Adam B. Birchfield

Assistant Professor
Department of Electrical and Computer Engineering
Texas A&M University
College Station, TX

Office: WEB 215E
Tel: 979-862-2545
Email: abirchfield@tamu.edu

Education

Texas A&M University — College Station, TX
Ph.D., Electrical Engineering, Energy and Power Area — Dec. 2018

University of Illinois at Urbana-Champaign — Urbana, IL
M.S., Electrical and Computer Engineering, Energy and Power Area — Dec. 2016

Auburn University — Auburn, AL
B.E.E., Electrical Engineering, Summa Cum Laude, Honors Scholar — Dec. 2014

Experience

Texas A&M University — College Station, TX
Assistant Professor, Electrical and Computer Engineering — Nov. 2020—present
Graduate Research Assistant, ECEN — Dec. 2016—Dec. 2018

Electric Power Research Institute — Charlotte, NC
Engineer/Scientist, Transmission Operations and Planning, Electromagnetic Threats Group — Sept. 2019—Nov. 2020

Birchfield Consulting LLC — College Station, TX
Independent Research Consultant, contracting to Texas A&M University — Dec. 2018—Sept. 2019

University of Illinois at Urbana-Champaign Graduate Research Assistant, Electrical and Computer Engineering	Urbana, IL Aug. 2015—Dec. 2016
Electric Power Research Institute Contract Engineer, Power System Studies Research Group	Knoxville, TN Feb. 2015—Aug. 2015
Alabama Power Company Engineering Summer Intern, APC Transformer and Electrical Shops	Calera, AL May 2014—Aug. 2014
Technische Universität Kaiserslautern Research Intern, German Academic Exchange Service (DAAD) RISE Program	Kaiserslautern, Germany May 2013—Aug. 2013
Itron, Inc. Student Intern, Research and Development	West Union, SC May 2012—Aug. 2012

Teaching

Texas A&M University

- *ECEN 460 Power Systems Operation and Control*, Spring 2024, Spring 2023, Spring 2021
- *ICPE 615 Smart Grid Fundamentals*, intensive course, Dec 2023, Dec 2022
- Industry Short Course on *Electric Grid Impacts of Geomagnetic Disturbances*, Nov 1-2, 2023
- *ECEN 615 Methods of Large-Scale Electric Grid Analysis*, Fall 2023, Fall 2021
- *ECEN 616 Electromagnetic Transients in Power Systems,* Fall 2022
- *ECEN 214 Electrical Circuit Theory*, Spring 2022
- Short Course on *Power System Analysis,* for Southwest Power Pool, Oct-Nov 2021
- Short course on *Automating PowerWorld with Python*, Nov. 19-22, 2019
- Graduate Teaching Fellow: *ECEN 460 Power Systems Operation and Control,* Fall 2018 [J8]

- Guest Lecturer, "Synthetic power grids," in *ECEN 615 Methods of Electric Power System Analysis*, Fall 2018
- Fellow of the Academy for Future Faculty, Center for the Integration of Research, Teaching, and Learning (CIRTL), Apr. 2018
- Teaching Assistant, Guest Lecturer, *ECEN 460 Power Systems Operation and Control*, Fall 2017

Books

[B1] J. D. Glover, T. J. Overbye, A. B. Birchfield, and M. S. Sarma, *Power System Analysis and Design*, 7th ed. Boston, MA: Cengage, 2023.

Journal Publications

(Mentored graduate students marked with asterisk *, undergraduate with double asterisk **)

[J17] P. Dehghanian, A. Zhang, R. Fatima*, J. Snodgrass, A. B. Birchfield, K. R. Davis, and T. J. Overbye, "An integrated assessment of a G3 GMD event on large-scale power grids: from magnetometer data to geomagnetically induced current analysis," in *IEEE Transactions on Industry Applications,* to appear 2024.

[J16] T. J. Overbye, K. R. Davis, and A. B. Birchfield, "The Electric Grid and Severe Resiliency Events." in *The Bridge: National Academy of Engineering Journal,* vol. 53, no. 2, 2023, pp. 73-79.

