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Bri-Mathias Hodge

Education:

Doctor of Philosophy in Chemical Engineering *2006-2010*
School of Chemical Engineering, Purdue University, West Lafayette, Indiana
Thesis Title: *"A Multi-Paradigm Modeling Approach for Energy Systems Analysis"*
Advisors: Joseph F. Pekny & Gintaras V. Reklaitis
Intern – Sandia National Laboratory, Exploratory Simulation Technologies *2008*

Master of Science in Chemical Engineering with Distinction *2004-2005*
Process Design Laboratory, Åbo Akademi University, Turku, Finland
Thesis Title: *"A Genetic Algorithm based Metaheuristic for Production Scheduling"*
Advisor: Tapio Westerlund

Bachelor of Science in Chemical Engineering with University and College Honors *2000-2004*
Carnegie Mellon University, Pittsburgh, Pennsylvania
Minor in German
Exchange Student, Rheinisch-Westfälische Technische Hochschule – Aachen, Germany *2002-2003*

Experience:

Associate Professor, Department of Electrical, Computer and Energy Engineering *2018 – Present*
Associate Director of the Renewable and Sustainable Energy Institute (RASEI) *2021 – Present*
Affiliate, Department of Applied Mathematics *2022 – Present*
University of Colorado – Boulder

- RASEI Fellow
- Lead strategy for the Energy Systems Integration research area as an Associate Director of RASEI, a joint institute between the University of Colorado Boulder and NREL.
- Lead a group of twelve Ph.D. students and Master's students, focusing on power & energy systems simulation, renewable energy integration, and multi-sector decarbonization.
- Started and direct a master's program in Next-Generation Power & Energy Systems with approximately 40 students.

Chief Scientist *2018 – Present*
Distinguished Member of the Research Staff *2021 – Present*
National Renewable Energy Laboratory

- Principal Investigator on DOE, ARPA-E, and industrial projects with a yearly funding level of over $3.5M in FY19.
- Principal Investigator on projects in the areas of: power system communications, power systems data, solar power forecasting, wind power forecasting visualization, wind and solar resource assessment, grid sensing and measurement, commercial building electricity savings, microgrid design, and ancillary service products from renewable energy.

Manager – Power System Design and Studies Group *2016 - 2018*
National Renewable Energy Laboratory

- Management of 25 full-time NREL employees in addition to up to 20 visiting Ph.D. students and interns. Grew the group from 12 FTEs to 25 FTEs in first year.
- Principal Investigator on DOE, ARPA-E, and industrial projects with a yearly funding level of over $3.5M in FY18.
- Principal Investigator on projects in the areas of: power system communications, power systems data, solar power forecasting, wind power forecasting visualization, wind and solar resource assessment, grid sensing and measurement, commercial building electricity savings, microgrid design, and ancillary service products from renewable energy.

Lecturer and Assistant Professor Adjoint *2016 - 2018*
University of Colorado – Boulder – Department of Electrical, Computer and Energy Engineering

- Taught graduate course – Renewable Energy and the Future of the Electricity Grid – every fall semester.
- Ph.D. advisor for two students working on renewable energy integration.

Adjunct and Affiliate Professor *2014 - Present*

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Colorado School of Mines – Department of Chemical and Biological Engineering

- Taught senior design course, CBEN402 – Chemical Engineering Design (Spring 2014)
- Co-supervising a Ph.D. student on the modeling of cyanobacteria consortia

Fulbright Scholar *Summer 2016*

VTT – Wind Power Integration Team, Finland

- Funded through a Fulbright-VTT Grant in Science, Technology and Innovation
- Research on the economics of bulk power flexibility options with high renewable energy penetrations

Section Supervisor – System Planning and Reliability *2014 - 2015*

National Renewable Energy Laboratory – Transmission and Grid Integration Group

- Management of seven full-time NREL employees in addition to eight visiting students and interns.
- Managed wind, solar, and electricity projects with combined yearly funding level of over $1.8M in FY15.
- Principal investigator on projects in the areas of: power system flexibility requirements, integrated distribution-transmission systems modeling, the value of wind power forecasting, wind resource assessment, solar resource assessment, reliability impacts of wind power forecasting, solar power forecasting, and the impacts of electric vehicles on bulk power systems.

Senior Engineer *2013 - 2014*

National Renewable Energy Laboratory – Transmission and Grid Integration Group

- Managed wind, solar, and electricity projects with combined yearly funding level of over $1.8M in FY14, including supervision of NREL staff, postdoctoral researchers, subcontractors, visiting graduate students, and student interns.
- Principal investigator on projects in the areas of: cyber-physical-energy systems, distribution level PMUs, mesoscale climate modeling (WIND Toolkit dataset), the value of wind power forecasting, solar power forecasting, and the impacts of distributed wind on transmission level operations.
- Presented at numerous conferences and technical review committees to disseminate key findings to stakeholders.

Research Engineer *2011 - 2013*

National Renewable Energy Laboratory – Transmission and Grid Integration Group

- Managed wind, solar, and electricity projects with combined yearly funding level of over $400k in FY12 and $2M in FY13, including supervision of NREL staff, postdoctoral researchers, subcontractors, visiting graduate students, and student interns.
- Principal investigator on projects in the areas of: mesoscale climate modeling, wind power forecasting and resource assessment, solar power forecasting, renewable integration costs, the impacts of distributed wind on transmission level operations, the value of wind power forecasting, and sub-hourly solar variability.
- Presented at numerous conferences and technical review committees to disseminate key findings to stakeholders.
- Led statistical analysis of wind and solar forecasting errors for the Western Wind and Solar Integration Study Phase 2.

Post-Doctoral Researcher *2010 - 2011*

National Renewable Energy Laboratory – Transmission and Grid Integration Group

- Examined statistical properties of wind and solar power forecast errors, leading to improved operating reserve requirements in Western utilities.
- Performed research on the role of stochastic unit commitment in systems with high wind power penetration.
- Conducted numerical simulations to establish the potential for residential demand response systems to provide flexibility reserve for wind and solar power integration.

Graduate Research Assistant *2006 - 2010*

Purdue University – School of Chemical Engineering

- Developed a multi-paradigm modeling approach used to analyze the impact of plug-in hybrid electric vehicles on the United States electricity system infrastructure.
- Studied the interactions between plug-in hybrid electric vehicles and wind power integration through vehicle-to-grid power supply.
- Utilized the modeling approach to study the optimal placement of vehicle charging stations in Indianapolis, IN in collaboration with a local utility.

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Graduate Research Assistant *2005*

Åbo Akademi University – Process Design Laboratory

- Designed and implemented a genetic algorithm based metaheuristic for solving classes of classical scheduling problems.

Senior Honors Research *2004*

Carnegie Mellon University - Department of Chemical Engineering

- Designed optimization methods for solving black box fitness function problems.
- Applied algorithms to the optimal production of Gibberellic acid in *Gibberella fujikuroi* fermentation.

Undergraduate Research *2002 - 2003*

RWTH-Aachen - Institute for Process Technology

- Developed mathematical models for crystallization separation processes.
- Optimized distillation column configurations and sequences for complex distillation processes.

Industry Experience:

Lonza, Inc., Williamsport, Pennsylvania *2004*

Intern -Production Research and Development Section

- Determined causes of deviation from production standards.
- Aided in the scale-up of new products in the from lab scale to pilot plant scale.

Competitive Funding at CU Boulder:

Co-PI: "IUCRC Planning Grant: Center for Decarbonizing Chemical Manufacturing Using Sustainable Electrifications (DC-MUSE)", Funding Agency: NSF. PI: Andrew Taylor – NYU, CU-PI: Wilson Smith – **CU Boulder Award:** $20,000. Duration: February 2023 – January 2024.

PI: "Machine Learning-based Dynamic Climate Projections for Power System Planning Datasets", Funding Agency: Climate Change Artificial Intelligence. Co-PI: Aneesh Subramanian – CU, Claire Monteleoni – CU, Himanshu Jain- IIT Roorkee. **Total Award:** $135,000. Duration: January 2022 – August 2023.

Co-PI: "*Center Development on Decarbonization of Chemical Manufacturing – DC - MUSE*", Funding Agency: Alfred P. Sload Foundation. PI: Andre Taylor – NYU. Total Award: $650,000, **CU Boulder Award:** $41,000. Duration: September 2021 – August 2023.

Co-PI: "*A Tandem Electrolysis Process for Multi-Carbon Chemical Production from Carbon Dioxide*", Funding Agency: DOE Fossile Energy Office. Collaborators: Feng Jiao – University of Delaware. Total Award: $1,000,000, **CU Boulder Award:** $225,000. Duration: March 2021 – February 2023.

Co-I: "*Advancing Sustainability through Powered Infrstructure for Roadway Electrification*", Funding Agency: National Science Foundation – Engineering Research Center. PI: Regan Zane, Utah State University, Department of Electrical and Computer Engineering. **Total Award:** $50,600,000. Duration: September 2020 – August 2030.

PI: "*Situational Awareness and Grid Anaomaly Detection (SAGA)*", Funding Agency: National Renewable Energy Laboratory. **Total Award:** $171,828. Duration: August 2020 – May 2022.

PI: "*Modeling and Simulation of Large-Scale Inverter-based Power Systems*", Funding Agency: National Renewable Energy Laboratory. **Total Award:** $209,979. Duration: February 2020 – March 2022.

Co-PI: "*Deep stochastic models for space-time weather-driven grid simulations*", Funding Agency: National Science Foundation – Division of Mathematical Sciences Algorithms for Modern Power Systems (AMPS) . PI: William Kleiber, CU Boulder, Department of Applied Mathematics. **Total Award:** $336,924. Duration: September 2019 – August 2022.

Competitive Funding at NREL:

PI: "*Duke Energy Carbon-Free Resource Integration Study (ZERIS) – Phase 3*", Funding Agency: Duke Energy. **Total Award: $60,000**. Duration: September 2021 – December 2021.

PI: "*Locational Marginal Price Analysis in CAISO Using Production Cost Modeling Tools*", Funding Agency: Western Area Power Administration (WAPA). **Total Award: $299,250**. Duration: September 2021 – June 2022.

Co-PI: "*Scientific Machine Learning for Simulation and Control in Large Scale Power Systems*", Funding Agency: DOE Office of Electricity – Advanced Grid Modeling program. Co-PI: Duncan Callaway, UC Berkeley. Collaborators: LBNL, University of California Berkeley, MIT. **NREL Award:** $235,800. Duration: April 2021 – March 2022.

PI: "*Power-to-X: Decarbonization and Sector Coupling*", Funding Agency: NREL LDRD. **Total Award: $300,000**. Duration: October 2020 – September 2022.

PI: "*PERFORM Dataset Support – Probabilistic Forecasting 2*", Funding Agency: DOE – ARPA-E. **Total Award: $875,000**. Duration: September 2020 – September 2021.

PI: "*PERFORM Dataset Support – Probabilistic Forecasting*", Funding Agency: DOE – ARPA-E. **Total Award: $400,000**. Duration: January 2020 – December 2020.

PI: "*Duke Energy Carbon-Free Resource Integration Study (ZERIS) – Phase 2*", Funding Agency: Duke Energy. **Total Award: $810,000**. Duration: December 2019 – July 2021.

PI: "*Duke Energy Zero-Emission Resource Integration Study (ZERIS)*", Funding Agency: Duke Energy. **Total Award: $150,000**. Duration: March 2019 – August 2019.

PI: "*100% Renewable Energy Design for Niijima Island*", Funding Agency: Tokyo Electric Power Company. **Total Award: $200,000**. Duration: September 2018 – March 2019.

PI: "*Evaluating the potential threat that Internet-connected smart devices pose to the security of the United States Electric Grid*", Funding Agency: NREL Seed Laboratory Directed Research and Development (LDRD). Co-PI: Dane Christensen (NREL) **Total Award: $100,000**. Duration: June 2018 – September 2019.

PI: "*Solar Uncertainty Management and Mitigation for Exceptional Reliability in Grid Operations (SUMMER-GO)*". Funding Agency: U.S. Department of Energy Office of Energy Efficiency and Renewable Energy, Solar Systems Integration Program. Co-PIs: Stephen Jascourt, MDA, Sandip Sharma, ERCOT, Jie Zhang, University of Texas - Dallas. **Total Award: $1,698,933; NREL Award: $849,466**. Duration: July 2018 – July 2021.

PI: "*100% Renewable Energy Islands*", Funding Agency: Tokyo Electric Power Company. **Total Award: $180,000**. Duration: September 2017 – March 2018.

PI: "*Natural Gas – Electricity Interface Study*", Funding Agency: American Electric Power, Environmental Defense Fund, Hewlett Foundation, Kinder Morgan. **Total Award: $600,000**. Duration: October 2017 – September 2019.

PI: "*Peña Station Energy Master Plan – Designing New Rate Structures for Local Energy Districts*", Funding Agency: Panasonic/Xcel Energy. **Total Award: $250,000**. Duration: June 2017 – May 2018.

PI: "*Assistance with HECO's PSIP Revision Plan – Resources Data*", Funding Agency: Hawaiian Electric Company. **Total Award: $70,000**. Duration: May – August 2016.

PI: "*Smart-DS: Synthetic Models for Advanced, Realistic Testing: Distribution Systems and Scenarios*", Funding Agency: ARPA-E. Co-PIs: Bryan Palmintier, NREL, Ignacio Perez-Arriaga, MIT-Comillas, David Sun, ALSTOM Grid. **Total Award: $2,300,000**. Duration: August 2016 – August 2018.

PI: "*Providing Ramping Service with Wind to Enhance Power System Operational Flexibility*", Funding Agency: DOE Wind and Water Program. Co-PI: Jie Zhang, UT-Dallas. **Total Award: $1,500,000**. Duration: March 2016 – March 2019.

Co-PI: "*WindView: An Open Platform for Wind Energy Forecast Visualization*", Funding Agency: DOE Wind and Water Program. PI: Shrirang Abhyankar, Argonne National Laboratory. **Total Award: $1,500,000**. **NREL Award: $750,000**. Duration: March 2016 – March 2019.

PI: "*Assistance with HECO's PSIP Revision Plan*", Funding Agency: Hawaiian Electric Company. **Total Award: $107,822**. Duration: January – March 2016.

PI: "*Opportunistic Hybrid Communications Systems for Distributed PV Coordination*", Funding Agency: SunShot National Laboratory Multiyear Partnership (SuNLaMP). Co-PIs: Liuqing Yang, Colorado State University, Jin Wei, University of Akron. **Total Award: $2,709,398**. Duration: October 2015 – October 2018.

PI: "*Power System Interactions between Renewable Energy and Battery Electric Vehicles*", Funding Agency: Confidential Company. **Total Award: $35,000**. Duration: September 2014 – November 2014.

PI: "*Cyber-Physical-Energy Systems: Theory and Test Bed*", Funding Agency: NREL Laboratory Directed Research and Development (LDRD). **Total Award: $300,536**. Duration: October 2013 – September 2014.

PI: "*Using Low-Cost Distribution System Phasor Measurements to Evaluate Grid Effects of Distributed Solar PV*", Funding Agency: NREL Innovation Challenge. **Total Award: $37,500**. Duration September 2013 – March 2014.

Co-PI: "*Watt-sun: A Multi-scale, Multi-Model, Machine- Learning Solar Forecasting Technology*". Funding Agency: U.S. Department of Energy Office of Energy Efficiency and Renewable Energy, Solar Program. Collaborators: IBM, Argonne National Laboratory, Northeastern University, University of Arizona, Northrop Grumman, ISO New England, Tucson Electric Power. **Total Award: $3,800,000; NREL Award: $640,000**. Duration: February 2013 – July 2016.

PI: "*Assessing the Value of Short-Term Wind Power Forecasting in CAISO*", Funding Agency: Lockheed Martin Corporation. **Total Award: $124,000**. Duration: September 2012 – April 2014.

DOE AOP Funding at NREL:

PI: "Flexibility Assessment in WECC", Funding Agency: DOE Office of Electricity. **FY15 Award: $120,000**.

PI: "Wind Resource Characterization: WFIP Economic Support", Funding Agency: DOE Wind Program. **FY15 Award: $390,000**.

Co-PI: "Integrated Distribution and Transmission Analysis for Very High Penetration Solar PV", Funding Agency: DOE Solar Program. **FY15 Award: $300,000**.

PI: "Flexibility Assessment in WECC", Funding Agency: DOE Office of Electricity. **FY14 Award: $491,000**.

PI: "Wind Resource Characterization: Mesoscale Datasets", Funding Agency: DOE Wind Program. **FY14 Award: $275,000**.

PI: "Grid/Transmission Issues for Distributed Generation", Funding Agency: DOE Wind Program. **FY14 Award: $250,000**.

PI: "Metrics/BA Analysis", Funding Agency: DOE Wind Program. **FY13 Award: $100,000**.

PI: "Wind Resource Characterization: Forecasting Using Analogs", Funding Agency: DOE Wind Program. **FY13 Award: $240,000**.

PI: "Grid/Transmission Issues for Distributed Generation", Funding Agency: DOE Wind Program. **FY13 Award: $450,000**.

PI: "Sub-Hourly Reserves on High Time-Resolution Modeling", Funding Agency: DOE Solar System Integration Program. **FY13 Award: $300,000**.

PI: "Variable Generation Integration Rate Analysis", Funding Agency: DOE Office of Electricity. **FY12 Award: $60,000**.

Book Chapters and Magazine Articles (*Senior Author, † Student/Intern, ‡ Postdoc):

1. Yifu Wu, Jin Wei, Bri-Mathias Hodge: "Towards an Adaptive and Attack-Resilient Communication Infrastructures for Smart Grids", in: Security of Cyber-Physical Systems, H. Karimipoureh, P. Srikantha, H. Farag, J. Wei-Kocsis (Eds.), Springer, 2020.

