTQIA Resource Center, Atlanta G.A. Sept 2021 – May 2022
- Boys and Girls Club of Austin, Austin, T.X. Jan 2020 – March 2020
- Boys and Girls Club of San Antonio, San Antonio, T.X. Mar 2019 – May 2019

- Communities in Schools San Antonio, San Antonio, T.X. Jan 2018 – Apr 2018

Outreach

- Georgia Tech Energy Club, *Southeastern Energy Conference Chair* Jun 2023 Mar 2024
- Georgia Tech Black Graduate Student Association (GTBGSA)
 - Interim President* Jun 2022 – Oct 2023
 - Vice President* May 2021 – June 2022
 - Community Outreach Chair* Aug 2021 – May 2022
- Georgia Tech Graduate Pride (GT Grad Pride) Sept 2021 – Aug 2022

Publications

- A. West** and S. Grijalva, "Regenerative Energy Community Modeling Considering Distribution Network Resilience," 2025 IEEE Canada Electrical Power and Energy Conference (EPEC), Waterloo, ON, Canada, 2025.
- S. Talkington, **A. West**, and R. Haider, "Locational marginal burden: Quantifying the equity of optimal power flow solutions," 15th ACM International Conference on Future and Sustainable Energy Systems (e-Energy '24). Association for Computing Machinery, Singapore, Singapore, 2024.
- A. West** and S. Grijalva, "Shining Light on Electrical Energy Burden: Affordability and Equity in Rate Design," 2024 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 2024.
- S. Grijalva and **A. West**, "The Role of Electricity Prosumers in Regenerative Communities," 2024 IEEE Innovative Smart Grid Technologies North America (ISGT-NA), Washington, DC, USA, 2024
- A. West** and D. Rosewater, "Energy Storage Gas Peaker Replacement: Optimal Sizing and Environmental Benefits," 2022 IEEE Electrical Energy Storage Application and Technologies Conference (EESAT), Austin, TX, USA, 2022, pp. 1-5, doi: 10.1109/EESAT55007.2022.9998045.
- A. Kody, **A. West**, and D. K. Molzahn, "Sharing the load: Considering fairness in de-energization scheduling to mitigate wildfire ignition risk using rolling optimization." IEEE Conference on Decision and Control (CDC), 2022. Available: <https://doi.org/10.48550/arXiv.2204.06543>.
- A. West**, J. Wei, A. Cruz, F. Haque, C. Park, Z. Jin, L. Graber, "Viscosity Measurement of Gaseous and Supercritical Fluids as a Dielectric Medium." IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), 2021.
- J. Wei, A. Cruz, **A. West**, F. Haque, C. Park, L. Graber, "Theoretical Modeling and Experimental Testing on the Electrical Breakdown in Supercritical Fluids." IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), 2021.

Presentations

- "Regenerative Energy Community Modeling Considering Distribution Network Resilience," 2025 IEEE Canada Electrical Power and Energy Conference (EPEC), Waterloo, ON, Canada, 2025
- "Locational marginal burden: Quantifying the equity of optimal power flow solutions," INFORMS 2024, Seattle, WA, USA, 2024
- "Regenerative Energy Communities: Assessing PV Technologies," NREL Hands on Photovoltaics Experience (HOPE) Workshop, Golden CO, USA, 2024
- "Shining Light on Electrical Energy Burden: Affordability and Equity in Rate Design," 2024 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 2024
- "The Role of Electricity Prosumers in Regenerative Communities," 2024 IEEE Innovative Smart Grid Technologies North America (ISGT-NA), Washington, DC, USA, 2024
- "Energy Storage Gas Peaker Replacement: Optimal Sizing and Environmental Benefits," 2022 IEEE Electrical Energy Storage Application and Technologies Conference (EESAT), Austin, TX, USA, 2022
- "Energy Storage Gas Peaker Replacement: Optimal Sizing and Environmental Benefits," Sandia National Laboratories Future of Research in Climate, Earth and Energy Institute (FORCEE) Student Symposium, Remote, USA, 2021
- "Viscosity Measurement of Gaseous and Supercritical Fluids as a Dielectric Medium." IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), 2021

Professional Organizations

- Institute of Electrical and Electronic Engineers (PES, DEIS) Aug 2011 – Present
- National Society of Black Engineers Sept 2011 – Present
- Institute for Operations Research and the Management Sciences (INFORMS) Aug 2023 – Present