[J15] A. B. Birchfield and T. J. Overbye, "A review on providing realistic electric grid simulations for academia and industry," in *Current Sustainable Renewable Energy Reports,* 2023.

[J14] Y. Abu-Khalifa* and A. B. Birchfield, "Techniques for creating synthetic combined electric and natural gas transmission grids," *in IEEE Transactions on Industry Applications*, vol. 59, no. 4, pp. 4734-4743, March 2023.

[J13] A. B. Birchfield, "Graph decomposition for constructing blackstart restoration strategies in benchmark cases," *Electric Power Systems Research,* Nov. 2022.

[J12] H. Li *et al.*, "Building highly detailed synthetic electric grid data sets for combined transmission and distribution systems," in *IEEE Open Access Journal of Power and Energy*, vol. 7, pp. 478-488, Nov. 2020.

[J11] A. B. Birchfield and T. J. Overbye, "Mosaic Packing to Visualize Large-Scale Electric Grid Data," in *IEEE Open Access Journal of Power and Energy*, vol. 7, pp. 212-221, Jun. 2020.

[J10] C. Coffrin, et al., "The power grid library for benchmarking ac optimal power flow algorithms," Pre-print available: https://arxiv.org/pdf/1908.02788.pdf, Aug. 2019.

[J9] R. H. Lee, K. S. Shetye, A. B. Birchfield, and T. J. Overbye, "Using detailed ground modeling to evaluate electric grid impacts of late-time high-altitude electromagnetic pulses (E3 HEMP)," *IEEE Transactions on Power Systems*, vol. 34, no. 2, pp. 1549-1557, Mar. 2019.

[J8] A. B. Birchfield, T. J. Overbye, and K. R. Davis, "Educational applications of large synthetic power grids," *IEEE Transactions on Power Systems*, vol. 34, no. 1, pp. 765-772, Jan. 2019.

[J7] A. B. Birchfield and T. J. Overbye, "Techniques for drawing geographic one-line diagrams: Substation spacing and line routing," *IEEE Transactions on Power Systems*, vol. 33, no. 6, pp. 7269-7276, Nov. 2018.

[J6] A. B. Birchfield, T. Xu, and T. J. Overbye, "Power flow convergence and reactive power planning in the creation of large synthetic grids," *IEEE Transactions on Power Systems*, vol. 33, no. 6, pp. 6667-6674, Nov. 2018.

[J5] T. Xu, A. B. Birchfield, and T. J. Overbye, "Modeling, tuning, and validating system dynamics in synthetic electric grids," *IEEE Transactions on Power Systems*, vol. 33, no. 6, pp. 6501-6509, Nov. 2018.

[J4] J. L. Gannon, A. B. Birchfield, K. S. Shetye, and T. J. Overbye, "A comparison of peak electric fields and GICs in the Pacific Northwest using 1-D and 3-D conductivity models," *Space Weather Journal*, no. 15, pp. 1535-1547, Nov. 2017.

[J3] A. B. Birchfield, E. Schweitzer, M. H. Athari, T. Xu, T. J. Overbye, A. Scaglione, and Z. Wang, "A metric-based validation process to assess the realism of synthetic power grids," *Energies,* vol. 10, no. 1233, pp. 1-14, Aug. 2017.

[J2] A. B. Birchfield, T. Xu, K. M. Gegner, K. S. Shetye, and T. J. Overbye, "Grid structural characteristics as validation criteria for synthetic networks," *IEEE Transactions on Power Systems*, vol. 32, no. 4, pp. 3258-3265, Jul. 2017.

[J1] A. B. Birchfield, K. M. Gegner, T. Xu, K. S. Shetye, and T. J. Overbye, "Statistical considerations in the creation of realistic synthetic power grids for geomagnetic disturbance studies," *IEEE Transactions on Power Systems*, vol. 32, no. 2, pp. 1502-1510, Mar. 2017.

Conference Publications

(Mentored graduate students marked with asterisk *, undergraduate with double asterisk **)

[C41] T. J. Overbye, S. Kunkolienkar, F. Safdarian, A. B. Birchfield, "On the existence of dominant interarea oscillation modes in the North American Eastern Interconnect stability simulations," *57th Hawaii International Conference on System Sciences (HICSS)*, Honolulu, HI, Jan. 2024, pp. 1-9.