2. Yingchen Zhang, Rui Yang, Jie Zhang, Yang Weng, Bri-Mathias Hodge: "Predictive Analytics for Comprehensive Energy Systems State Estimation", in: Big Data Application in Power Systems, R. Arghandeh, Y. Zhou (Eds.), Elsevier, 2018.

3. Benjamin Kroposki, Brian Johnson, Yingchen Zhang, Vahan Gevorgian, Paul Deholm, Bri-Mathias Hodge, Bryan Hannegan: "Achieving 100% Renewable Grids – Operating Electric Power Systems with Extremely High Levels of Variable Renewable Energy", IEEE Power & Energy Magazine, Vol. 15, Issue 2, March/April 2017.

4. Brady Stoll, Rishabh Jain†, Carlo Brancucci Martinez-Anido, Eduardo Ibanez, Anthony Florita, Bri-Mathias Hodge*: "Reserve Estimation in Renewable Integration Studies", in: Integration of Large Scale Renewable Energy into Bulk Power System: From Planning to Operation, P. Du, A. Tuohy (Eds.), Springer, 2017

5. Jason Ganley, Jie Zhang‡, Bri-Mathias Hodge*: "Wind Energy", in: Alternative Energy Sources and Technologies: Process Design and Operations, M. Martin (Ed.), Springer, 2016.

6. Mohit Singh, Alicia Allen‡, Bri-Mathias Hodge*: "Grid Connection and Power Conditioning of Wind Farms", in: Handbook of Clean Energy Systems, R. Boehm, H. Yang, J. Yan (Eds.), Wiley, 2015.

7. Bri-Mathias Hodge, Erik Ela, Paul Denholm: "Integration of Renewable Generation", in: Encyclopedia of Sustainability Science and Technology, R. Meyers (Ed.), Springer, 2012.

Journal Publications (*Senior Author, † Student/Intern, ‡ Postdoc):

1. Joseph Gardner, Bri-Mathias Hodge, Nanette Boyle: "Investigating the unique ability of *Trichodesmium* to fix carbon and nitrogen simultaneously using the advanced metabolic modeling framework MiMoSA", **mSystems, In Press**.

2. Marija Marković†, Bri-Mathias Hodge*: "Parameterized Linear Power Flow for High Fidelity Voltage Solutions in Distribution Systems", **IEEE Transactions on Power Systems, In Press**.

3. Yoh Yasuda, Enrico Maria Carlini, Ana Estanqueiro, Peter Borre Eriksen, Damian Flynn, Andres Ramos Galan, Lars Finn Herre, Bri-Mathias Hodge, Hannele Holttinen, Matti Juhani Koivisto, Emilio Gomez-Lazaro, Sergio Martin Martinez, Nickie Menemenlis, German Morales-Espana, Christoph Pellinger, Charlie Smith, Til Kristian Vrana: "Flexibility Chart 2.0: A simple tool to evaluate flexibility resources in various areas", **Renewable & Sustainable Energy Reviews**, Vol. 174, 2023.

4. Dharik Mallapragada, Yury Dvorkin, Miguel Modestino, Daniel Esposito, Wilson Smith, Bri-Mathias Hodge, Michael Harold, Vincent Donnelly, Alice Nuz, Casey Bloomquist, Kyri Baker, Lars Grabow, Yushan Yan, Nav Nidhi Rajput, Ryan Hartman, Elizabeth Biddinger, Eray Aydil, Andre Taylor: "Decarbonization of the Chemical Industry through Electrification: Barriers and Opportunities", **Joule**, Vol. 7, 2023.

5. Burcin Cakir Erdener‡, Brian Sergi, Omar Jose Guerra Fernandez, Aurelio Lazaro Chueca, Kwabena Pambour, Carlo Brancucci, Bri-Mathias Hodge*: "A review of technical and regulatory limits for hydrogen blending in natural gas pipelines", **International Journal of Hydrogen Energy**, Vo. 48, Iss. 14, 2023.

6. Rick Wallace Kenyon†, Amirhossein Sajadi‡, Andy Hoke, Bri-Mathias Hodge*: "Criticality of Inverter Controller Order in Power System Dynamic Studies – Case Study: Maui Island", **Electric Power Systems Research**, Vol. 214, Part A, 2023.

7. Jeffrey Sward†, Jose Daniel Lara, Kate Doubleday†, Bri-Mathias Hodge*: "Online Updating of A Markovian Forecast Representation", **Electric Power Systems Research**, Vol. 212, 2022.

8. Ciaran Roberts, Jose Daniel Lara, Rodrigo Heriquez-Auba, Matthew Bossart†, Bri-Mathias Hodge, Duncan Callaway: "Continuous-Time Echo State Networks for Accelerating Power System Dynamic Simulations", **Electric Power Systems Research**, Vol. 212, 2022.

9. Thomas Powers†, Amirhossein Sajadi‡, Bri-Mathias Hodge*: "The Current Opportunities and Challenges for Offshore Wind in the United States", **The Electricity Journal**, Vol. 35, Iss. 7, 2022.

10. Kate Doubleday†, Jose Daniel Lara, Bri-Mathias Hodge*: "Investigation of Stochastic Unit Commitment to Enable Advanced Flexibility Measures for High Shares of Solar PV", **Applied Energy**, Vol. 321, 2022**.**

11. Simon Julien†, Amirhossein Sajadi‡, Bri-Mathias Hodge*: "Hierarchical Control of Utility-Scale Solar PV Plants for Mitigation of Generation Variability and Ancillary Service Provision", **IEEE Transactions on Sustainable Energy**, Vol. 13, Iss. 3, 2022.

12. Amirhossein Sajadi‡, Rick Wallace Kenyon†, Bri-Mathias Hodge*: "Synchronization in electric power networks with inherent heterogeneity up to 100% inverter-based renewable generation", **Nature Communications**, Vol. 13, 2022.

13. Wenqi Zhang, William Kleiber, Bri-Mathias Hodge, Barry Mather: "A nonstationary and non-Gaussian moving average model for solar irradiance", **Environmetrics**, Vol. 33, Iss. 3, 2022.

14. Burcin Cakir Erdener‡, Cong Feng‡, Kate Doubleday†, Anthony Florita, Bri-Mathias Hodge*: "A review of behind-the-meter solar forecasting", **Renewable and Sustainable Energy Reviews**, Vol. 160, 2022.

15. Cong Feng‡, Jie Zhang, Wenqi Zhang†, Bri-Mathias Hodge*: "Convolutional Neural Networks for Intra-hour Solar Forecasting Based on Sky Image Sequences", **Applied Energy**, Vol. 310, 2022.

16. Jose Daniel Lara†, Oscar Dowson, Kate Doubleday†, Bri-Mathias Hodge*, Duncan Callaway: "A Multi-Stage Stochastic Risk Assessment with Markovian Representation of Renewable Power", **IEEE Transactions on Sustainable Energy**, Vol. 13, Iss. 1, 2022.

17. Ana Somoza-Tornos‡, Omar J. Guerra, Allison M. Crow, Wilson A. Smith, Bri-Mathias Hodge*: "Process modeling, techno-economic assessment, and life cycle assessment of the electrochemical reduction of CO2 – a literature review", **iScience**, Vol. 24, Iss. 7, 2021.

18. Marija Marković†, Amirhossein Sajadi‡, Robert Cruickshank, Anthony Florita, Bri-Mathias Hodge*: "Voltage Estimation in Low-Voltage Distribution Grids with Distributed Energy Resources", **IEEE Transactions on Sustainable Energy**, Vol. 12, Iss. 3, 2021.

19. Paul Denholm, Douglas Arent, Samuel Baldwin, Daniel Bilello, Gregory Brinkman, Jaquelin Cochran, Wesley Cole, Bethany Frew, Vahan Gevorgian, Jenny Heeter, Bri-Mathias Hodge, Benjamin Kroposki, Trieu Mai, Mark O'Malley, Bryan Palmintier, Daniel Steinberg, Yingchen Zhang: "The Challenges of Achieving a 100% Renewable Electricity System in the United States", **Joule**, Vol. 5, Iss. 6, 2021.

20. Iris van Beuzekom†, Bri-Mathias Hodge, Han Slootweg: "Framework for optimization of long-term multi-period investment planning of integrated urban energy systems", **Applied Energy**, Vol. 292, 2021.

21. Rick Wallace Kenyon†, Jeffrey Maguire, Elaina Present, Dane Christensen, Bri-Mathias Hodge*: "Bulk Electric Power System Risks from Coordinated Edge Devices", **IEEE Open Acces Journal of Power and Energy**, Vol. 8, 2021.

22. Omar Guerra‡, Brian Sergi, Michael Craig, Kwabena Addo Pambour, Carlo Brancucci, Bri-Mathias Hodge*: "Coordinated Operation of Electricity and Natural Gas Systems from Day-ahead to Real-time Markets", **Journal of Cleaner Production,** Vol. 281, 2021.

23. Mariya Koleva‡, Omar Guerra‡, Joshua Eichman, Bri-Mathias Hodge, Jennifer Kurtz: "Optimal design of solar-driven electrolytic hydrogen production systems within electricity markets", **Journal of Power Sources**, Vol. 483, 2021.

24. Kate Doubleday†, Stephen Jascourt, William Kleiber, Bri-Mathias Hodge*: "Probabilistic Solar Power Forecasting Using Bayesian Model Averaging", **IEEE Transactions on Sustainable Energy**, Vol. 12, Iss. 1, 2021.

25. Joseph DeCarolis, Paulina Jaramillo, Jeremiah Johnson, David McCollum, Evelina Trutnevyte, David Daniels, Gokce Akin-Olcum, Joule Bergerson, Soolyeon Cho, Joon-Ho Choi, Michael Craig, Anderson de Queiroz, Hadi Eshraghi, Christopher Galik, Timothy Gutowski, Karl Haapala, Bri-Mathias Hodge, Simi Hoque, Jesse Jenkins, Alan Jenn, Daniel Johansson, Noah Kaufman, Juha Kiviluoma, Zhenhong Lin, Heather MacLean, Eric Masanet, Mohammad Masnadi, Colin McMillan, Destenie Nock, Neha Patankar, Dalia Patino-Echeverri, Greg Schively, Sauleh Siddiqui, Amanda Smith, Aranya Venkatesh, Gernot Wagner, Sonia Yeh, Yuyu Zhou: "Leveraging open source tools for collaborative macro-energy system modeling efforts", **Joule**, Vol. 4, 2020.

26. Jose Daniel Lara†, Jonathan T. Lee, Duncan Callaway, Bri-Mathias Hodge: "Experiment Design for Operations Model Computational Simulations", **Electric Power Systems Research**, Vol. 189, 2020.

27. Richard Wallace Kenyon†, Barry Mather, Bri-Mathias Hodge: "Coupled Transmission and Distribution Simulations to Assess Distributed Generation Response to Power System Faults", **Electric Power Systems Research**, Vol. 189, 2020.

28. Ignacio Losada Carreno†, Michael Craig, Michael Rossol, Moetasim Ashfaq, Fulden Batibeniz, Sue Ellen Haupt, Caroline Draxl, Bri-Mathias Hodge, Carlo Brancucci: "Potential impacts of climate change on wind and solar electricity generation in Texas", **Climatic Change**, Vol. 163, 2020.

29. Michael Emmanuel‡, Kate Doubleday†, Burcin Cakir, Marija Markovic†, Bri-Mathias Hodge*: "A review of power system models for flexibility assessment in high solar energy penetration scenarios", **Solar Energy**, Vol. 210, 2020.

30. Rick Wallace Kenyon†, Matthew Bossart†, Marija Markovic†, Kate Doubleday†, Reiko Matsuda-Dunn†, Stefania Mitova†, Simon Julien†, Elaine Hale, Bri-Mathias Hodge*: "Dynamic Stability and Control of Power Systems with High Penetrations of Inverter-Based Resources: An Accessible Review of Current Knowledge and Open Questions", **Solar Energy**, Vol. 210, 2020**.**

31. Carlos Mateo, Fernando Postigo, Fernando de Cuadra, Tomás Gómez, Tarek Elgindy, Pablo Dueñas, , Bri-Mathias Hodge, Venkat Krishnan, Bryan Palmintier: "Building Large-Scale U.S. Synthetic Electric Distribution System Models", **IEEE Transactions on Smart Grid**, Vol. 11, Iss. 6, 2020.

32. Omar Guerra‡, Jiazi Zhang, Joshua Eichman, Paul Denholm, Jennifer Kurtz, Bri-Mathias Hodge: "The Value of Seasonal Energy Storage Technologies for the Integration of Wind and Solar Power", **Energy & Environmental Science**, Vol 13, 2020.

33. S M Shafiul Alam‡, Anthony Florita, Bri-Mathias Hodge*: "Multi-Rate and Event-Driven Kalman Kriging (MREDRIKK) Filter for Distributed PV System State Estimation", **IET Smart Grid**, Vol. 3, Iss. 4, 2020.

34. Bri-Mathias Hodge*, Himanshu Jain, Carlo Brancucci, Gabsu Seo, Magnus Korpås, Juha Kiviluoma, Hannele Holttinen, J. Charles Smith, Antje Orths, Ana Estanqueiro, Lennart Söder, Damian Flynn, Til Krisitan Vrana, Rick Wallace Kenyon†, Benjamin Kroposki: "Addressing Technical Challenges in 100% Variable Inverter-Based Renewable Energy Power Systems", **WIRES Energy and Environment**, Vol. 9, Iss. 5, 2020.

35. Xin Fang, Kwami Senam Sedzro, Haou Yuan, Hongxing Ye, Bri-Mathias Hodge*: "Deliverable Flexible Ramping Products Considering Spatiotemporal Correlation of Wind Generation and Demand Uncertainties", **IEEE Transactions on Power Systems**, Vol. 35, Iss. 4, 2020.

36. Kate Doubleday†, Vanessa Van Scyoc Hernandez†, Bri-Mathias Hodge*: "Benchmark Probabilistic Solar Forecasts: Characteristics and Recommendations", **Solar Energy**, Vol. 206, 2020.

37. Binghui Liu, Jie Zhang, Kwami Sedzro‡, Xin Fang , Bri-Mathias Hodge: "A Clustering-Based Scenario Generation Framework for Power System Analysis with Wind Integration", **Journal of Renewable and Sustainable Energy**, Vol. 12, 2020.

38. Fernando Postigo Marcos, Carlos Mateo Domingo, Tomás Gómez San Román, Fernando de Cuadra Garcia, Pablo Dueñas Martinez, Tarek Elgindy, Bri-Mathias Hodge, Bryan Palmintier: "Phase-Selection Algorithms to Minimize Cost and Imbalance in U.S. Synthetic Distribution Systems", **International Journal of Electrical Power and Energy Systems**, Vol. 120, 2020**.**

39. Michael Craig, Omar Guerra‡,Carlo Brancucci, Kwabena Pambour, Bri-Mathias Hodge*: "The Value of Intra-Day Coordination of Electric Power and Natural Gas System Operations", **Energy Policy**, Vol. 141, 2020.

40. Lennart Söder, Egill Tómasson, Ana Estanqueiro, Damian Flynn, Bri-Mathias Hodge, Juha Kiviluoma, Magnus Korpås, Emmanuel Neau, Antonio Couto, Danny Pudjianto, Goran Strbac, D.L. Burke, Tomás Gómez, Kaushik Das, Dirk Van Hertem, Hanspeter Höschle, Julia Matevosjana, Serafin von Roon, Enrico Maria Carlini, Mauro Caprabianca, Laurens de Vries: "Review of wind generation in adequacy calculations and capacity markets in different systems", **Renewable & Sustainable Energy Reviews**, Vol. 119, 2020.

41. Michael Craig, Paulina Jaramillo, Bri-Mathias Hodge**,** Bart Nijssen, Carlo Brancucci,: "Compounding climate change impacts during high stress periods for a high wind and solar power system in Texas", **Environmental Research Letters** Vol. 15, Iss. 2, 2020.

42. Jari Miettinen†, Hannele Holttinen, Bri-Mathias Hodge: "Simulating wind power forecast error distributions for spatially aggregated wind power plants", **Wind Energy,** Vol. 23, Iss. 1, 2020.

43. Todd Zhen†, Tarek Elgindy, S M Shafiul Alam‡, Bri-Mathias Hodge*, Carl Laird: "Optimal Placement of Data Concentrators for Expansion of the Smart Grid Communications Network ", **IET Smart Grid**, Vol. 2, Iss. 4, 2019.

44. Joseph Gardner, Bri-Mathias Hodge, Nanette Boyle: "Multiscale MultiObjective Systems Analysis (MIMOSA): an advanced metabolic modeling framework for complex systems", **Scientific Reports**, Vol. 9, 2019.

45. Omar Guerra‡, Joshua Eichman, Jennifer Kurtz, Bri-Mathias Hodge: "Cost competitiveness of electrolytic hydrogen.", **Joule**, Vol. 3, Iss. 10, 2019.

46. Cong Feng, Mingjian Cui, Bri-Mathias Hodge, Siyuan Lu, Hendrik Hamann, Jie Zhang: "An Unsupervised Clustering-Based Short-Term Solar Forecasting Methodology", **IEEE Transactions on Sustainable Energy**, Vol. 10, Iss. 4, 2019.

47. Robert Cruickshank III†, Gregor Henze, Rajagopalan Balaji, Bri-Mathias Hodge, Anthony Florita: "Empirical Investigations of the Opportunity Limits of Automatic Residential Electric Load Shaping", **Energies**, Vol. 12, Iss. 17, 2019.

48. Cong Feng, Dazhi Yang, Bri-Mathias Hodge, Jie Zhang: "OpenSolar: Promoting the Openness and Accessibility of Diverse Public Solar Datasets", **Solar Energy**, Vol. 188, 2019.

49. Mingjian Cui, Venkat Krishnan, Bri-Mathias Hodge, Jie Zhang: "A Copula-Based Conditional Probabilistic Forecast Model for Wind Power Ramps", **IEEE Transactions on Smart Grid**, Vol. 10, Iss. 4, 2019.