[C40] R. Fatima* and A. B. Birchfield, "Impact of time-dependent transformer thermal model on assessment of GICs in large power systems," *2023 North American Power Symposium (NAPS)*, Asheville, NC, USA, Oct. 2023, pp. 1-6.

[C39] J. Baek* and A. B. Birchfield, "A tuning method for exciters and governors in realistic synthetic grids with dynamics," *2023 North American Power Symposium (NAPS)*, Asheville, NC, USA, Oct. 2023, pp. 1-6.

[C38] J. Penaranda* and A. B. Birchfield, "Energizing cold load: Demand after a full system outage," *2023 North American Power Symposium (NAPS)*, Asheville, NC, USA, Oct. 2023, pp. 1-6.

[C37] M. Stevens, T. J. Overbye, J. Snodgrass and A. B. Birchfield, "Generating electric field test patterns for electric grid resiliency studies," *2023 North American Power Symposium (NAPS)*, Asheville, NC, USA, Oct. 2023, pp. 1-6.

[C36] F. Safdarian*, J. Penaranda*, S. Kang, J. Snodgrass, A. Birchfield, T. J. Overbye, "Improving load time series of electric power systems based on the temperatures," *2023 Kansas Power and Energy Conference (KPEC),* Manhattan, KS, Apr. 2023, pp. 1-6.

[C35] J. W. Xia**, A. B. Birchfield, J. Snodgrass, "Undergraduate research in transmission tower physical design for synthetic electric grid cases," *2023 Texas Power and Energy Conference (TPEC),* College Station, TX, Feb. 2023, pp. 1-6.

[C34] O. Oshinkoya*, J. Baek*, J. Kao**, and A. B. Birchfield, "Preliminary analysis of the potential impact of electric vehicle

fleets on large power system inertia floor," *2023 Texas Power and Energy Conference (TPEC),* College Station, TX, Feb. 2023, pp. 1-6.

[C33] J. Penaranda* and A. B. Birchfield, "Application and parameter sensitivities of a state-space cold load pickup model for a synthetic restoration test case," *2022 North American Power Symposium (NAPS)*, Salt Lake City, UT, Sept. 2022, pp. 1-6.

[C32] F. Safdarian *et al.*, "Grid optimization competition on synthetic and industrial power systems," *2022 North American Power Symposium (NAPS)*, Salt Lake City, UT, Sept. 2022, pp. 1-6

[C31] A. B. Birchfield, "Inertia adequacy in transient stability models for synthetic electric grids," *11th Bulk Power Systems Dynamics and Control Symposium (IREP*), Banff, Canada, Jul. 2022, pp. 1-8.

[C30] A. B. Birchfield, "Graph decomposition for constructing blackstart restoration strategies in benchmark cases," *Power Systems Computation Conference (PSCC)*, Porto, Portugal, Jun. 2022. (Same paper as [J13].)

[C29] F. Safdarian *et al.*, "Reactive power and voltage control issues associated with large penetration of distributed energy resources in power systems," *2022 IEEE Power and Energy Conference at Illinois (PECI)*, Champaign, IL, Mar. 2022, pp. 1-6

[C28] F. Safdarian, J. Wert, Y. Liu, A. B. Birchfield, K. S. Shetye, H. Chang, and T. J. Overbye, "Reactive power and voltage control issues associated with large penetration of distributed energy resources in power systems," *Power and Energy Conference at Illinois (PECI)*, Mar. 2022.

[C27] Y. A. Abu-Khalifa*, A. B. Birchfield, "Techniques for creating synthetic combined electric and natural gas transmission grids," *IEEE Texas Power and Energy Conference (TPEC)*, Feb. 2022.

[C26] T. J. Overbye, J. Snodgrass, A. B. Birchfield, M. Stevens, "Toward developing implementable high altitude electromagnetic pulse E3 mitigation strategies for large-scale electric grids," *IEEE Texas Power and Energy Conference (TPEC)*, Feb. 2022.