50. Kate Doubleday†, Andrew Parker, Faeza Hafiz†, Benjamin Irwin, Samuel Hancock, Shanti Pless, Bri-Mathias Hodge*: "Toward a Sub-Hourly Net-Zero Energy District Design Through Integrated Building and Distribution System Modeling", **Journal of Renewable and Sustainable Energy**, Vol. 11, Iss. 3, 2019.

51. Xin Fang, Bri-Mathias Hodge*, Ershun Du†, Fangxing Li, Chongqing Kang: "Introducing Risk Components in Locational Marginal Pricing Wind Power and Load Uncertainty", **IEEE Transactions on Power Systems**, Vol. 34, Issue 3, 2019.

52. Andrew Kumler, Ignacio Losada Carreno†, Michael Craig, Bri-Mathias Hodge, Wesley Cole, Carlo Brancucci: "Inter-annual Variability of Wind and Solar Electricity Generation and Capacity Values in Texas", **Environmental Research Letters**, Vol. 14, 2019.

53. Cong Feng, Mucun Sun, Mingjian Cui, Erol Chartan, Bri-Mathias Hodge, Jie Zhang: "Characterizing Forecastability of Wind Sites in the United States", **Renewable Energy**, Vol. 133, 2019.

54. Niina Helistö Juha Kiviluoma, Hannele Holttinen, Jose Daniel Lara†, Bri-Mathias Hodge: "Including operational aspects in the planning of power systems with large amounts of variable generation: a review of modelling approaches", **WIRES Energy and Environment**, 2019.

55. Mucun Sun, Cong Feng, Erol Chartan, Bri-Mathias Hodge, Jie Zhang: "A Two-Step Short-Term Probabilistic Wind Forecasting Methodology Based on Predictive Distribution Optimization" **Applied Energy**, Vol. 238, 2019.

56. Mingjian Cui, Jie Zhang, Qin Wang, Venkat Krishnan, Bri-Mathias Hodge*: "A Data-Driven Methodology for Probabilistic Wind Power Ramp Forecasting", **IEEE Transactions on Smart Grid**, Vol. 10, Iss. 2, 2019.

57. Michael Craig, Ignacio Losada Carreno†, Michael Rossol, Bri-Mathias Hodge, Carlo Brancucci: "Effects on Power System Operations of Potential Changes in Wind and Solar Generation Potential under Climate Change", **Environmental Research Letters**, Vol 14, 2019.

58. Kate Doubleday†, Faeza Hafiz†, Andrew Parker, Tarek Elgindy, Anthony Florita, Graziano Salvalai, Gregor Henze, Shanti Pless, Bri-Mathias Hodge*: "Integrated Sustainable Urban District Planning and Distribution System Design", **WIRES Energy and Environment**, 2019.

59. Xinmin Zhang, Yuan Li, Siyuan Lu, Hendrik Hamann, Bri-Mathias Hodge, Brad Lehman: "A Solar Time-based Analog Ensemble Method for Regional Solar Power Forecasting", **IEEE Transactions on Sustainable Energy**, Vol. 10, Iss. 1, 2019.

60. Xin Fang, Bri-Mathias Hodge, Fangxing Li, Ershun Du†, Chongqing Kang: "Adjustable and distributionally robust chance-constrained economic dispatch considering wind power uncertainty", **Journal of Modern Power Systems and Clean Energy**, Vol. 7, Iss. 3, 2019. **Best Paper Award.**

61. Ershun Du†, Ning Zhang, Qin Wang, Bri-Mathias Hodge, Chongqing Kang, Benjamin Kroposki, Qing Xia: "Operation of a High Renewable Penetrated Power System with CSP plants: A Look-ahead Stochastic Unit Commitment Model", **IEEE Transactions on Power Systems**, Vol. 34, Iss. 1, 2019.

62. Wenqi Zhang†, William Kleiber, Anthony Florita, Bri-Mathias Hodge, Barry Mather: "Modeling and Simulation of High Frequency Solar Irradiance", **IEEE Journal of Photovoltaics**, Vol. 9, Iss. 1, 2019.

63. Michael Craig, Stuart Cohen, Jordan Macknick, Caroline Draxl, Omar Guerra‡, Manajit Sengupta, Sue Ellen Haupt, Bri-Mathias Hodge, Carlo Brancucci: "A Review of the Potential Impacts of Climate Change on Bulk Power System Planning and Operations in the United States", **Renewable & Sustainable Energy Reviews**, Vol. 98, 2018.

64. Xin Fang, Bri-Mathias Hodge*, Fangxing Li, Ershun Du†, Chongqing Kang, Fangxing Li: "Modelling Wind Power Spatial-Temporal Correlation in Multi-Interval Optimal Power Flow: A Sparse Correlation Matrix Approach", **Applied Energy**, Vol. 230, 2018.

65. Xin Fang, Linquan Bai, Fangxing Li, Bri-Mathias Hodge: "Hybrid Component and Configuration Model for Combined-Cycle Units in the Unit Commitment Problem", **Journal of Modern Power Systems and Clean Energy**, Vol. 6, Iss. 6, 2018.

66. Xin Fang, Bri-Mathias Hodge, Linquan Bai, Hantao Cui, Fangxing Li: "Mean-Variance Optimization-Based Energy Storage Scheduling Considering Day-Ahead and Real-Time LMP Uncertainties", **IEEE Transactions on Power Systems**, Vol. 33, Iss. 6, 2018.

67. Ershun Du†, Ning Zhang, Qin Wang, Bri-Mathias Hodge, Chongqing Kang, Benjamin Kroposki: "The Role of Concentrating Solar Power Towards High Renewable Energy Penetrated Power Systems", **IEEE Transactions on Power Systems**, Vol. 33, Iss. 6, 2018.

68. Mingjian Cui, Jie Zhang, Bri-Mathias Hodge, Siyuan Lu, Hendrik Hamann: "A Methodology for Quantifying Reliability Benefits from Improved Solar Power Forecasting in Multi-Timescale Power System Operations", **IEEE Transactions on Smart Grid**, Vol. 9 Iss. 6, 2018.

69. Wenqi Zhang†, William Kleiber, Anthony Florita, Bri-Mathias Hodge, Barry Mather: "A Stochastic Downscaling Approach for Generating High-Frequency Solar Irradiance Scenarios", **Solar Energy**, Vol. 176, 2018.

70. Dominik Dominković†, Greg Stark, Bri-Mathias Hodge, Allan Schrøder Pedersen: "Integrated energy planning with a high share of variable renewable energy sources for a Caribbean island", **Energies**, Vol. 11, Iss. 9, 2018.

71. Xin Fang, Venkat Krishnan, Bri-Mathias Hodge*: "Strategic Offering for Wind Power Producers Considering Energy and Flexible Ramping Products", **Energies**, Vol. 11, Iss. 5, 2018.

72. Michael Craig, Paulina Jaramillo, Bri-Mathias Hodge, Nathaniel Williams, Edson Severnini: "A Retrospective Analysis of the Market Price Response to Distributed Photovoltaic Generation in California", **Energy Policy**, Vol. 121, 2018.

73. Steven Davis, Nathan Lewis, Matthew Shaner, Sonia Aggarwal, Doug Arent, Ines Azevedo, Sally Benson, Thomas Bradley, Jack Brouwer, Yet-Ming Chiang, Christopher Clack, Armond Cohen, Stephen Doig, Jae Edmonds, Paul Fennell, Christopher Field, Bryan Hannegan, Bri-Mathias Hodge, Martin Hoffert, Eric Ingersoll, Paulina Jaramillo, Klaus Lackner, Katharine Mach, Michael Mastrandrea, Joan Ogden, Per Peterson, Daniel Sanchez, Daniel Sperling, Joseph Stagner, Jessika Trancik, Chi-Jen Yang, Ken Calderia: "Net-zero emissions energy systems", **Science**, Vol. 360 Iss. 6396, 2018.

74. Kwabena Pambour, Rostand Sopgwi, Bri-Mathias Hodge, Carlo Brancucci: "The value of day-ahead coordination of power and natural gas network operations", **Energies**, Vol. 11, Iss. 7, 2018.

75. Richard Bryce†, Ignacio Losada Carreno†, Andrew Kumler, Bri-Mathias Hodge, Billy Roberts, Carlo Brancucci Martinez-Anido: "Consequences of Neglecting the Interannual Variability of the Solar Resource: A Case Study of Photovoltaic Power Among the Hawaiian Islands", **Solar Energy**, Vol. 167, 2018.

76. Ershun Du†, Ning Zhang, Bri-Mathias Hodge, Chongqing Kang, Benjamin Kroposki, Qing Xia: "Economic justification of concentrating solar power in high renewable energy penetrated power systems", **Applied Energy**, Vol. 222, 2018.

77. Jianhua Zhang‡, Adarsh Hasandka†, Jin Wei, S M Shafiul Alam‡, Tarek Elgindy, Anthony Florita, Bri-Mathias Hodge*: "Simulating Hybrid Communications for Distributed Smart Grid Applications", **Energies,** Vol. 11, Iss. 4, 2018**.**

78. Bri-Mathias Hodge*, Carlo Brancucci Martinez-Andio, Qin Wang, Erol Chartan, Anthony Florita, Juha Kiviluoma: "The Combined Value of Wind and Solar Power Forecasting Improvements and Electricity Storage", **Applied Energy,** Vol. 214, 2018.

79. Andrew Clifton, Bri-Mathias Hodge*, Caroline Draxl, Jake Badger, Aron Habte: "Wind and Solar Resource Data Sets", **WIRES Energy and Environment**, Vol. 7, Iss. 2, 2018.

80. Michael Craig, Paulina Jaramillo, Bri-Mathias Hodge: "Carbon Dioxide Emissions Effects of Grid-Scale Electricity Storage in a Decarbonizing Power System", **Environmental Research Letters**, Vol. 13, No. 1, 2018.

81. Ivonne Peña†, Carlo Brancucci Martinez-Anido‡, Bri-Mathias Hodge*: "An Extended IEEE 118-bus Test System with High Renewable Penetration", **IEEE Transactions on Power Systems**, Vol. 33, Iss. 1, pp. 281 – 289, 2018.

82. Fernando Postigo Marcos, Carlos Mateo Domingo, Tomás Gómez San Roman, Bryan Palmintier, Bri-Mathias Hodge, Venkat Krishnan, Fernando de Cuadra Garcia, and Barry Mather: "A review of power distribution test feeders in the United States and the need for synthetic representative networks", **Energies**, Vol. 10, Issue 11, 2017.

83. Ricardo Bessa, Corinna Möhrlen, Vanessa Fundel, Malte Siefert, Jethro Browell, Sebastian Haglund El Gaidi, Bri-Mathias Hodge, Umit Cali, George Kariniotakis: "Towards Improved Understanding of the Applicability of Uncertainty Forecasts in the Electric Power Industry", **Energies**, Vol. 10, Issue 9, 2017.

84. Qin Wang‡, Bri-Mathias Hodge*: "Enhancing Power System Operational Flexibility with Flexible Ramping Products: A Review", **IEEE Transactions on Industrial Informatics,** Vol. 13, Issue 4, pp. 1652 – 1664, 2017.

85. Hongyu Wu, Ibrahim Krad, Erik Ela, Anthony Florita, Eduardo Ibanez, Jie Zhang‡, Bri-Mathias Hodge*: "Stochastic Multi-Timescale Power Systems Operation with Variable Wind Generation", **IEEE Transactions on Power Systems,** Vol. 32, Issue 5, pp. 3325 - 3337, 2017.

86. Mingjian Cui†, Jie Zhang‡, Hongyu Wu, Bri-Mathias Hodge*: "Wind-Friendly Flexible Ramping Product Design in Multi-Timescale Power System Operations", **IEEE Transactions on Sustainable Energy,** Vol. 8, pp. 1064 – 1075, 2017.

87. Mingjian Cui†, Jie Zhang‡, Cong Feng, Anthony Florita, Yuanzhang Sun, Bri-Mathias Hodge*: "Characterizing and Analyzing Ramping Events in Wind Power, Solar Power, Load, and Netload", **Renewable Energy**, Vol. 11, pp. 227 – 244, 2017.

88. Jie Zhang‡, Mingjian Cui†, Bri-Mathias Hodge*, Anthony Florita, Jeffrey Friedman: "Ramp Forecasting Performance from Improved Short-Term Wind Power Forecasting Over Multiple Spatial and Temporal Scales", **Energy,** Vol. 122, pp. 528-541, 2017.

89. Cong Feng, Mingjian Cui, Bri-Mathias Hodge, Jie Zhang: "A Data-Driven Multi-Model Methodology with Deep Feature Selection for Short-Term Wind Forecasting", **Applied Energy,** Vol. 190, pp. 1245 – 1257, 2017.

90. Bryan Palmintier, Elaine Hale, Timothy Hansen†, Wesley Jones, David Biagioni, Harry Sorensen, Hongyu Wu, Bri-Mathias Hodge*: "IGMS: An Integrated ISO-to-Appliance Scale Grid Modeling System", **IEEE Transactions on Smart Grid,** Vol. 8, Iss. 3, pp. 1525 – 1534, 2016.

91. Qin Wang‡, Hongyu Wu, Anthony Florita, Carlo Brancucci Martinez-Anido, Bri-Mathias Hodge*: "The Value of Improved Wind Power Forecasting: Grid Flexibility Quantification, Ramp Capability Analysis, and Impacts of Electricity Market Operation Timescales", **Applied Energy,** Vol. 184, pp. 696 – 713, 2016.

92. Jie Zhang‡, Risabh Jain†, Bri-Mathias Hodge*: "A Data-Driven Method to Characterize Turbulence-Caused Uncertainty in Wind Power Generation", **Energy,** Vol. 112, pp. 1139 – 1152, 2016.

93. Qin Wang‡, Carlo Brancucci Martinez-Anido‡, Hongyu Wu, Anthony Florita, Bri-Mathias Hodge*: "Quantifying the Economic and Grid Reliability Impacts of Improved Wind Power Forecasting", **IEEE Transactions on Sustainable Energy,** Vol. 7, Iss. 4, pp. 1525 – 1537, 2016.

94. Carlo Brancucci Martinez-Anido‡, Gregory Brinkman, Bri-Mathias Hodge*: "The Impact of Wind Power on Electricity Prices", **Renewable Energy,** Vol. 94, pp. 474 – 487, 2016.

95. Carlo Brancucci Martinez-Anido‡, Benjamin Botor†, Anthony Florita, Siyuan Lu, Hendrik F. Hamann, Bri-Mathias Hodge*: "The Value of Day-Ahead Solar Forecasting Improvement", **Solar Energy,** Vol. 129, pp. 192 – 203, 2016.

96. Emilio Gomez-Lazaro, M. Carmen Bueso, Mathieu Kessler, Sergio Martin-Martinez, Jie Zhang, Bri-Mathias Hodge, Angel Molina-Garcia: "Characterization of Aggregated Large-Scale Wind Power with Weibull Mixtures", **Energies**, Vol. 9, Iss. 2, 2016.

97. Mingjian Cui†, Jie Zhang‡, Anthony Florita, Bri-Mathias Hodge, Deping Ke, Yuanzhang Sun: "An Optimized Swinging Door Algorithm for Identifying Wind Ramping Events", **IEEE Transactions on Sustainable Energy,** Vol. 7, Iss. 1, pp. 150 – 162**,** 2016.

98. Jie Zhang‡, Bri-Mathias Hodge*, Siyuan Lu, Hendrik F. Hamann, Brad Lehman, Joseph Simmons, Edwin Campos, Venkat Banunarayanan: "Baseline and Target for Regional and Point Solar Power Forecasts: Toward Improved Solar Power Forecasting", **Solar Energy,** Vol 122, pp. 804 – 819, 2015.

99. Jie Zhang‡, Caroline Draxl, Thomas Hopson, Luca Delle Monache, Emilie Vanvyve, Bri-Mathias Hodge*: "Comparison of Numerical Weather Prediction Based Deterministic and Probabilistic Wind Resource Assessment Methods", **Applied Energy,** Vol. 156, pp. 528 – 541, 2015.

100. Caroline Draxl, Andrew Clifton, Bri-Mathias Hodge*, James McCaa: "The Wind Integration National Dataset (WIND) Toolkit", **Applied Energy,** Vol. 151, pp. 355 – 366, 2015.

101. Kirsten Orwig, Mark Ahlstrom, Venkat Banunarayanan, Justin Sharp, James Wilczak, Jeffrey Freedman, Sue Ellen Haupt, Joel Cline, Obadiah Bartholomy, Hendrik Hamann, Bri-Mathias Hodge, Catherine Finley, Dora Nakafuji, Jack Peterson, David Maggio, Melinda Marquis: "Recent Trends in Variable Generation Forecasting and Its Value to the Power System", **IEEE Transactions on Sustainable Energy,** Vol. 6, Iss. 3, pp. 924 – 933, 2015**.**

102. Jing Wu, Audun Botterud, Andrew Mills, Zhi Zhou, Bri-Mathias Hodge, Michael Heaney: "Integrating Solar PV in Utility System Operations: Analytical Framework and Arizona Case Study", **Energy,** Vol. 85, pp. 1 – 9, 2015.

103. Mingjian Cui†, Deping Ke, Yuanzhang Sun, Di Gan, Jie Zhang‡, Bri-Mathias Hodge*: "Wind Power Ramp Event Forecasting Using a Stochastic Scenario Generation Method", **IEEE Transactions on Sustainable Energy,** Vol. 6, Iss. 2, pp. 422 – 433, 2015.

104. Angela Cifor, Paul Denholm, Erik Ela, Bri-Mathias Hodge*, Adam Reed: "The Policy and Instiutional Challenges of Grid Integration of Renewable Energy in the Western United States", **Utilities Policy,** Vol. 33, pp. 34 – 41, 2015.

105. Jie Zhang‡, Bri-Mathias Hodge*, Anthony Florita: "Joint Probability Distribution and Correlation Analysis of Wind and Solar Power Forecast Errors in the Western Interconnection", **Journal of Energy Engineering,** Special Issue on Smart Grid and Emerging Technology Integration, Vol 141, Iss. 1, 2015.

106. Jie Zhang‡, Anthony Florita, Bri-Mathias Hodge*, Siyuan Lu, Hendrik F. Hamann, Venkat Banunarayanan, Anna Brockway: "A Suite of Metrics for Assessing the Performance of Solar Power Forecasting", **Solar Energy,** Vol. 111, pp. 157 – 175, 2015.

107. Jie Zhang‡, Souma Chowdhury, Achille Messac, Bri-Mathias Hodge: "A Hybrid Measure-Correlate-Predict Method for Long-Term Wind Condition Assessment", **Energy Conversion and Management,** Vol. 87, pp. 697 – 710, 2014.

108. Bri-Mathias Hodge*, Erik Ela, Michael Milligan: "Characterizing and Modeling Wind Power Forecast Errors from Operational Systems for Use in Wind Integration Planning Studies", **Wind Engineering,** Vol 36, Iss. 5, pp. 509 – 524, 2012.

109. Shisheng Huang, Hameed Safiullah, Jingjie Xiao, Bri-Mathias Hodge, Ray Hoffman, Joan Soller, Doug Jones, Dennis Dininger, Wallace Tyner, Andrew Liu, Joseph Pekny: "The Effects of Electric Vehicles in the City of Indianapolis", **Energy Policy,** Vol. 49, pp. 442 – 455, 2012.

110. Bri-Mathias Hodge, Shisheng Huang, Aviral Shukla, Joseph F. Pekny, Venkat Venkatasubramanian, Gintaras V. Reklaitis: "The Effects of Vehicle-to-Grid Systems on Wind Power Integration", **Wind Energy,** Vol. 15, Iss. 7, pp. 903 – 914, 2012.

111. Michael Milligan, Erik Ela, Debra Lew, David Corbus, Yih-huei Wan, Bri-Mathias Hodge: "Assessment of Simulated Wind Data Requirements for Wind Integration Studies", **IEEE Transactions on Sustainable Energy,** Vol. 3, Iss. 4, pp. 620 – 626, 2012.

112. Michael Milligan, Erik Ela, Debra Lew, David Corbus, Yih-huei Wan, Bri-Mathias Hodge, Brendan Kirby: "Operational Analysis and Methods for Wind Integration Studies", **IEEE Transactions on Sustainable Energy,** Vol. 3, Iss. 4, pp. 612 – 619, 2012

113. Michael Milligan, Erik Ela, Bri-Mathias Hodge, Brendan Kirby, Debra Lew, Charlton Clark, Jennifer DeCesaro, Kevin Lynn: "Integration of Variable Generation, Cost-Causation, and Integration Costs", **The Electricity Journal**, Vo. 24, Iss. 9, pp. 51 – 63, 2011.

114. Bri-Mathias Hodge, Shisheng Huang, John Siirola, Joseph Pekny, Gintaras Reklaitis: "A Multi-Paradigm Modeling Framework for Energy Systems Modeling, Simulation and Analysis", **Computers & Chemical Engineering,** Vol. 35, Iss. 9, pp. 1725 – 1737, 2011.

115. Jingjie Xiao, Bri-Mathias Hodge, Joseph Pekny, Gintaras Reklaitis: "Operating Reserve Policies with High Wind Power Penetration", **Computers & Chemical Engineering,** Vol. 35, Iss. 9, pp. 1876 – 1885, 2011.

116. Bri-Mathias Hodge, Aviral Shukla, Shisheng Huang, Gintaras Reklaitis, Venkat Venkatasubramanian, Joseph Pekny: "Multi-Paradigm Modeling of the Effects of PHEV Adoption on Electric Utility Usage Levels and Emissions", **Industrial & Engineering Chemistry Research,** Special Issue in Honor of Professor Luis Puigjaner, Vol. 50, Iss. 9, pp. 5191 – 5203, 2011.

117. Shisheng Huang, Bri-Mathias Hodge, Farzad Taheripour, Joseph Pekny, Gintaras Reklaitis, Wallace Tyner: "The Effects of Electricity Pricing on PHEV Competitiveness", **Energy Policy,** Vol. 39, Iss. 3, pp. 1552 – 1561, 2011.

118. J. Camilo Zapata, Bri-Mathias Hodge, Gintaras Reklaitis: "The Multi-mode Resource Constrained Multi-project Scheduling Problem: Alternative Formulations", **AIChE Journal**, Vol. 54, Iss. 8, pp. 2101-2119, 2008.

119. Bri-Mathias Hodge, Frank Pettersson, Nirupam Chakraborti: "Re-evaluation of the Optimal Operating Conditions for the Primary End of an Integrated Steel Plant using Multi-objective Genetic Algorithms and Nash Equilibrium", **Steel Research International,** Vol. 77, Iss. 7, pp. 459 – 461, 2006.

Conference Proceedings (*Senior Author, † Student/Intern, ‡ Postdoc):

1. Wenqi Zhang‡, Cong Feng‡, Bri-Mathias Hodge*: "Joint Resource Modeling and Assessment for Hybrid Distributed Solar and Wind Systems", Accepted for the **2023 IEEE Power & Energy Society Grid Edge Technologies Conference**, *April 10 - 13, 2023, San Diego, CA, USA.*

2. Rick Wallace Kenyon†, Bin Wang, Andy Hoke, Jin Tan, Bri-Mathias Hodge*: "Comparison of Electromagnetic Transient and Phasor Dynamic Simulations: Implications for Inverter Dominated Systems", **2023 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)**, *January 16-19, 2023, Washington, DC, USA.*

3. Nidhin Harilal, Bri-Mathias Hodge, Claire Monteleoni, Aneesh Subramanian: "EnhancedSD: Predicting Solar Power Reanalysis from Climate Projections visa Image Super-Resolution", Accepted for **Tackling Climate Change with Machine Learning at Conference on Neural Information Processing Systems (NeurIPS)**, *December 9, 2022.*

4. Rick Wallace Kenyon†, Amirhossein Sajadi‡, Andy Hoke, Bri-Mathias Hodge*: "Using a Grid-Forming Inverter to Stabilize a Low-Inertia Power System Maui Hawaiian Island", **IEEE Innovative Smart Grid Technologies Europe Conference**, *October 10 -12, 2022, Novi Sad, Serbia.*

5. Amirhossein Sajadi‡, Joann Ranola, Rick Wallace Kenyon†, Bri-Mathias Hodge, Barry Mather: "Electric Power Industry Challenges du to Increasing Shares of Inverter-Based Resources in Power Systems", **IEEE Innovative Smart Grid Technologies Europe Conference**, *October 10 -12, 2022, Novi Sad, Serbia.*

6. Wenqi Zhang‡, Cong Feng‡, Bri-Mathias Hodge*: "A Regime-Switching Spatio-temporal GARCH Method for Short-Term Wind Forecasts", **IEEE Power & Energy Society General Meeting**, *July 17-21, 2022, Denver, CO, USA.*

7. Cong Feng‡, Wenqi Zhang‡, Bri-Mathias Hodge, Yingchen Zhang: "Occlusion-perturbed Deep Learning for Probabilistic Solar Forecasting via Sky Images", **IEEE Power & Energy Society General Meeting**, *July 17-21, 2022, Denver, CO, USA.*

8. Ana Somoza-Tornos‡, Omar Guerra, Wilson Smith, Bri-Mathias Hodge*: "Network optimization of the electrosynthesis of chemicals from CO_2", **Proceedings of the 14th International Symposium on Process Systems Engineering**, *June 19-23, 2022, Kyoto, Japan.*

9. Marena Trujillo†, Rick Wallace Kenyon†, Gemini Yau, Li Yu, Andy Hoke, Bri-Mathias Hodge*: "Operability of a Power System with Synchronous Condensers and Grid-Following Inverters, **49th IEEE Photovoltaic Specialists Conference (PVSC 49),** *June 5- 10, 2022, Philadelphia, PA.* **Best Student Paper Award.**

10. Saumya Sinha, Bri-Mathias Hodge, Claire Monteleoni: "Week-ahead Solar Irradiance Forecasting with Deep Sequence Learning", **11th International Conference on Climate Informatics**, *May 9 - 13, 2022, Asheville, NC.*

11. Saumya Sinha, Bri-Mathias Hodge, Claire Monteleoni: "Subseasonal Solar Power Forecasting via Deep Sequence Learning", **Climate Change AI Workshop at Conference on Neural Information Processing Systems (NeurIPS)**, *December 6 - 14, 2021.*

12. Marija Marković†, Anthony Florita, Bri-Mathias Hodge: "Matrix Completion for Improved Observability in Low-Voltage Distribution Grids", **2021 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)**, *October 25-28, 2021, Aachen, Germany.*

13. Richard Wallace Kenyon†, Amirhossein Sajadi‡, Andy Hoke, Bri-Mathias Hodge*: "Open-Source PSCAD Grid-Following and Grid-Forming Inverters and A Benchmark for Zero-Inertia Power System Simulations", **IEEE Kansas Power and Energy Conference**, *April 19-20, 2021, Manhattan, KS.*

14. Amirhossein Sajadi‡, Richard Wallace Kenyon†, Matthew Bossart†, Bri-Mathias Hodge*: "Dynamic Interaction of Grid-Forming and Grid-Following Inverters with Synchronous Generators in Hybrid Power Plants", **IEEE Kansas Power and Energy Conference**, *April 19-20, 2021, Manhattan, KS.*

15. Jose Daniel Lara†, Rodrigo Henriquez-Auba, Duncan Callaway, Bri-Mathias Hodge: "AGC Simulation Model for Large Renewable Energy Penetration Studies", **52nd North American Power Symposium (NAPS 2020),** *April 11- 14, 2021, Tempe, AZ.*

16. Richard Wallace Kenyon†, Bin Wang, Anderson Hoke, Jin Tan, Chris Antonio, Bri-Mathias Hodge*: "Validation of Maui PSCAD Model: Motivation, Methodology, and Lessons Learned", **52nd North American Power Symposium (NAPS 2020),** *April 11- 14, 2021, Tempe, AZ.*

17. Abigail Ivemeyer, Matthew Bossart†, Richard Wallace Kenyon†, Amirhossein Sajadi‡, Bri-Mathias Hodge, Daniel Molzhan: "Assessing the Accuracy of Balanced Power System Models in the Presence of Voltage Unbalance", 2021 **IEEE Power & Energy Conference at Illinois (PECI)**, *April 1-2, 2021, Urbana, IL.*

18. Jianhua Zhang‡, Jeff Daily, Ryan Mast, Bryan Palmintier, Dheepak Krishnamurthy, Tarek Elgindy, Anthony Florita, Bri-Mathias Hodge: "Development of HELICS-based High-Performance Cyber-Physical Co-simulation Framework for Distributed Energy Resources Applications", **2020 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)**, *November 11- 13, 2020, Tempe, AZ.*

19. Matthew Bossart†, Richard Wallace Kenyon†, Dragan Maksimović, Bri-Mathias Hodge*: "The Effect of Power Electronic Loads on Western Interconnection Stability", **IEEE Power & Energy Society General Meeting**, *August 2-6, 2020, Montreal, Canada.*

20. Cong Feng, Mucun Sun, Jie Zhang, Kate Doubleday†, Bri-Mathias Hodge, Pengwei Du: "A Data-driven Method for Adaptive Reserve Requirements Estimation via Probabilistic Net Load Forecasting", **IEEE Power & Energy Society General Meeting**, *August 2-6, 2020, Montreal, Canada.*

21. Jose Daniel Lara†, Jonathan T. Lee, Duncan Callaway, Bri-Mathias Hodge: "Experiment Design for Operations Model Computational Simulations", **XXI Power Systems Computation Conference (PSCC)**, *June 29th to July 3rd, 2020, Porto, Portugal.*

22. Richard Wallace Kenyon†, Barry Mather, Bri-Mathias Hodge*: "Coupled Transmission and Distribution Simulations to Assess Distributed Generation Response to Power System Faults", **XXI Power Systems Computation Conference (PSCC)**, *June 29th to July 3rd, 2020, Porto, Portugal.*

23. Rick Wallace Kenyon†, Anderson Hoke, Jin Tan, Bri-Mathias Hodge*: "Grid-Following Inverters and Synchronous Condensers: A Grid-Forming Pair?", **Power Systems Conference at Clemson University (PSC)**, March 10-13th*, 2020, Clemson, SC.*

24. Xin Fang, Michael Craig, Bri-Mathias Hodge: "Linear Approximation Line Pack Model for Integrated Electricity and Natural Gas Systems OPF", **IEEE Power & Energy Society General Meeting**, *August 4-9, 2019, Atlanta, GA, USA.*

25. Kwami Sedzro‡, Xin Fang, Bri-Mathias Hodge*: "Analysis of Wind Ramping Product Formulations in a Ramp-constrained Power Grid", **Hawaii International Conference on System Sciences**, January *8-11, 2019, Maui, HI, USA.*

26. Adarsh Hasandka†, Jianhua Zhang‡, Jin Wei, S M Shafiul Alam‡, Anthony Florita, Bri-Mathias Hodge*: "Simulation-based Parameter Optimization Framework for Large-Scale hybrid Smart Grid Communications System Design", **2018 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)**, *October 29 – November 1, Aalborg, Denmark.*

27. Lennart Söder, Ana Estanqueiro, Damian Flynn, Bri-Mathias Hodge, Juha Kiviluoma, Magnus Korpås, Emmanuel Neau, Antonio Couto, Danny Pudjianto, Goran Strbac, D.L. Burke, Tomas Gomez, Kaushik Das: "Wind Generation in Adequacy Calculations and Capacity Markets in Different Power System Control Zones ", **The 17th International Workshop on Integration of Wind Power into Power Systems**, October *17-19, 2018, Stockholm, Sweden*

28. Mucun Sun, Cong Feng, Jie Zhang, Erol Chartan, Bri-Mathias Hodge: "Probabilistic Short-term Wind Forecasting Based on Pinball Loss Optimization", **Probabilistic Methods Applied to Power Systems (PMAPS) 2018**, June 24 - 28*, 2018, Boise, ID, USA.*

29. Iris van Beuzekom†, Bri-Mathias Hodge*, Han Slootweg: "Projecting solar photovoltaic efficiencies from lab to market", **5th IEEE International Energy Conference (ENERGYCON 2018)**, *June 3-7, 2018, Limassol, Cyprus.*

30. Bing Huang†, Venkat Krishnan, Bri-Mathias Hodge*: "Analyzing the Impacts of Variable Renewable Resources on California Net-Load Ramp Events", **IEEE Power & Energy Society General Meeting**, *August 5-9, 2018, Portland, OR, USA.* **Best Paper Award.**

31. Xin Fan, Bri-Mathias Hodge, Venkat Krishnan, Fanxing Li: "Potential of Wind Power to Provide Flexible Ramping Products and Operating Reserve", **IEEE Power & Energy Society General Meeting**, *August 5-9, 2018, Portland, OR, USA.* **Best Paper Award.**

32. Xin Fan, Bri-Mathias Hodge, Fanxing Li: "Capacity Market Model Considering Flexible Resource Requirements", **IEEE Power & Energy Society General Meeting**, *August 5-9, 2018, Portland, OR, USA.*

33. Benjamin Kroposki, Emiliano Dall'Anese, Andrey Bernstein, Yingchen Zhang, Bri-Mathias Hodge: "Autonomous Energy Grids", **Hawaii International Conference on System Sciences,** January *3-6, 2018, Waikoloa, HI, USA.*

34. Cong Feng, Erol Chartan, Bri-Mathias Hodge, Jie Zhang: "Characterizing Time Series Data Diversity for Wind Forecasting", **The 4th IEEE/ACM International Conference on Big Data Computing, Applications and Technologies**, December *5-8, 2017, Austin, TX, USA.* **Best Student Paper Award.**

35. Hannele Holttinen, Juha Kiviluoma, Damian Flynn, Jody Dillon, Barry Mather, Bri-Mathias Hodge, Til Kristian Vrana, Lennart Söder, Kazuhiko Ogimoto, Emmanuel Neau, Nicolaos Cutululis, J. Charles Smith: "Recommendations for Wind and Solar Integration Studies", **The 16th International Workshop on Integration of Wind Power into Power Systems**, October *25-27, 2017, Berlin, Germany.*

36. Alex Dobbs†, Tarek Elgindy, Bri-Mathias Hodge, Anthony Florita: "Short-Term Solar Forecasting Performance of Popular Machine Learning Algorithms", Submitted to **The 7th International Workshop on Integration of Solar Power into Power Systems**, October *24-25, 2017, Berlin, Germany.*

37. Gyu-Jung Cho†, Yun-Sik Oh†, Min-Sung Kim†, Ji-Soo Kim, Chul-Hwang Kim, Barry Mather, Bri-Mathias Hodge*: "Optimal Operation and Dispatch of Voltage Regulation Devices Considering High Penetratios of Distributed Photovoltaic Generation", **International Conference on Power Systems Transients**, *June 26-29, 2017, Seoul, South Korea.*

38. Gyu-Jung Cho†, Yun-Sik Oh†, Min-Sung Kim†, Ji-Soo Kim, Chul-Hwang Kim, Barry Mather, Bri-Mathias Hodge*: "Optimal Capacitor Bank Capacity and Placement in Distribution Systems with High Distributed Solar Power Penetration", **IEEE Power & Energy Society General Meeting**, *July 16-20, 2017, Chicago, IL, USA.*

39. Cong Feng, Mingjian Cui, Meredith Lee, Jie Zhang, Bri-Mathias Hodge, Siyuan Lu, Hendrik Hamann: "Short-term Global Horizontal Irradiance Forecasting Based on Sky Imaging and Pattern Recognition", **IEEE Power & Energy Society General Meeting**, *July 16-20, 2017, Chicago, IL, USA.* **Best Paper Award.**