[C25] G. Bhakta**, A. B. Birchfield, "Applying remedial action schemes using sensitivity analysis for undergraduate research," *2021 North American Power Symposium,* Nov. 2021.

[C24] A. B. Birchfield, T. J. Overbye, “Graph crossings in electric transmission grids,” *2021 North American Power Symposium (NAPS)*, Nov. 2021.

[C23] F. Safdarian, A. B. Birchfield, K. Shetye, and T. J. Overbye, “Additional insights in creating large-scale, high-quality synthetic grids: A case study,” *Kansas Power and Energy Conference (KPEC)*, Apr. 2021.

[C22] T. J. Overbye, J. Wert, K. S. Shetye, F. Safdarian and A. B. Birchfield, "Delaunay Triangulation Based Wide-Area Visualization of Electric Transmission Grids," *2021 IEEE Kansas Power and Energy Conference (KPEC)*, Manhattan, KS, 2021, pp. 1-6.

[C21] A. B. Birchfield, J. Patil, R. Paredes, L. Dueñas-Osorio, “Preliminary analysis of network fragility and resilience in large electric grids,” *2021 IEEE Power and Energy Conference at Illinois (PECI)*, Apr. 2021, pp. 1-6.

[C20] T. J. Overbye, K. S. Shetye, J. Wert, W. Trinh, A. B. Birchfield, T. Rolstad, J. D. Weber, “Techniques for maintaining situational awareness during large-scale electric grid simulations”, *2021 IEEE Power and Energy Conference at Illinois (PECI)*, Apr. 2021, pp. 1-8.

[C19] T. J. Overbye, J. L. Wert, K. S. Shetye, F. Safdarian, and A. B. Birchfield, “The use of geographic data views to help with wide-area electric grid situational awareness”, *2021 IEEE Texas Power and Energy Conference (TPEC)*, Feb. 2021, pp. 1-6

[C18] K. S. Shetye, T. J. Overbye, A. B. Birchfield, J. D. Weber, and T. L. Rolstad, “Computationally efficient identification of power flow alternative solutions with application to geomagnetic disturbance analysis,” *2020 IEEE Texas Power and Energy Conference (TPEC)*, Feb. 2020, pp. 1-6.

[C17] A. B. Birchfield and T. J. Overbye, “Planning sensitivities for building contingency robustness and graph properties into large synthetic grids,” *Hawaii International Conference on System Sciences*, Jan. 2020, pp. 1-8.

[C16] Y. Zhang, K. S. Shetye, A. B. Birchfield and T. J. Overbye, “Grid impact evaluation of localized geomagnetic field enhancements using sensitivity analysis,” *2019 North American Power Symposium (NAPS)*, Wichita, KS, USA, Oct. 2019, pp. 1-6

[C15] T. J. Overbye, J. Wert, A. B. Birchfield and J. D. Weber, "Wide-Area Electric Grid Visualization Using Pseudo-Geographic Mosaic Displays," *2019 North American Power Symposium (NAPS)*, Wichita, KS, USA, Oct. 2019, pp. 1-6.

[C14] T. Xu, H. Li, A. B. Birchfield, and T. J. Overbye, "Synthesize phasor measurement unit data using large-scale electric network models," Pre-print available: https://arxiv.org/pdf/1909.03187.pdf, Oct. 2019.

[C13] T. J. Overbye, Z. Mao, A. B. Birchfield, J. D. Weber and M. Davis, "An interactive, stand-alone and multi-user power system simulator for the PMU time frame," *2019 IEEE Texas Power and Energy Conference (TPEC)*, College Station, TX, USA, Feb. 2019, pp. 1-6.

[C12] K. S. Shetve, A. B. Birchfield, R. H. Lee, T. J. Overbye and J. L. Gannon, "Impact of 1D vs 3D earth conductivity based electric fields on geomagnetically induced currents," *2018 IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe)*, Sarajevo, 2018, pp. 1-6.