40. Yifu Wu, Jin Wei, Bri-Mathias Hodge: "A Distributed Middleware Architecture for Attack-Resilient Communications in Smart Grids", **IEEE International Conference on Communications** , *May 21-25, 2017, Paris, France.*

41. Mingjian Cui, Cong Feng, Zhenke Wang, Jie Zhang, Qin Wang, Anthony Florita, Venkat Krishnan, Bri-Mathias Hodge*: "Probabilistic Wind Power Ramp Forecasting Based on a Scenario Generation Method ", **IEEE Power & Energy Society General Meeting**, *July 16-20, 2017, Chicago, IL, USA.*

42. Robert Cruickshank III, Gregor Henze, Rajagaopalan Balaji, Bri-Mathias Hodge, Anthony Florita: "Empirical Investigations of the Opportunity Limits of Automatic Residential Electric Load Shaping", **2017 IEEE Ninth Annual Green Technologies Conference**, *March 30-31, 2017, Denver, CO, USA.*

43. Dexin Wang, Liuqing Yang, Anthony Florita, SM Shafiul Alam‡, Tarek Elgindy, Bri-Mathias Hodge: "Automatic Regionalization Algorithm for Distributed State Estimation in Power Systems", **IEEE Global Conference on Signal and Information Processing**, *December 7-9, 2016, Washington, DC, USA.*

44. Gregor Giebel, Joel Cline, Helmut Frank, Pierre Pinson, Bri-Mathias Hodge, Georges Kariniotakis, Jens Madsen, Corinne Mohrlen: "Wind power forecasting: IE Wind Task 36 & future research issues", **TORQUE 2016** , *October 5-7, 2016, Munich, Germany.*

45. Rishabh Jain†, Yingchen Zhang, Bri-Mathias Hodge*: "Investigating the Impact of Wind Turbines on Distribution System Stability", **IEEE Innovative Smart Grid Technologies Conference**, *September 6-9, 2016, Minneapolis, MN, USA.*

46. Qin Wang‡, Hongyu Wu, Jin Tan, Bri-Mathias Hodge*, Wanning Li, Cheng Luo: "Analyzing the Impacts of Increased Wind Power on Generation Revenue Sufficiency", **IEEE Power & Energy Society General Meeting**, *July 17-21, 2016, Boston, MA, USA.* **Best Paper Award.**

47. Bryan Palmintier, Elaine Hale, Bri-Mathias Hodge*, Kyri Baker, Timothy Hansen†: "Experiences integrating transmission and distribution simulations for DERs with the Integrated Grid Modeling System (IGMS)", **19th Power Systems Computation Conference (PSCC 2016)**, *June 20-24, 2016, Genoa, Italy.*

48. Jun-Hyung Ryu, Bri-Mathias Hodge: "Mathematical Modelling-based Energy System Operation Strategy considering Energy Storage Systems", **Proceedings of the 26th European Symposium on Computer Aided Process Engineering**, *June 12-15, 2016, Portoroz, Slovenia.*

49. Soo bin Lee, Jun-Hyung Ryu, Bri-Mathias Hodge, In-Beum Lee: "Development of a Neural Network-based Renewable Energy Forecasting Framework for Process Industries", **Proceedings of the 26th European Symposium on Computer Aided Process Engineering**, *June 12-15, 2016, Portoroz, Slovenia.*

50. Eduardo Ibanez, Ibrahim Krad, Bri-Mathias Hodge, Erik Ela: "Impacts of Short-Term Solar Power Forecasts in System Operations", **IEEE Power & Energy Society Transmission and Distribution Conference**, *May 2-5, 2016, Dallas, TX, USA.*

51. Mingjian Cui†, Jie Zhang‡, Hongyu Wu, Bri-Mathias Hodge, Deping Ke, Yuanzhang Sun: "Wind Power Ramping Product for Increasing Power System Flexibility", **IEEE Power & Energy Society Transmission and Distribution Conference**, *May 2-5, 2016, Dallas, TX, USA.*

52. Joshua-Benedict Rosenkranz†, Carlo Brancucci Martinez-Anido‡, Bri-Mathias Hodge*: "Analyzing the Impact of Solar Power on Multi-Hourly Thermal Generator Ramping", **2016 IEEE Eighth Annual Green Technologies Conference**, April 7-8*, 2016, Kansas City, MO, USA.*

53. WanYin Cheung†, Jie Zhang‡, Anthony Florita, Bri-Mathias Hodge*, Siyuan Lu, Hendrik Hamann, Qian Sun, Brad Lehman: "Ensemble Solar Forecasting Statistical Quantification and Sensitivity Analysis", **5th International Workshop on Integration of Solar Power into Power Systems**, *October 19-20, 2015, Brussels, Belgium.*

54. Anthony Florita, Jie Zhang‡, Carlo Brancucci Martinez-Andio, Mingjian Cui†, Bri-Mathias Hodge*: "Probabilistic Swinging Door Algorithm as Applied to Photovoltaic Power Ramping Event Detection", **5th International Workshop on Integration of Solar Power into Power Systems**, *October 19-20, 2015, Brussels, Belgium.*

55. Hongyu Wu, Erik Ela, Ibrahim Krad, Anthony Florita, Jie Zhang‡, Bri-Mathias Hodge*, Eduardo Ibanez, Wenzhong Gao: "An Assessment of the Impact of Stochastic Day-Ahead SCUC on Economic and Reliability Metrics at Multiple Timescales", **IEEE Power & Energy Society General Meeting**, *July 26-30, 2015, Denver, CO, USA.* **Best Paper Award.**

56. Jie Zhang‡, Bri-Mathias Hodge*, Siyuan Lu, Hendrik Hamann, Brad Lehman, Joseph Simmons, Edwin Campos, Venkat Banunarayanan: "Baseline and Target Values for PV Forecasts: Towards Improved Solar Power Forecasting", **IEEE Power & Energy Society General Meeting**, *July 26-30, 2015, Denver, CO, USA.*

57. Mingjian Cui†, Jie Zhang‡, Anthony Florita, Bri-Mathias Hodge, Deping Ke, Yuanzhang Sun: "An Optimized Swinging Door Algorithm for Wind Power Ramp Event Detection", **IEEE Power & Energy Society General Meeting**, *July 26-30, 2015, Denver, CO, USA.*

58. Siyuan Lu, Youngdeok Hwang, Ildar Khabibrakhmanov, Fernando Marianno, Xiaoyan Shao, Jie Zhang, Bri-Mathias Hodge, Hendrik Hamann: "Machine Learning Based Multi-Physical-Model Blending for Enhanced Renewable Energy Forecast – Improvement via Situation Dependent Error Correction", **European Control Conference**, *July 15-17, 2015, Linz, Austria.*

59. Carlo Brancucci Martinez-Anido‡, Bri-Mathias Hodge*, David Palchak, Jari Miettinen†: "The Impact of Distributed Wind on Bulk Power System Operations in ISO-NE", **13th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 11-13, 2014, Berlin, Germany.*

60. Carlo Brancucci Martinez-Anido‡, Anthony Florita, Bri-Mathias Hodge*: "The Impact of Improved Solar Forecasts on Bulk Power System Operations in ISO-NE", **4th International Workshop on Integration of Solar Power into Power Systems**, *November 10-11, 2014, Berlin, Germany.*

61. Robert Weissbach, Wen-Li Wang, Bri-Mathias Hodge, Mei-Huei Tang, James Sonnenmeier: "Generation of Simulated Wind Data Using an Intelligent Algorithm", **46th North American Power Symposium (NAPS)**, *September 7-9, 2014, Pullman, WA, USA.*

62. Jari Miettinen†, Ville Tikka, Jukka Lassila, Jarmo Partanen, Bri-Mathias Hodge: "Minimizing Wind Power Producer's Balancing Costs Using Electrochemical Energy Storage", **11th Nordic Conference on Electricity Distribution System Management and Development (NORDAC)**, *September 8-9, 2014, Stockholm, Sweden.*

63. Jie Zhang‡, Bri-Mathias Hodge*, Anthony Florita, Jeffrey Freedman: "Ramp Forecasting Performance from Improved Short-Term Wind Power Forecasting", **ASME 2014 International Design Engineering Technical Conferences**, *August 17-20, 2014, Buffalo, NY, USA.*

64. Jie Zhang‡, Bri-Mathias Hodge*: "Forecastability as a Design Criterion in Wind Resource Assessment", **8th International Conference on Foundations of Computer-Aided Process Design (FOCAPD 2014)**, *July 13-17, 2014, Cle Elum, WA, USA.*

65. Yingchen Zhang, Alicia Allen‡, Bri-Mathias Hodge*: "Impact of Distribution-Connected Large-Scale Wind Turbines on Transmission System Stability during Large Disturbances", **Proceedings of the IEEE Power & Energy Society General Meeting**, *July 27-31, 2014, National Harbor, MD, USA.*

66. Jie Zhang‡, Souma Chowdhury, Bri-Mathias Hodge*: "Analyzing Effects of Turbulence on Power Generation Using Wind Plant Monitoring Data", **AIAA Science and Technology Forum and Exposition**, *January 13-17, 2014, National Harbor, MD, USA.*

67. Caroline Draxl, Bri-Mathias Hodge*, Kirsten Orwig, Wesley Jones, Keith Searight, Dan Getman, Sara Harrold, Jim McCaa, Joel Cline, Charlton Clark: "Advancements in Wind Intergration Study Data Modeling: The Wind Integration National Dataset (WIND) Toolkit", **12th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 22-24, 2013, London, UK.*

68. Jie Zhang‡, Bri-Mathias Hodge*, Jari Miettinen, Hannele Holttinen, Emilio Gomez-Lazaro, Nicolaos Cutululis, Marisciel Litong-Palima, Poul Sorensen, Anne Line Lovholm, Erik Berge, Jan Dobschinski: "Analysis of Variability and Uncertainty in Wind Power Forecasting: An International Comparison", **12th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 22-24, 2013, London, UK.*

69. Alicia Allen‡, Yingchen Zhang, Bri-Mathias Hodge*: "Impact of Increasing Distributed Wind Power and Wind Turbine Siting on Rural Distribution Feeder Voltage Profiles", **12th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 22-24, 2013, London, UK.*

70. Nicholas Steckler†, Anthony Florita, Jie Zhang‡, Bri-Mathias Hodge*: "Analysis and Synthesis of Load Forecasting Data for Renewable Integration Studies", **12th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 22-24, 2013, London, UK.*

71. Jie Zhang‡, Bri-Mathias Hodge*, Anthony Florita, Siyuan Lu, Hendrik F. Hamann, Venkat Banunarayanan: "Metrics for Evaluating the Accuracy of Solar Power Forecasting", **3rd International Workshop on Integration of Solar Power into Power Systems**, *October 21-22, 2013, London, UK.*

72. Jie Zhang‡, Souma Chowdhury, Achille Messac, Bri-Mathias Hodge: "Assessing Long-Term Wind Conditions by Combining Different Measure-Correlate-Predict Algorithms", **International Design Engineering Technical Conferences and Computers and Information in Engineering Conference 2013**, *August 4-7, 2013, Portland, OR, USA.*

73. Jie Zhang‡, Bri-Mathias Hodge*: "Investigating the Correlation Between Wind and Solar Power Forecast Errors in the Western Interconnection", **Proceedings of the ASME 2013 7th International Conference**

on Energy Sustainability & 11th Fuel Cell Science Engineering and Technology Conference, *July 14-19, 2013, Minneapolis, MN, USA.*

74. Jing Wu, Zhi Zhou, Audun Botterud, Andrew Mills, Bri-Mathias Hodge, Michael Heaney: "Impact of Renewable Energy on Power System Cost and Reliability", **Proceedings of the 2013 Industrial and Systems Engineering Research Conference**, *May 18-22, 2013, San Juan, Puerto Rico, USA.*

75. Bri-Mathias Hodge*, Debra Lew, Michael Milligan: "Short-Term Load Forecasting Error Distributions and Implications for Renewable Integration Studies", **2013 IEEE Fifth Annual Green Technologies Conference**, *April 4-5, 2013, Denver, CO, USA.*

76. Anthony Florita, Bri-Mathias Hodge*, Kirsten Orwig: "Identifying Wind and Solar Ramping Events", **2013 IEEE Fifth Annual Green Technologies Conference**, *April 4-5, 2013, Denver, CO, USA.*

77. Sandra Shedd†, Bri-Mathias Hodge*, Anthony Florita, Kirsten Orwig: "Statistical Characterization of Solar Photovoltaic Power Variability at Small Timescales", **The 2nd Annual International Workshop on Integration of Solar Power into Power Systems**, *November 12-13, 2012, Lisbon, Portugal.*

78. Debra Lew, Greg Brinkman, Eduardo Ibanez, Marissa Hummon, Bri-Mathias Hodge, Michael Heaney, Jack King: "Sub-Hourly Impacts of High Solar Penetrations in the Western United States", **The 2nd Annual International Workshop on Integration of Solar Power into Power Systems**, *November 12-13, 2012, Lisbon, Portugal.*

79. Kirsten Orwig, Bri-Mathias Hodge, Greg Brinkman, Erik Ela, Michael Milligan, Venkat Banunarayanan, Saleh Nasir, Jeff Freedman: "Economic Evaluation of Short-Term Wind Power Forecasts in ERCOT: Preliminary Results", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13-15, 2012, Lisbon, Portugal.*

80. Debra Lew, Greg Brinkman, Eduardo Ibanez, Bri-Mathias Hodge, Jack King: "Western Wind and Solar Integration Study Phase 2", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13-15, 2012, Lisbon, Portugal.*

81. Bri-Mathias Hodge*, Sandra Shedd†, Anthony Florita: "Examining the Variability of Wind Power Output in the Regulation Time Frame", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13-15, 2012, Lisbon, Portugal.*

82. Anthony Florita, Bri-Mathias Hodge*, Michael Milligan: "Wind Power Forecasting Error Frequency Analyses for Operational Power System Studies", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13-15, 2012, Lisbon, Portugal.*

83. Bri-Mathias Hodge*, Hannele Holttinen, Samueli Sillanpää, Emilio Gómez-Lázaro, Richard Scharff, Lennart Söder, Xiaoli Larsén, Gregor Giebel, Damian Flynn, Debra Lew, Michael Milligan, Jan Dobschinski: "Wind Power Forecasting Error Distributions: An International Comparison", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13-15, 2012, Lisbon, Portugal.*

84. Bri-Mathias Hodge*, Kirsten Orwig, Michael Milligan: "Examining Information Entropy Approaches as Wind Power Forecasting Performance Metrics", **The 12th International Conference on Probabilistic Methods Applied to Power Systems**, *June 10-14, 2012, Istanbul, Turkey.*

85. Michael Milligan, Bri-Mathias Hodge, Brendan Kirby, Charlton Clark: "Integration Costs: Are They Unique to Wind and Solar Energy", **The American Wind Energy Association Conferece, WINDPOWER 2012**, *June 3-6, 2012, Atlanta, GA, USA.*

86. Bri-Mathias Hodge*, Anthony Florita, Kirsten Orwig, Debra Lew, Michael Milligan: "A Comparison of Wind Power and Load Forecasting Error Distributions", **The World Renewable Energy Forum**, *May 13-17, 2012, Denver, CO, USA.*

87. Bri-Mathias Hodge*, Marissa Hummon, Kirsten Orwig: "Solar Ramping Distributions over Multiple Timescales and Weather Patterns", **1st International Workshop on Integration of Solar Power into Power Systems**, *October 24, 2011, Aarhus, Denmark.*

88. Kirsten Orwig, Marissa Hummon, Bri-Mathias Hodge, Debra Lew: "Solar Data Inputs for Integration and Transmission Planning Studies", **1st International Workshop on Integration of Solar Power into Power Systems**, *October 24, 2011, Aarhus, Denmark.*

89. Bri-Mathias Hodge*, Erik Ela, Michael Milligan: "The Distribution of Wind Power Forecast Errors from Operational Systems", **10th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 25-26, 2011, Aarhus, Denmark.*

90. Bri-Mathias Hodge*, Debra Lew, Michael Milligan: "The Impact of High Wind Power Penetration on Hydroelectric Unit Operations", **10th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 25-26, 2011, Aarhus, Denmark.*

91. Michael Milligan, Erik Ela, Bri-Mathias Hodge, Brendan Kirby, Debra Lew, Charlton Clark, Jennifer DeCesaro, Kevin Lynn: "Are Integration Costs and Tariffs Based on Cost-Causation?" **10th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 25-26, 2011, Aarhus, Denmark.*

92. Bri-Mathias Hodge*, Michael Milligan: "Wind Power Forecasting Errors over Multiple Timescales", **Proceedings of the IEEE Power & Energy Society General Meeting**, *July 24-29, 2011, Detroit, MI, USA.*
93. Bri-Mathias Hodge, Austin Zeiler, Duncan Brooks, Gary Blau, Joseph Pekny, Gintaras Reklaitis: "Improved Wind Power Forecasting with ARIMA Models", **Proceedings of the 21st European Symposium on Computer Aided Process Engineering**, *May 29 – June 1, 2011, Chalkidiki , Greece.*

94. Shisheng Huang, Bri-Mathias Hodge, Jingjie Xiao, Joseph Pekny, Gintaras Reklaitis: "The Effects of Electricity Storage on Large Scale Wind Integration", **Proceedings of the 21st European Symposium on Computer Aided Process Engineering**, *May 29 – June 1, 2011, Chalkidiki , Greece.*

95. Jingjie Xiao, Andrew Liu, Bri-Mathias Hodge, Joseph Pekny, Gintaras Reklaitis: "Long-Term Planning of Wind Farm Siting in the Electricity Grid", **Proceedings of the 21st European Symposium on Computer Aided Process Engineering**, *May 29 – June 1, 2011, Chalkidiki , Greece.*

96. Bri-Mathias Hodge, Shisheng Huang, Joseph Pekny, Gintaras Reklaitis: "Process Systems Engineering Perspectives on Energy Systems Analysis and Policy", **Proceedings of the Second International Symposium on Sustainable Chemical Product and Process Engineering**, *May 9-12, 2010, Hangzhou, China.*

97. Bri-Mathias Hodge, Shisheng Huang, Aviral Shukla, Joseph Pekny, Gintaras Reklaitis: "The Effects of Vehicle-to-Grid Systems on Wind Power Integration in California", **Proceedings of the 20th European Symposium on Computer Aided Process Engineering**, *June 6-9, 2010, Ischia, Italy.*

98. Shisheng Huang, Bri-Mathias Hodge, Joseph Pekny, Gintaras Reklaitis: "The Value of Battery Storage and Discharge Logic with Solar Microgeneration", **Proceedings of the 20th European Symposium on Computer Aided Process Engineering**, *June 6-9, 2010, Ischia, Italy.*

99. Shisheng Huang, Bri-Mathias Hodge, Joseph F. Pekny, Gintaras V. Reklaitis: "The Impact of PHEV Adoption on Natural Gas Demand in Electricity Generation", **Proceedings of the 2nd Annual Gas Processing Symposium**, *January 11-14, 2010, Doha, Qatar.*

100. Bri-Mathias Hodge, Joseph F. Pekny, Gintaras V. Reklaitis: "Technology Pipelines for Learning in Energy System Models", **Proceedings of the 10th International Symposium on Process Systems Engineering**, *August 16-20, 2009, Salvador, Brazil.*

101. Bri-Mathias Hodge, Joseph F. Pekny, Gintaras V. Reklaitis: "A Multi-Paradigm Energy Model for Liquid Natural Gas Analysis", **Proceedings of the 1st Annual Gas Processing Symposium**, *January 10-12, 2009, Doha, Qatar.*

102. Bri-Mathias Hodge, Selen Aydogan-Cremaschi, Gary E. Blau, Joseph F. Pekny, Gintaras V. Reklaitis: "A Prototype Agent-Based Modeling Approach For Energy System Analysis", **Proceedings of the 18th European Symposium on Computer Aided Process Engineering**, *June 1-4, 2008, Lyon, France.*

Other Publications (*Senior Author, † Student/Intern, ‡ Postdoc):

1. Brian Sergi, Michael Emmanuel, Omar Guerra, Gregory Brinkman, Daniel Steinberg, Bri-Mathias Hodge*: "Duke Energy Low Carbon Resource Integration Study", **NREL Technical Report:** NREL/TP-6A40-82431, 2022.