[C11] A. B. Birchfield, H. Li, and T. J. Overbye, "Security considerations in transmission planning for creating large synthetic power grids," *Clemson University Power Systems Conference*, Charleston, South Carolina, Sept. 2018. **Second-place Best Paper Award.**

[C10] D. Bodenmiller, A. B. Birchfield, and T. J. Overbye, "Using large-scale synthetic systems for undergraduate research in electric grid islanding," *North American Power Symposium (NAPS)*, Fargo, North Dakota, Sept. 2018.

[C9] E. Schweitzer, T. Xu, A. B. Birchfield, A. Scaglione, T. J. Overbye, R. J. Thomas, Z. Wang, "Towards operational validation: Mapping power system inputs to operating conditions," *Power Systems Computation Conference (PSCC),* Dublin, Ireland, Jun. 2018.

[C8] H. Li, A. L. Bornsheuer, T. Xu, A. B. Birchfield, K. S. Shetye, and T. J. Overbye, "Load modeling in synthetic electric grids," *IEEE Texas Power and Energy Conference*, College Station, Texas, Feb. 2018.

[C7] A. B. Birchfield, T. Xu, K. S. Shetye, and T. J. Overbye, "Building synthetic power transmission networks of many voltage levels, spanning multiple areas," *Hawaii International Conference on System Sciences*, Waikoloa Village, Hawaii, Jan. 2018.

[C6] T. Xu, A. B. Birchfield, K. S. Shetye, and T. J. Overbye, "Creation of synthetic electric grid models for transient stability studies," *Bulk Power Systems Dynamics and Control Symposium (IREP)*, Espinho, Portugal, Sept. 2017.

[C5] A. B. Birchfield, Z. Mao, K. S. Shetye, J. D. Weber, and T. J. Overbye, "Impact of synchronous generator model GENTPJ on system dynamics," *IEEE Power and Energy Society General Meeting*, Chicago, IL, Jul. 2017.

[C4] A. B. Birchfield and T. J. Overbye, "Convergence characteristics of the variable projection method for mode extraction," *IEEE Texas Power and Energy Conference,* College Station, TX, Feb. 2017.

[C3] T. Xu, A. B. Birchfield, K. M. Gegner, K. S. Shetye, and T. J. Overbye, "Application of large-scale synthetic power system models for energy economic studies," *Hawaii International Conference on System Sciences*, Jan. 2017.

[C2] K. M. Gegner, A. B. Birchfield, T. Xu, K. S. Shetye, and T. J. Overbye, "A methodology for the creation of geographically realistic synthetic power flow models," *IEEE Power and Energy Conference at Illinois,* Champaign, IL, Jan. 2016. **Best Paper Award.**

[C1] J. Taylor, A. B. Birchfield, "DMS simulation toolkit for the grid of the future," *CIGRE Grid of the Future Symposium*, Chicago, IL, Oct. 13, 2015.

Technical Reports and other Publications

[R6] T. J. Overbye, A. B. Birchfield, K. Shetye, F. Safdarian, J. Snodgrass, J. Wert, J. Yeo, *Creation of Synthetic Electric Grids (SPP/MISO) Supporting PERFORM*, TAMU final report to USDOE, ARPA-E, Feb. 21, 2023. https://www.osti.gov/servlets/purl/1958696

[R5] *Substation Instrument Transformer Testing: E1 High-Altitude Electromagnetic Pulse (HEMP) Response Measurement: Test Procedure and Results.* EPRI, Palo Alto, CA: August 7, 2020. 3002019672. (Technical Report)

[R4] *A Time-Domain Plane Wave Coupling Model: Model Development and Validation.* EPRI, Palo Alto, CA: July 7, 2020. 3002019446. (Technical Report)

[R3] *E3 High-Altitude Electromagnetic Pulse (HEMP) Assessment of the TEPCO Transformer Fleet: Geomagnetically Induced Current and Transformer Thermal Analysis.* EPRI, Palo Alto, CA: Mar. 25, 2020. 3002018576. (Technical Report)

[R2] A. B. Birchfield, "The creation, validation, and application of synthetic power grids," Ph.D. Dissertation, Texas A&M University, Dec. 2018.

[R1] A. B. Birchfield, "The creation of synthetic power grids: preliminary considerations," M.S. Thesis, University of Illinois at Urbana-Champaign, Dec. 2016.

Invited Sessions, Presentations, Service, and Outreach Activities

- Mentor for Mariam Elnour in the Texas A&M University Academy for Future Faculty, 2023-2024
- A. B. Birchfield, "Creating and validating dynamic models for synthetic electric grids," Texas A&M Smart Grid Center Webinar Series, Oct. 18, 2023.
- A. B. Birchfield, "The future of large electric grids and synthetic test cases," Invited talk at UT-Austin, Aug. 24, 2023
- Coordinated TAMU participation in IEEE PES Power and Energy Education Committee (PEEC) 2023 survey to promote EPG
- A. B. Birchfield, "Synthetic datasets for energy infrastructure modeling," PSERC Webinar, Jan. 25, 2023.
- A. B. Birchfield, "Modeling and analysis of interdependent electric power grid and natural gas network," Texas A&M Smart Grid Center Webinar Series, Sept. 23, 2022.
- Mentor, First-Generation Engineering Students Mentoring Program, Texas A&M University College of Engineering, Aug. 2021—present
- A. B. Birchfield, "Auto-layout techniques for displaying large-scale, geographically-embedded power system data," Texas A&M Smart Grid Center Webinar Series, Jan. 19, 2022.
- A. B. Birchfield, "The design of large synthetic transmission networks and implications for grid fragility and resilience assessment," Texas A&M ECE Department Seminar, Feb. 5, 2021.
- A. B. Birchfield, "Techniques for designing large transmission networks in synthetic electric grids," Texas A&M Smart Grid Center Webinar Series, Dec. 10, 2020

- Power systems research laboratory exhibit, Texas A&M University Aggieland Saturday, February 10, 2018.
- A. B. Birchfield, "Getting the most out of OpenDSS with Python," *Advanced Modeling for Distribution Planning Workshop*, College Station, TX, Apr. 20, 2017.
- A. B. Birchfield, K. M. Gegner, T. Xu, K. S. Shetye, and T. J. Overbye, "Synthetic power grids," poster presentation at *2016 IEEE Power and Energy Society General Meeting*, Boston, MA, Jul. 19, 2016.
- "Educational electricity and magnetism medley," exhibit at University of Illinois Engineering Open House, Mar. 11-12, 2016. **First Place Award in Back to School Category.**

Awards and Honors

- Thomas W. Powell '62 and Powell Industries Inc. Fellowship, Texas A&M University Department of Electrical and Computer Engineering, Aug. 21, 2017.
- Grainger Power Engineering Award, University of Illinois at Urbana-Champaign, Dec. 12, 2016.
- Honorable Mention, National Science Foundation Graduate Research Fellowship Program, Mar. 29, 2016.
- Distinguished Research Fellowship, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Aug. 2015 – Dec. 2016
- Summa Cum Laude, Honors Scholar, Auburn University, December 2014

Conference Leadership

- Faculty Advisor, *TPEC 2024*, Feb. 12-13, 2024. **Secured NSF Award 2341300 for $15k to support Student Travel to TPEC.**
- External International Advisory Committee Member, *PowerTech 2023*, Belgrade, Serbia, June 24-29, 2023
- Faculty Advisor, *TPEC 2023*, Feb 13-14, 2023. **Secured NSF Award 2208780 for $15k to support Student Travel to TPEC.**
- Faculty Advisor, *TPEC 2022*, Feb 28-Mar 1, 2022.
- Publications Chair, 53rd North American Power Symposium (NAPS 2021), Nov. 2021
- Committee Member, *TPEC 2019*, Feb. 7-8, 2019
- Committee Member, *TPEC 2018*, Feb. 8-9, 2018

- Chair, *2017 IEEE Texas Power and Energy Conference (TPEC)*, Feb. 9-10, 2017

Reviewing Activities

- Reviewer, *Power System Computation Conference (PSCC) 2024*
- *NSF Panel Review*, Directorate for Engineering, Mar. 2022
- Reviewer, *IEEE Transactions on Power Systems*
- Reviewer, *IEEE Transactions on Smart Grid*
- Reviewer, *IEEE Open Access Journal of Power and Energy (OAJPE)*
- Reviewer, *American Geophysical Union (AGU) SpaceWeather Journal*
- Reviewer, *Hawaii International Conference on System Sciences (HICSS)*
- Reviewer, *IEEE Power and Energy Society General Meeting*
- Reviewer, *IEEE Power and Energy Conference at Illinois*
- Reviewer, *IEEE Texas Power and Energy Conference*
- Reviewer, *Clemson University Power Systems Conference*