2. Kate Doubleday†, Andrew Parker, Faeza Hafiz†, Benjamin Irwin, Samuel Hancock, Shanti Pless, Bri-Mathias Hodge*: "Peña Station NEXT Energy District Master Plan", **NREL Technical Report:** NREL/TP-5D00-76242, 2020.

3. Reiko Matsuda-Dunn†, Michael Emmanuel‡, Erol Chartan, Bri-Mathias Hodge*, Gregory Brinkman: "Duke Energy Carbon-Free Resource Integration Study", **NREL Technical Report:** NREL/TP-5D00-74337, 2020.

4. Carlo Brancucci, Riccardo Bracho, Gregory Brinkman, Bri-Mathias Hodge: "Baja California Sur Renewable Integration Study", **NREL Technical Report:** NREL/TP-5D00-72598, 2018.

5. Richard Bryce†, Ignacio Losada Carreno†, Andrew Kumler, Bri-Mathias Hodge, Billy Roberts, Carlo Brancucci Martinez-Anido: "Annually and monthly resolved solar irradiance and atmospheric temperature data across the Hawaiian archipelago from 1998 – 2015 with interannual summary statistics", **Data in Brief**, Vol. 19, 2018**.**

6. Bryan Palmintier, Elaine Hale, Timothy Hansen, Wesley Jones, David Biagioni, Kyri Baker, Hongyu Wu, Julieta Giraldez, Harry Sorensen, Monte Lunacek, Noel Merket, Jennie Jorgenson, Bri-Mathias Hodge*: "Integrated Distribution-Transmission Analysis for Very High Penetration Solar PV", **NREL Technical Report:** NREL/TP-5D00-65550, 2016.

7. Nick Schlag, Arne Olson, Elaine Hart, Ana Mileva, Ryan Jones, Carlo Brancucci Martinez-Anido‡, Bri-Mathias Hodge*, Greg Brinkman, Anthony Florita, David Biagioni: "Western Interconnection Flexibility Assessment: Final Report", **Western Electricity Coordinating Council (WECC) Technical Report**, 2015.

8. Caroline Draxl, Bri-Mathias Hodge*, Andrew Clifton, James McCaa: "Overview and Meteorological Validation of the Wind Integration National Dataset Toolkit", **NREL Technical Report:** NREL/TP-5000-61740, 2015.

9. Bri-Mathias Hodge*, Anthony Florita, Justin Sharp, Michael Margulis, David Mcreavy: "The Value of Improved Short-Term Wind Power Forecasting", **NREL Technical Report:** NREL/TP-5D00-63175, 2015.

10. Jack King, Andrew Clifton, Bri-Mathias Hodge*: "Validation of Power Output for the WIND Toolkit", **NREL Technical Report:** NREL/TP-5D00-61714, 2014.

11. Carlo Brancucci Martinez-Anido‡, Bri-Mathias Hodge*: "Impact of Utility-Scale Distributed Wind on Transmission-Level System Operations", **NREL Technical Report:** NREL/TP-5D00-61824, 2014.

12. Andrew Mills, Audun Botterud, Jing Wu, Zhi Zhou, Bri-Mathias Hodge, Michael Heaney: "Integrating Solar PV into Utility Operations", **ANL Technical Report:** ANL/DIS-13/18, 2013.

13. Kevin Porter, Sari Fink, Michael Buckley, Jennifer Rogers, Bri-Mathias Hodge*: "A Survey of Variable Generation Integration Charges", **NREL Technical Report**: TP – 5500-57583, 2013.

14. Debra Lew, Greg Brinkman, Eduardo Ibanez, Bri-Mathias Hodge, Marissa Hummon, Anthony Florita, Michael Heaney, Greg Stark, Jack King, Nikhil Kumar, Steve Lefton, Dwight Agan, Gary Jordan, Sundar Venkataraman: "The Western Wind and Solar Integration Study Phase 2", **NREL Technical Report**: TP – 5500-55888, 2012.

15. Michael Milligan, Erik Ela, Bri-Mathias Hodge, Brendan Kirby, Debra Lew, Charlton Clark, Jennifer DeCesaro, Kevin Lynn: "Cost-Causation and Integration Cost Analysis for Variable Generation", **NREL Technical Report**: TP – 5500-51860, 2011.

16. Bri-Mathias Hodge*, Debra Lew, Michael Milligan: "The Impact of High Wind Power Penetration on Hydroelectric Unit Operations in the WWSIS", **NREL Technical Report**: TP – 5500-52251, 2011.

17. Per Jernström, Bri-Mathias Hodge, K. Tapio Westerlund: "A Comparison Between a MILP-based Decomposition Method and a Genetic Algorithm in Scheduling Applications", Report of the Process Design Systems Engineering Institute, **Åbo Akademi Technical Report**: 06-190-A, ISBN 952-121-1793-6, 2006.

Patents:

U.S. Patent No. 10,892,838 B2, "Heterogeneous Network Topology Management and Control", Patent Issued: January 12th, 2021.

Provisional Patent 63/168,636: "Curtailment Control with Statistically Optimized Topology for Utility Scale Variable Generation", Patent Filed: March 31st, 2022.

Provisional Patent Docket No: 22151.31: "Nonlinear Droop Grid-Forming Inverter Control", Provisional Patent Filed: June 9th, 2022.

Selected Invited Presentations:

"*Renewable Energy, Meteorology, and the Future Power Grid*", Americal Meteorological Society Annual Meeting, 22nd Annual Student Conference, January 2023.

"*Designing a Sustainable and Reliable Future: Simulating Next Generation Energy Systems*", University of Colorado Boulder, Department of Applied Mathematics, October 2022.

"*Challenges Toward a Carbon-Free Power System*", IEEE Middle Tennesse Section, September 2022.

"*Potential Impacts of Climate Change on Bulk Power System Planningand Operation*", Energy Systems Integration Group (ESIG), Meteorology & Market Design for Grid Services Workshop, June 2022.

"*Solar Uncertainty Management and Mitigation for Exceptional Reliability in Grid Operations (SUMMER-GO)*", Energy Systems Integration Group (ESIG), Meteorology & Market Design for Grid Services Workshop, June 2022.

"*Solar Uncertainty Management and Mitigation for Exceptional Reliability in Grid Operations (SUMMER-GO)*", U.S. Department of Energy, Solar Energy Technologies Office, Addressing Solar Data Challenges for Utilities and Power Systems Workshop, June 2022.

"*The Power System as the Foundation for Decarbonizing Other Sectors*", Universitat Politècnica de Catalunya, Center for Process and Environmental Engineering, April 2022.

"*Power System Stability: Grid-Forming Inverters, Inertia, and Damping?*", TU Delft, Faculty of Technology, Policy, and Management, April 2022.

"*Designing a Sustainable and Reliable Future: Simulating Next Generation Energy Systems*", Carnegie Mellon University, Department of Chemical Engineering, Center for Advanced Process Decision-making (CAPD) Energy Systems Seminar, November 2021.

"*Overview of Advanced Renewable Energy Forecasting*", Global Power System Transformation Consortium, Deep Dive on Advanced Renewable Energy Forecasting Techniques, September 2021.

"*Solar Uncertainty Management and Mitigation for Exceptional Reliability in Grid Operations (SUMMER-GO)*", Meteorology & Market Design for Grid Services Workshop, Energy Systems Integration Group (ESIG), June 2021.

"*Designing a Sustainable and Reliable Future: Simulating Next Generation Energy Systems*", Cornell University, Cornell Energy Day, April 2021.

"*Probabilistic Solar Power Forecasting and Dynamic Reserves*", U.S. Department of Energy Solar Energy Technologies Office Colloquium Series, April 2021.

"*Ensuring the Resilience of the U.S. Electric Grid*", InfraGard, March 2021.

"*Distributed Energy Resources 2.0: New Challenges and Solutions*", IEEE Power & Energy Society General Meeting: New Trends with Integration of Distributed Energy Resources Panel, Montreal, CA, August 2020.

"*A Modified 118-bus Test System with Increased Renewable Penetration*", IEEE Power & Energy Society General Meeting: Test Systems for System Operations, Unit Commitment, System Planning with High Renewable Energy Penetration Panel, Montreal, CA, August 2020.

"*Incorporating Climate Uncertainty into Future Energy Systems*", Next-Generation Challenges in Energy-Climate Modelling Workshop, University of Reading, UK, June 2020.

"*Designing a Sustainable and Reliable Future: Simulating Next Generation Energy Systems*", Danish Technical University, Department of Applied Mathematics and Computer Science, June 2019.

"*Designing a Sustainable and Reliable Future: Simulating Next Generation Energy Systems*", University of California Berkeley, Energy and Resources Group Colloquium, November 2018.

"*The WIND Toolkit: A National Dataset for Wind Integration Studies*", 4th Conference on Stochastic Weather Generators (SWGEN 2018), October 2018.

"*Distribution Integration Research*", Colorado Public Utilities Commission, Commission's Review of its Rules Governing ERP, RES and Enabling New Technology Integration – Distribution System Planning, April 2018.

"*Renewable Energy Integration: from Resource Data to Power System Impacts*", Ascend Analytics 2017 Summit on Changing Market Dynamics for Portfolio Management and Planning Decisions, October 2017.

"*Solar Power Forecasting and Power System Impacts*", Yuannan Province Electric Power Research Institute, Southern China Power Grid, May 2017.

"*Renewable Energy Integration: from Resource Data to Solar Power Forecasting and Power System Impacts*", North China Electric Power University, May 2017.

"*Next Generation Power System Test Cases*", Colorado School of Mines, Energy Seminar Series, April 2017.

"*The Value of Wind and Solar Power Forecasting Improvements at Multiple Timescales*", Electric Power Research Institute (EPRI) – Artificial Neural Network Short-Term Load Forecaster Users' Group Meeting, November 2016.

"*Renewable Energy Integration: from Resource Data to Power System Impacts*", Cranfield University, School of Water, Energy and Environment, July 2016.

"*The Modern Grid with High Penetration of Renewables*", Western Area Power Administration (WAPA) Resource Planning for Power Systems, April 2016.

"*The Wind Integration National Dataset (WIND) and Solar Integration National Dataset (SIND) Toolkits*", Conference on Data Analysis (CoDA) 2016, March 2016.

"*Solar and Wind Resources Review*", Colorado Public Utilities Commission, Commissioners' Information Meeting – Future Issues for Renewable Energy and Transmission, February 2016.

"*Setting the Scene: Forecasting 101*", USAID Regional Workshop for Asia on Advancing the Use of Wind and Solar Forecasting to Facilitate the Integration of Variable Renewable Energy to the Grid, Bangkok, Thailand, February 2016.

"*Data Requirements for Forecasting*", USAID Regional Workshop for Asia on Advancing the Use of Wind and Solar Forecasting to Facilitate the Integration of Variable Renewable Energy to the Grid, Bangkok, Thailand, February 2016.

"*Renewable Energy Integration: from Resource Assessment to Power System Impacts*", Colorado School of Mines, Department of Mechanical Engineering, February 2016.

"*The Value of Forecasting*", USAID Regional Workshop for Latin America and the Caribean on Advancing the Use of Wind and Solar Forecasting to Facilitate the Integration of Variable Renewable Energy to the Grid, Mexico City, Mexico, January 2016.

"*Forecasting Requirements for System Operations*", USAID Regional Workshop for Latin America and the Caribean on Advancing the Use of Wind and Solar Forecasting to Facilitate the Integration of Variable Renewable Energy to the Grid, Mexico City, Mexico, January 2016.

"Renewables Integration Research and Development", Western Electricity Coordinating Council (WECC) Dispatch Chief's Fall Meeting,October 2015.

"Regulatory & Policy Role: Renewable Energy Grid Integration International Experience & Lessons for India", Forum of Indian Regulators, June 2015.

"The Value of Very Short-Term Wind Power Forecasting in California in the Context of an Overall Forecasting Value Framework", Utility Variable Generation Integration Group Forecasting Workshop, February 2014.

"The State-of-the-Art in Wind and Solar Power Forecasting", Eskom and the 21st Century Power Partnership Workshop on Integrating Variable Renewable Energy into Transmission and Distribution Networks, Eskom (South African State Utility), December 2013.

"Renewable Energy: Grid Integration Panel", AMS 2013 Summer Community Meeting, American Meteorological Society, August 2013

"*Best Practices in Solar Interconnection and Operations*", ERCOT Photovoltaic/Storage Interconnection Workshop, Electric Reliability Council of Texas, October 2012.

"*Multi-Paradigm Energy Systems Modeling*", Purdue Energy Systems Workshop, Energy Center, Purdue University, September 2011.

"*Wind Forecasting Error Distributions and Implications*", Electricity Industry Center, Department of Engineering and Public Policy, Carnegie Mellon University, May 2011.