Certifications and Memberships

- Member, IEEE Industry Applications Society, Jan. 2017 – present
- Licensed Engineer-in-training (EIT), State of Texas, Jan. 2015 – present
- Member, IEEE Power and Energy Society, Jan. 2014 – present
- Member, IEEE, Jan. 2013 – present

Doctoral and Masters Committees

- Darius Gray, Masters in Energy Committee Member, in progress
- Luke Lowery, **Doctoral Committee Chair**, in progress
- Jong-oh Baek, **Doctoral Committee Chair**, in progress
- Ramon Hinojosa, **Masters Committee Chair**, in progress
- Kseniia Zhun, Doctoral Committee Member, in progress, Advisor: T. J. Overbye.
- Jordan Cook, Doctoral Committee Member, in progress, Advisor: T. J. Overbye.
- Melvin Stevens, Doctoral Committee Member, in progress, Advisor: T. J. Overbye.
- Seri Kang, Masters Committee Member, in progress, Advisor: T. J. Overbye
- Anna Zhang, Masters Committee Member, *Enhancing Geomagnetic Disturbance Modeling for Power Grids: Investigating*

the Effects of Spatial Variation and Exploring Advanced Data Techniques, Aug. 2023, Advisor: T. J. Overbye.

- Jessica Wert, Doctoral Committee Member, *Extracting Value from Electric Grid Information Towards a Resilient Grid Amidst Decarbonization Efforts*, Aug. 2023, Advisor: T. J. Overbye.
- Rida Fatima, **Masters Committee Chair**, *Geomagnetic Storm and its Impact on Time-dependent Transformer Thermal Response in Large Power Systems,* Aug. 2023
- John Penaranda, **Masters Committee Chair**, *Application and Parameter Sensitiviites of a State-space Cold Load Pickup Model for a Synthetic Restoration Test Case*, Aug. 2023
- Pooria Dehghanian, Doctoral Committee Member, *Thermal Assessment of Power Transformers During Geomagnetic Disturbances: Hazard Characterization, Vulnerability Assessment, and Mitigation Solutions*, Aug. 2023, Advisor: T. J. Overbye.
- Jung Kyo Jung, Masters Committee Member, *A Methodology of Utilizing Electric Vehicles to Improve the Reliability and Resiliency of the Power System in Extreme Weather,* May 2023, Advisor: T. J. Overbye.
- Oluwatoyin Oshinkoya, **Masters Committee Chair**, *Feasibility Study on the Future Impact of Electric Vehicle Fleets on the Power System Inertia Floor*, May 2023
- Yousef Abu-Khalifa, **Masters Committee Chair**, *A Methodology for Building and Simulating Synthetic Natural Gas Transmission Grids to Analyze the Inter-dependencies Between Natural Gas and Electric Power Systems*, May 2023
- Wei Trinh, Doctoral Committee Member, *The Efficient Determination of Electric Grid Modes for Large Systems Using the Matrix Pencil Method*, Aug. 2022, Advisor: T.J. Overbye.
- Jayant Patil, Doctoral Committee Member, **Rice University**, *Principled Surrogate Modeling for Quantitative Performance Assessment of Engineered Systems*, May 2022, Advisor: L. Dueñas-Osorio.
- Yijing Liu, Doctoral Committee Member, *Techniques for Improving Dynamic Performance within Large-scale Electric Grids with High Penetration of Renewable Generation*, May 2022, Advisor: T. J. Overbye.
- Ramyaa Kumar, **Masters Committee Chair**, *Considerations for Real-Time Data Analysis Using Multiple Magnetometer Sources for*

GIC Studies to Improve the Situational Awareness of an Electric Grid Model, Aug. 2021.