Selected Conference Presentations:

Bri-Mathias Hodge: "Challenges and Mitigation Options in Stability for Future Power Systems", **Wind Energy Science Conference 2021**, *May 25th, 2021, Hannover, Germany.*

Tarek Elgindy, Nicolas Gensollen, Bryan Palmintier, Carlos Mateo Domingo, Tomas Gomez San Roman, Venkat Krishnan, Bri-Mathias Hodge: "Smart-DS: Large-scale, synthetic distribution test systems for evaluating next-generation distributed grid algorithms and technologies", **2018 IEEE Power and Energy Society General Meeting**, *August 9th, 2018, Portland, OR.*

S.M. Shafiul Alam, Jianhua Zhang, Adarsh Hasandka, Bri-Mathias Hodge: "An Opportunistic Hybrid Communications Systems for Distributed PV Coordination", **2018 IEEE Power and Energy Society Transmission & Distribution Conference**, *April 18th, 2018, Denver, CO.*

S.M. Shafiul Alam, Tarek Elgindy, Anthony Florita, Bri-Mathias Hodge: "An Opportunistic Hybrid Communications System for Distributed PV Coordination and Control", **2016 AIChE Annual Meeting**, *November 17th, 2016, San Francisco, CA.*

Bri-Mathias Hodge: "The Wind Integration National Dataset (WIND) and Solar Integration National Dataset (SIND) Toolkits", **Conference on Data Analysis (CoDA) 2016**, *March 2nd, 2016, Sante Fe, NM.*

Andrew Weekley, Anthony Lopez, Marissa Hummon, Bri-Mathias Hodge: "The Solar Integration National Dataset (SIND) Toolkit", **2015 AIChE Annual Meeting**, *November 9th, 2015, Salt Lake City, UT.*

Bri-Mathias Hodge, Caroline Draxl, Dan Getman, Wesley Jones, Jim McCaa: "The Wind Integration National Dataset (WIND) Toolkit: Wind Power Forecasts and Production Time Series", **2014 AIChE Annual Meeting**, *November 17th, 2014, Atlanta, GA.*

Bri-Mathias Hodge, Elaine Hale, Bryan Palmintier, Jin Wei, Julieta Giraldez, Wesley Jones, David Biagioni, Roisin Mossop: "Cyber-Physical-Energy Systems Testbed: A Distributed Solar Power Case Study", **2014 AIChE Annual Meeting**, *November 19th, 2014, Atlanta, GA.*

Jie Zhang, Bri-Mathias Hodge, Anthony Florita, Siyuan Lu, Hendrik Hamann, Venkat Banunarayanan: "Metrics Development for Evaluating the Accuracy of Solar Power Forecasting", **American Meteorological Society 94th Annual Meeting**, *February 3rd, 2014, Atlanta, GA.*

Caroline Draxl, Dan Getman, Wesley Jones, Kirsten Orwig, Jim McCaa, Padriac Fowler, Eric Grimit, Bri-Mathias Hodge: "The Wind Integration National Dataset (WIND) Toolkit", **American Meteorological Society 94th Annual Meeting**, *February 3rd, 2014, Atlanta, GA.*

Jie Zhang, Anthony Florita, Bri-Mathias Hodge: "Joint Probability and Correlation Analysis of Wind and Solar Power Forecast Errors in the Western Interconnection", **2013 AIChE Annual Meeting**, *November 7th, 2013, San Francisco, CA.*

Nicholas Steckler, Anthony Florita, Jie Zhang, Bri-Mathias Hodge: "Analysis and Synthesis of Load Forecasting Data for Renewable Integration Studies", **12th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 22-24, 2013, London, UK.*

Jie Zhang, Bri-Mathias Hodge, Anthony Florita, Siyuan Lu, Hendrik F. Hamann, Venkat Banunarayanan: "Metrics for Evaluating the Accuracy of Solar Power Forecasting", **3rd International Workshop on Integration of Solar Power into Power Systems**, *October 21-22, 2013, London, UK.*

Bri-Mathias Hodge, Debra Lew, Michael Milligan: "Short-Term Load Forecasting Error Distributions and Implications for Renewable Integration Studies", **2013 IEEE Fifth Annual Green Technologies Conference**, *April 4-5, 2013, Denver, CO, USA.*

Bri-Mathias Hodge, "The Value of Variable Generation Forecasting at Multiple Time Scales", **Utility Variable Generation Integration Group Workshop on Variable Generation Forecasting Applications to Utility Planning and Operations**, *February 26th, 2013, Salt Lake City, UT, USA.*

Bri-Mathias Hodge, Hannele Holttinen, Samueli Sillanpää, Emilio Gómez-Lázaro, Richard Scharff, Lennart Söder, Xiaoli Larsén, Gregor Giebel, Damian Flynn, Debra Lew, Michael Milligan, Jan Dobschinski: "Wind Power Forecasting Error Distributions: An International Comparison", **The 11th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *November 13, 2012, Lisbon, Portugal.*

Bri-Mathias Hodge, Sandra Shedd, Anthony Florita, and Kirsten Orwig: "Examining the Variability of Load, Wind, and Solar Power in the Regulation Timeframe", **2012 AIChE Annual Meeting**, *October 31, 2012, Pittsburgh, PA, USA.*

Bri-Mathias Hodge, Anthony Florita: "Characterizing and Modeling Wind Power Forecast Errors from Operational System for use in Wind Integration Planning Studies", **Modeling, Simulation and Optimization for the 21st Century Electric Power Grid**, *October 23, 2012, Lake Geneva, WI, USA.*

Bri-Mathias Hodge, Anthony Florita: "Characterizing and Modeling Wind Power Forecast Errors from Operational System for use in Wind Integration Planning Studies", **INFORMS 2012 Annual Meeting**, *October 17, 2012, Phoenix, AZ, USA.*

Bri-Mathias Hodge, Kirsten Orwig, Michael Milligan: "Examining Information Entropy Approaches as Wind Power Forecasting Performance Metrics", **The 12th International Conference on Probabilistic Methods Applied to Power Systems**, *June 12, 2012, Istanbul, Turkey.*

Bri-Mathias Hodge, Anthony Florita, Kirsten Orwig, Debra Lew, Michael Milligan: "A Comparison of Wind Power and Load Forecasting Error Distributions", **The World Renewable Energy Forum**, *May 15, 2012, Denver, CO, USA.*

Bri-Mathias Hodge, Erik Ela, Michael Milligan: "The Distribution of Wind Power Forecasting Errors from Operational Systems", **Utility Variable Generation Integration Group Workshop on Variable Generation Forecasting Applications to Utility Planning and Operations**, *February 8th, 2012, Tucson, AZ, USA.*

Bri-Mathias Hodge, Marissa Hummon, Kirsten Orwig: "Solar Ramping Distributions over Multiple Timescales and Weather Patterns", **1st International Workshop on Integration of Solar Power into Power Systems**, *October 24th, 2011, Aarhus, Denmark.*

Bri-Mathias Hodge, Erik Ela, Michael Milligan: "The Distribution of Wind Power Forecast Errors from Operational Systems", **10th International Workshop on Large-Scale Integration of Wind Power into Power Systems**, *October 25th, 2011, Aarhus, Denmark.*

Bri-Mathias Hodge, Erik Ela, Michael Milligan: "Stochastic Programming and Uncertainty Management in Electricity System Operation", **2011 AIChE Annual Meeting**, *October 19th, 2011, Minneapolis, MN, USA.*

Bri-Mathias Hodge, Michael Milligan: "Wind Power Forecasting Error Distributions over Multiple Timescales", **2011 IEEE Power & Energy Society General Meeting**, *July 27th, 2011, Detroit, MI, USA.*

Bri-Mathias Hodge, Shisheng Huang, Aviral Shukla, Joseph Pekny, Venkat Venkatasubramanian, Gintaras Reklaitis: "The Effects of Vehicle-to-Grid Systems on Wind Power Integration in California", **The 20th European Symposium on Computer Aided Process Engineering**, *June 8th, 2010, Ischia, Italy.*

Bri-Mathias Hodge, Selen Aydogan-Cremaschi, Gary E. Blau, Joseph F. Pekny, Gintaras V. Reklaitis: "A Prototype Agent-Based Modeling Approach For Energy System Analysis", **The 18th European Symposium on Computer Aided Process Engineering**, *June 3rd, 2008, Lyon, France.*

Bri-Mathias Hodge, Selen Aydogan-Cremaschi, Gary E. Blau, Joseph F. Pekny, Gintaras V. Reklaitis: "A Prototype Agent-Based Modeling Approach For Energy System Analysis", **2007 AIChE Annual Meeting**, *November 8th, 2007, Salt Lake City, Utah.*

Teaching Experience:

University of Colorado Boulder – Department of Electrical, Computer and Energy Engineering

ECEN 2250 – Introduction to Circuits and Electronics *Fall 2018, Spring 2023*

- Designed and conducted lectures
- Designed and conducted studio sessions focused on engineering design

ECEN 5427 – Power Systems Planning and Operations *Spring 2023*

- Designed and conducted lectures
- Supervised and advised project teams
- Co-taught with Marija Markovic and Rozhin Eskandarpour

ECEN 5407 – Renewable Energy and the Future Power Grid *Fall 2016, 2017, 2019, 2020, 2021, 2022*

- Designed and conducted lectures
- Supervised and advised design project teams

ECEN 2310 – Programming with Mathematical Software *Spring 2020*

- Designed and conducted lectures
- Supervised and advised projects

Colorado School of Mines – Department of Chemical and Biological Engineering

Adjunct Faculty – CHEN 402 – Chemical Engineering Design *Spring 2014*

- Designed and conducted lectures
- Supervised and advised design project teams

Purdue University – School of Chemical Engineering

Teaching Assistant - CHE 450 - Design and Analysis of Processing Systems *Spring 2007, 2009*

- Designed and supervised computer laboratory sessions
- Formulated design projects
- Designed and conducted lectures

Åbo Akademi, Process Design Laboratory

Lecturer – Basics in Process Design *Fall 2005*

- Designed and conducted lectures and recitation sessions
- Created homework sets and solutions

Mentoring Experience:

University of Colorado Boulder – Department of Electrical, Computer & Energy Engineering

Ph.D. Students Advised

- Katharine Doubleday *Ph.D. Summer 2021*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Dissertation: *"Development and Application of Probabilistic Solar Power Forecasts for the Day-Ahead Unit Commitment"*
- Richard Wallace Kenyon *Ph.D. Summer 2022*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Dissertation: *"The Renewables Driven Intersection of Power Systems and Power Electronics: Dynamics, Simulation, and Novel Frequency Control"*
- Marija Marković *Spring 2019 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Advanced Distribution System Planning with Sustainable Energy Technologies"*
- Matthew Bossart *Fall 2019 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Power System Stability with Power Electronic Devices"*
- Anthony Sauter *Spring 2020 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Co-Simulation Approaches for Understanding Wireless Electric Vehicle Impacts"*
- Megan Rose *Fall 2020 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"A Framework for Preventing and Recovering from Cascading Failure Events for Space-Based DC Power Systems"*
- Hussain Almajed (Co-Advised with Wilson Smith) *Fall 2021 – Present*
  - Ph.D. Student, Department of Chemical & Biological Engineering
  - Ph.D. Topic: *"Integration of Carbon Capture Technologies with Carbon Dioxide Electrolysis"*
- Marena Trujillo *Fall 2021 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Power System Stability – Opportunities for Seasonal Storage Technologies"*
- Fiona Majeau *Fall 2022 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Decarbonizing the Chemical Sector through Electricity"*
- Ramanathan Thiagarajan *Fall 2022 – Present*
  - Ph.D. Student, Department of Electrical, Computer & Energy Engineering
  - Ph.D. Topic: *"Grid-Forming Inverters in Future Power System Stability"*

M.S. (Thesis) Students Advised

- Anne Hamilton *Graduated Spring 2022*
  - M.S. Student, Department of Electrical, Computer & Energy Engineering
  - M.S. Thesis: *"Optimizing Electrified Chemical Process Scheduling with Future Wholesale Electricity Pricing"*
- Simon Julien *Graduated Spring 2022*
  - M.S. Student, Department of Applied Mathematics
  - M.S. Thesis: *"Applying Dynamic Modeling, Simulation, and Advanced Controls to Improve State-of-the-At Smart Inverter Technologies for Variable Renewable Power Systems"*
- Jackson Curry *Graduated Spring 2022*
  - M.S. Student, Department of Applied Mathematics
  - M.S. Thesis: *"Optimizing Dynamic EV Wireless Charging Systems to Minimize Distribution Grid Stress"*
- Muhy Eddin Za'ter *Fall 2021 – Present*
  - M.S. Student, Department of Electrical, Computer & Energy Engineering
  - M.S. Thesis Topic: *"Accelerating Scientific Machine Learning Methods in Power System Stability"*

- Anne Barlas *Fall 2022 – Present*
  - M.S. Student, Department of Electrical, Computer & Energy Engineering
  - M.S. Thesis Topic: *"Decarbonizing the Final 10% of the Electric Grid"*
- Haley Ross *Spring 2023 – Present*
  - M.S. Student, Department of Electrical, Computer & Energy Engineering
  - M.S. Thesis Topic: *"Current-Limiting Behavior in Invertes: Implications for Power Systems Dynamics"*
- Pradyumna Rao *Spring 2023 – Present*
  - M.S. Student, Department of Mechanical Engineering
  - M.S. Thesis Topic: *"Grid-Integration of Small Modular Nuclear Reactors"*
- Remi Akinwonmi *Spring 2023 – Present*
  - M.S. Student, Department of Mechanical Engineering
  - M.S. Thesis Topic: *"Stochastic Programming Approaches for Seasonal Storage Utilization"*

Undergraduate and High School Students Advised

- Mason Huyge *Spring 2019, Fall 2019*
  - B.Sc. Student, Department of Electrical, Computer & Energy Engineering
- Natasha Wischmeyer *Spring 2019*
  - B.Sc. Student, Department of Electrical, Computer & Energy Engineering
- Simon Julien *Spring '19 – Summer '21*
  - B.Sc./M.Sc. Student, Department of Applied Mathematics and Engineering Physics
- Jackson Curry *Spring – Summer 2021*
  - B.Sc./M.Sc. Student, Department of Applied Mathematics
- Kai Keller *Summer 2022*
  - Boulder High School Student – *"Wireless EV Charging Implications for Power Systems"*
- Suhani Dangre *Summer 2022*
  - Montain Vista High School Student – *"Wireless EV Charging Implications for Power Systems"*

Postdoctoral Researchers and Research Associates Mentored

- Amirhossein Sajadi *Jan. 2020 – Aug. 2021*
  - Ph.D. Case Western Reserve University – Electrical Engineering and Computer Science
  - Projects: *Low-inertia power grids, power system control and stability*
- Ana Somoza-Tornos (Co-advised with Wilson Smith) *June 2020 – June 2022*
  - Ph.D. Technical University of Catalonia (UPC) – Chemical Engineering
  - Projects: *Power-to-X, tecno-economic analysis of electrolytic carbon production*
- Burcin Cakir Erdener *July 2020 – May 2022*
  - Ph.D. Gazi University – Industrial Engineering
  - Projects: *Integrated power and natural gas systems, probabilistic forecasting*

Technical University of Eindhoven – Department of Electrical Engineering

Co-Promotor

- Iris van Beuzekom (co-advised with Han Slootweg – TU/E) *Graduated Dec. 2022*
  - Ph.D. Student, Department of Electrical Engineering
  - Ph.D Topic: *"Integrated Natural Gas and Power Systems Planning"*

National Renewable Energy Laboratory – Power System Design & Studies Group

Postdoctoral Researchers Mentored

- Jie Zhang *Nov. 2012 – Nov. 2014*
  - Ph.D. Rensselaer Polytechnic Institute – Mechanical Engineering
  - Projects: *Solar power forecasting, wind power forecasting, wind resource assessment*
  - Current Position: Assistant Professor, University of Texas at Dallas – Mechanical Engineering
- Alicia Allen *Mar. 2013 – Sept. 2014*
  - Ph.D. University of Texas Austin – Electrical Engineering
  - Project: *Impacts of utility-scale wind power on distribution systems*
- Carlo Brancucci Martinez-Anido *Dec. 2013 – Dec. 2014*

  - Ph.D. Technical University of Delft – Technology, Policy, & Management
  - Projects: *Transmission systems modeling, unit commitment and economic dispatch*
- Giulia Gallo (co-advised with Michael Milligan - NREL) *April 2014 -April 2016*
  - Ph.D. University of Genoa –Biophysical & Electronic Engineering
  - NREL Director's Fellowship – *Future electricity markets*
- Jin Wei Kocsis *April 2014 – July 2014*
  - Ph.D. University of Toronto – Electrical & Computer Engineering
  - Project: *Cyber-physical energy systems*
  - Current Position: Assistant Professor, University of Akron - Electrical & Computer Engineering
- Qin Wang *Feb. 2015 – Dec. 2016*
  - Ph.D. Iowa State University – Electrical & Computer Engineering
  - Project: *The value of wind power forecasting improvements*
- S M Shafiul Alam *February '16 – Sept. '18*
  - Ph.D. Kansas State University – Electrical & Computer Engineering
  - Project: *Distribution State Estimation*
- Jianhua Zhang *Aug. '16 – February '19*
  - Ph.D. North Carolina State University – Electrical & Computer Engineering
  - Project: *Communications systems design and simulation for distributed PV coordination*
  - Current Position: Assistant Professor, Clarkson University – Electrical & Computer Engineering
- Omar Guerra Fernandez *May 2017 – May 2020*
  - Ph.D. Purdue University –School of Chemical Engineering
  - Project: *Combined hydrogen and power systems for renewables integration*
- Kwami Sedzro *March 2018 – Aug. '20*
  - Ph.D. Lehigh University –Department of Electrical and Computer Engineering
  - Project: *Ancillary Services from Wind Power*
- Wenqi Flora Zhang *June 2020 - Present*
  - Ph.D. University of Colorado Boulder – Department of Applied Mathematics
  - NREL Director's Fellowship – *Integrated Wind, Solar, and Load Forecasting*
- Cong Feng *June 2020 - Present*
  - Ph.D. University of Texas - Dallas – Department of Mechanical Engineering
  - Project: *Spatio-Temporal Probabilistic Forecasting*

Students Mentored

- David Luke Oates *Summer 2011*
  - Ph.D. Student, Carnegie Mellon University, Department of Engineering and Public Policy
  - Project: *"Emissions Implications of Coal Cycling in Systems with Large Wind Power Penetration"*
- Sandra Shedd *Summer 2012*
  - DOE Science Undergraduate Laboratory Internship (SULI), Williams College
  - Project: *"Examining the Variability of Wind Power, Solar Power, and Load in the Regulation Timeframe"*
- Nicholas Steckler *Summer 2013*
  - DOE Science Undergraduate Laboratory Internship (SULI), University of Washington
  - Project: *"Statistical Properties of Load Forecasting Errors for Renewable Integration Studies"*
- Robert Bantz *Spring 2014*
  - DOE Science Undergraduate Laboratory Internship (SULI), University of Central Florida
  - Project: *"Bayesian Network Analysis of Load Forecasting Errors"*
- Jari Miettinen *March – October 2014*
  - Ph.D. Student, Lappenranta University of Technology, Department of Electrical Engineering
  - Project: *"Wind Power Forecasting Errors"*
- Samuel Putnam *Summer 2014*
  - DOE Science Undergraduate Laboratory Internship (SULI), University of Vermont
  - Project: *"The Value of Wind Power Forecasting Improvements"*
- Marc Hüsch *Summer 2014*
  - DAAD RISE Program, Technical University of Dortmund
  - Project: *"Clustering of Wind Power and Forecasting Regimes"*

- Mingjian Cui *Sept. '14 – Sept. '15*
  - Ph.D. Student, Wuhan University, School of Electrical Engineering
  - Project: *"Wind and Solar Power Ramp Forecasting"*
- Jesus Nieto-Martin *April – October 2015*
  - Ph.D. Student, Cranfield University
  - Project: *"Simulation-Optimization for Design of Power System Operations"*
- Wan Yin (Wendy) Cheung *Spring & Summer 2015*
  - DOE Science Undergraduate Laboratory Internship (SULI), University of California, San Diego
  - Project: *"Uncertainty Quantification and Propagation in Irradiance and Solar Power"*
- Hanchen Xu *Summer 2015*
  - Ph.D. Student, UIUC, Department of Electrical & Computer Engineering
  - Project: *"Power System Flexibility Options for the Western Interconnection"*
- Rishabh Jain *Summer 2015*
  - Ph.D. Student, North Carolina State, Department of Electrical & Computer Engineering
  - Project: *"Power System Reserves in Renewable Integration Studies"*
- Tarek Elgindy *August '15 – May '16*
  - M.S. Student, Carnegie Mellon University, Operations Research
  - Project: *"Ultra-Short-Term Solar Power Forecasting"*
- Ivonne Pena *Summer - Fall 2015*
  - Ph.D., Carnegie Mellon University, Engineering & Public Policy
  - Project: *"A New IEEE 118-Bus System for Renewables Integration"*
- Benjamin Botor *Fall 2015*
  - DAAD RISE Program, University of Duisburg-Essen
  - Project: *"Modeling of Bulk Power System Flexibility Options"*
- Joshua Rosenkranz *Fall 2015*
  - DAAD RISE Program, University of Kiel
  - Project: *"Multi-hour Ramping Constraints due to Solar Energy Integration"*
- Brandon Reyes *Spring 2016*
  - B.Sc. Student, Applied Mathematics, Colorado School of Mines
  - Project: *"Spatio-Temporal Forecasting of Solar Power"*
- Merce Labordena Mir *March – September 2016*
  - Ph.D. Student, ETH – Zürich – Climate Policy Group
  - Project: *"Co-locating Concentrating Solar Thermal and Wind Power Plants"*
- Lyle Collins *July - December 2016*
  - Ph.D. Student, University of Newcastle/CSIRO
  - Project: *"Game Theoretic Approaches to Demand Response"*
- Cristiana Lopes Lara *July – August 2016*
  - Ph.D. Student, Carnegie Mellon University – Chemical Engineering
  - Project: *"Capacity Expansion Modeling with High Renewables"*
- Todd Zhen *July – December 2016*
  - Ph.D. Student, Purdue University – Chemical Engineering
  - Project: *"Facility Location Problem Applied to Communications System Planning for Distributed Solar PV"*
- Gyujung Cho *August '16 – Feb. '17*
  - Ph.D. Student, Sungkyunkwan University – Power System Innovation Laboratory
  - Project: *"Distribution Systems Modeling with High PV Penetration"*
- Min-Sung Kim *August '16 – Feb. '17*
  - M.S. Student, Sungkyunkwan University – Power System Innovation Laboratory
  - Project: *"Distribution Systems Modeling with High PV Penetration"*
- Ji-Soo Kim *August '16 – Feb. '17*
  - M.S. Student, Sungkyunkwan University – Power System Innovation Laboratory
  - Project: *"Distribution Systems Modeling with High PV Penetration"*
- Ershun Du *Sept. '16 – Sept. '17*
  - Ph.D. Student, Tsinghua University – Power System Innovation Laboratory
  - Project: *"Integration of Concentrating Solar Power Plants"*

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- Adarsh Hasandhka *Jan. '17 – August '17*
  - M.S. Student, University of Colorado Boulder, Department of Electrical, Computer & Energy Engineering
  - Project: *"Communication System Simulation for Distributed PV Coordination and Control"*
- Bing Huang *May '17 – August '17*
  - Ph.D. Student, University of Texas - Austin, Department of Electrical & Computer Engineering
  - Project: *"Flexible Wind Power Ramping Products"*
- Katharine Doubleday *June '17 – August '17*
  - Ph.D. Student, University of Colorado Boulder, Department of Electrical, Computer & Energy Engineering
  - Project: *"Multi-energy System District Planning and Modeling"*
- Mohammed Masum Siraj Khan *June '17 – Present*
  - M.S. Student, Florida State University, Department of Electrical & Computer Engineering
  - Project: *"Hardware-in-the-loop Testing of Communications System Design"*
- Dustin Michels *June '17 – August '17*
  - B.Sc. Student, Carleton College, Computer Science Department
  - Project: *"Flexible Reserves in Unit Commitment and Economic Dispatch Models"*
- Naeem Turner-Bandele *June '17 – August '17*
  - B.Sc. Student, Santa Clara University, Department of Electrical Engineering
  - Project: *"Impact of Residential PV Policies on Battery Sizing"*
- Jose Daniel Lara *June '17 – August '17*
  - Ph.D. Student, University of California Berkeley, Energy & Resources Group
  - Project: *"Economic Dispatch of Solar Power with Probabilistic Forecasting"*
- Richard Bryce *June '17 – Present*
  - Ph.D. Student, University of Massachusets, Department of Mechanical and Industrial Engineering
  - Project: *"Inter-annual Variability of Wind and Solar Resources" and "Microgrid Simulation"*
- Iris van Beuzekom *July '17 – February '18*
  - Ph.D. Student, TU Eindhoven, Department of Electrical Engineering
  - Project: *"Integrated Natural Gas and Power Systems Planning"*
- Javier Antoñanzas Torres *Sept. '17 – Feb. '17*
  - Ph.D. Student, Universidad de la Rioja, Department of Electrical Engineering
  - Project: *"Probabilistic Solar Power Forecasting and their Usage in Power System Operations"*
- Dominik Dominkovic *January '18 –April '18*
  - Ph.D. Student, Technical University of Denmark, , Department of Energy
  - Project: *"Modeling Energy Supply of Future Smart Cities"*
- Tessa Rider *June '18 – Aug. '18*
  - Ph.D. Student, Colorado School of Mines, Department of Mechanical Engineering
  - Project: *"Examining the Complementarity of Renewables and Small Modular Nuclear Reactors"*
- Reiko Matsuda-Dunn *October '19 – Present*
  - B.Sc.. Student, University of Colorado Boulder, Department of Electrical, Computer & Energy Engineering
  - Project: *"Renewable Integration Studies for Island Power Systems"*
- Simon Julien *Summer 2019*
  - B.Sc.. Student, University of Colorado Boulder, Department of Applied Mathematics
  - Project: *"Impacts of Power Electronic Loads on Power System Stability"*
- Vanessa van Syoc-Hernandez *Summer 2019*
  - B.Sc.. Student, University of Colorado Boulder, Department of Electrical, Computer & Energy Engineering
  - Project: *"Probabilistic Solar Power Forecasting with Bayesian Model Averaging"*
- Simon Julien *Summer 2020*
  - B.Sc.. Student, University of Colorado Boulder, Department of Applied Mathematics
  - Project: *"Operation of Solar PV Plants Under Proactive Curtailment"*
- Vanessa van Syoc-Hernandez *Summer 2020*

  - B.Sc.. Student, University of Colorado Boulder, Department of Electrical, Computer & Energy Engineering
  - Project: *"Probabilistic Solar Power Forecasting"*
- Marena Trujillo *Summer 2021*
  - B.Sc.. Student, Loyola Marymount University, Electrical and Computer Engineering Department
  - Project: *"Stationary Energy Storage Research Needs"*
- Jeffrey Sward *Summer 2021*
  - Ph.D.. Student, Cornell University, Sibley School of Mechanical and Aerospace Engineering
  - Project: *"Quantile Changes in Probabilistic Solar Power Forecasting"*
- Mason Sake *Summer 2021*
  - B.Sc. Student, Auburn University, Mechanical Engineering and Physics
  - Project: *"Power System Dynamics with High Levels of Inverters"*

Visiting Postdocs

- Jethro Browell *May – June 2017*
  - Postdoctoral Researcher, University of Strathclyde, Electronic and Electrical Engineering

Visiting Faculty Members

- Jun-Hyung Ryu *August '15 – July '16*
  - Associate Professor, Dongguk University, Department of Nuclear & Energy Systems

Student Committee Member

- Marc Hüsch *Graduated Spring 2015*
  - Technical University of Dortmund – Faculty of Statistics
  - B.Sc. Thesis: *"Clustering of Wind Power"*
  - B.Sc. Thesis Co-Advisor: Joachim Kunert
- David Luke Oates *Graduated Spring 2015*
  - Carnegie Mellon University – Department of Engineering and Public Policy
  - Ph.D. Thesis: *"Low Carbon Policy and Technology in the Power Sector: Evaluating Economic and Environmental Effects"*
  - Ph.D. Advisor: Paulina Jaramillo
- Michael Craig *Graduated Fall 2017*
  - Carnegie Mellon University – Department of Engineering and Public Policy
  - Ph.D. Thesis: *"Economic and Environmental Costs, Benefits, and Trade-Offs of Low-Carbon Technologies in the Electric Power Sector"*
  - Ph.D. Advisor: Paulina Jaramillo
- Emily Ruby *Graduated Fall 2018*
  - University of Colorado Boulder – Department of Environmental Science
  - M.S. Thesis: *"Analysis of California's Formative Energy Storage Policy"*
  - M.S. Advisors: Max Boykoff and Susan Tegen
- Giulia De Zotti *Graduated Summer 2019*
  - Danish Technical University – Department of Applied Mathematics and Computer Science
  - Ph.D. Thesis: *"Leveraging Consumers' Flexibility for the Provision of Ancillary Services"*
  - Ph.D. Advisors: Niels Kjølstad Poulsen and Henrik Madsen
- Joseph Gardner *Graduated Summer 2019*
  - Colorado School of Mines – Department of Chemical and Biological Engineering
  - Ph.D Topic: *"Multi-Scale Modeling of Photosynthetic Organisms"*
  - Ph.D. Advisor: Nanette Boyle
- Robert Cruickshank III *Graduated Summer 2019*
  - University of Colorado Boulder – Department of Civil, Environmental and Architectural Engineering
  - Ph.D. Thesis: *"Estimating the Spatiotemporal Value of Jointly Optimized Electric Power Generation and Residential Electrical Use"*
  - Ph.D. Advisor: Gregor Henze

- Wenqi Zhang *Graduated Spring 2020*
  - University of Colorado Boulder – Department of Applied Mathematics
  - Ph.D. Thesis: *"Statistical Approaches to Assess High Frequency Variability of Solar Irradiance"*
  - Ph.D. Advisor: William Kleiber
- Gianni Goretti *Graduated Summer 2020*
  - Technological University Dublin – School of Civil and Structural Engineering
  - Ph.D. Thesis: *"Forecasting the Short-term Value of Wind Power for Risk-aware Bidding Strategies in Single-Imbalance Price Electricity Markets"*
  - Ph.D. Advisor: Aidan Duffy
- Sean Ericson *Graduated Spring 2021*
  - University of Colorado Boulder – Department of Economics
  - Ph.D. Thesis: *"Picking Winners: When are technology-specific policies optimal?"*
  - Ph.D. Advisor: Daniel Kaffine
- Amanda Lococo *Graduated Fall 2021*
  - University of Colorado Boulder – Department of Applied Mathematics
  - M.S. Thesis: *"A New Approach to Assess Space-Time Variability in Solar Irradiances"*
  - M.S. Advisor: William Kleiber
- Jose Daniel Lara *Graduated Spring 2022*
  - University of California Berkeley – Energy and Resources Group
  - Ph.D. Thesis: *"Managing Uncertainty in Renewable Energy Integration"*
  - Ph.D. Advisor: Duncan Callaway
- Alexander Metcalf *Graduated Spring 2022*
  - Colorado School of Mines – Department of Chemical and Biological Engineering
  - Ph.D Topic: *"Illuminating Circadian Algal Metabolism: A Multiscale Multiparadigm Modeling Approach"*
  - Ph.D. Advisor: Nanette Boyle
- James Hurtt *Expected December 2023*
  - University of Colorado Boulder – Department of Electrical, Computer & Energy Engineering
  - Ph.D Topic: *"A Techno-economic Evaluation of Hybrid Energy Systems Considering Practical Limitations"*
  - Ph.D. Advisor: Kyri Baker
- David Rosencrans *Expected Spring 2024*
  - University of Colorado Boulder – Department of Atmospheric and Oceanic Sciences
  - Ph.D Topic: *"A Techno-economic Evaluation of Hybrid Energy Systems Considering Practical Limitations"*
  - Ph.D. Advisor: Julie Lundquist
- Caitlin Berry *Expected Spring 2024*
  - University of Colorado Boulder – Department of Applied Mathematics
  - Ph.D. Thesis: *"Levy Processes and Applications"*
  - Ph.D. Advisor: William Kleiber

Purdue University – School of Chemical Engineering
Graduate Research Mentor

- Austin Zeiler – "Wind Power Forecasting with ARIMA Models" *Summer 2010*
- Duncan Brooks – "Wind Energy Market Characterization and Forecasting" *Fall 2009/Spring 2010*
- Adrienne Heinzelman – "Batteries: Large-scale Energy Storage Applications" *Fall 2009/Spring 2010*
- Eddie McLaughlin – "Mobile Batteries for EVs" *Fall 2009*
- Zachary Singer – "Solar Photovoltaics: Technological Prospects" *Fall 2009*
- Sam Steffen – "Solar Thermal Power: Market Prospects" *Fall 2009*
- Eoin Hayes– "Statistical Modeling and Forecasting: A Tutorial" *Summer 2007*

Workshops Attended:

Applied Management Principles Program - Krannert School of Management, Purdue University
West Lafayette, Indiana, May 17th to 28th, 2010

Next Generation Infrastructures Academy – Energy Markets Track
Venlo, The Netherlands, September 21st to 25th, 2009

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Selected Honors:

- NREL Chairman's Award for Exceptional Performance *August 2020*
- 2019 Best Paper Award: Journal of Modern Power Systems and Clean Energy *August 2020*
  - "Adjustable and distributionally robust chance-constrained economic dispatch considering wind power uncertainty"
- NREL 2019 Outstanding Performance Award *March 2020*
  - "For technical leadership in power systems engineering and advancement of the NREL mission at multiple scales"
- NREL 2019 Directors Publication Impact Award *March 2020*
- NREL Outstanding Mentor Award *September 2018*
- Best Paper Award (x2), IEEE Power & Energy Society General Meeting *August 2018*
- NREL Outstanding New Partnership Award –Peña Station Next *March 2018*
- Best Paper Award, IEEE Power & Energy Society General Meeting *July 2017*
- NREL President's Award *August 2016*
- Fulbright Fellowship, VTT, Finland *May – August 2016*
- Best Paper Award, IEEE Power & Energy Society General Meeting *July 2016*
- NREL RPP Outstanding Mentor Award *September 2015*
- Best Paper Award, IEEE Power & Energy Society General Meeting *July 2015*
- NREL Outstanding SULI Mentor Award *Spring 2015*
- NREL RPP Outstanding Mentor Award *September 2014*
- FOCAPD Young Researcher Travel Grant *July 2014*
- NREL Outstanding SULI Mentor Award *Summer 2012*
- Undergraduate Award for Teaching Excellence – Purdue Chemical Engineering *Spring 2009*
- Eastman Graduate Student Travel Grant *Spring 2008*
- President, Chemical Engineering Graduate Student Organization - Purdue *2007-2008*
- Charlemagne Scholarship - RWTH Aachen, Germany *2002-2003*

Selected Student Awards:

- Marena Trujillo: Best Student Paper Award, 49th IEEE Photovoltaic Specialists Concerence (PVSC 49), 2022.
- Megan Rose: National Aeronautics and Space Administration (NASA) Space Technology Graduate Research Opportunities Fellowship, 2021 - 2025
- Simon Julien: Undergraduate Research Award, University of Colorado Boulder College of Engineering & Applied Science, Spring 2021
- Matthew Bossart: National Science Foundation Graduate Research Fellowship, 2021 - 2024
- Matthew Bossart: 3rd Prize – Graduate Student Poster Contest; 2020 IEEE Power & Energy Society General Meeting
- Katharine Doubleday: Scholar Award – International Chapter of the P.E.O. Sisterhood
- Richard Wallace Kenyon: 2nd Prize – Graduate Student Poster Contest; 2019 IEEE Power & Energy Society General Meeting
- Katharine Doubleday: Outstanding Graduate Student Award, Department of Electrical, Computer & Energy Engineering, University of Colorado Boulder, 2019

Professional Activities:

Journal Reviewer for: *Applied Energy; Applied Soft Computing; Bulletin of the American Meteorological Society (BAMS); Computers & Chemical Engineering; Energy; Energy Conversion & Management; Energy Policy; Energy Research & Social Science; Energy Strategy Reviews; European Journal of Operational Research; Frontiers in Energy Research: Energy Systems and Policy; Frontiers in Energy Research: Process and Energy Systems Engineering; IEEE PES Letters; IEEE Power & Energy Technology Systems Journal; IEEE Transactions on Control Systems Technology; IEEE Transactions on Power Systems; IEEE Transactions on Sustainable Energy; IET Generation,Transmission & Distribution; IET Renewable Power Generation, Industrial & Engineering Chemistry Research; International Journal of Forecasting; International Journal of Power and Energy Systems; International Journal of Sustainable Transportation; Journal of Renewable and Sustainable Energy; Journal of Zhejiang University – Computers & Electronics; Materials and Manufacturing Processes; Mathematical Problems in Engineering; Nature Energy;*

PLOS One; Proceedings of the IEEE, Renewable Energy; Renewable Energy Focus; Resources; Solar Energy; Utilities Policy; Wind Energy.

Conference Paper Reviewer for: *The 12th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS) 2012; IEEE GreenTech 2013; IEEE GreenTech 2014, The 13th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS) 2014; 8th International Conference on Foundations of Computer-Aided Process Design (FOCAPD) 2014; 2015 Summer Simulation Multi-Conference; IEEE GreenTech 2016; 55th IEEE Conference on Decision and Control; The 14th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS) 2016; ASME Turbo Expo 2019; 9th International Conference on Foundations of Computer-Aided Process Design (FOCAPD) 2019, 54th Hawaii International Conference on System Sciences, IEEE Innovative Smart Grid Technologies (ISGT) Europe 2022.*

Book Proposal Reviewer for: *Wiley – Electrical Engineering, Elsevier – Engineering.*

Associate Editor: *Journal of Renewable and Sustainable Energy; June 2019 – Present.*

Editorial Board: *IEEE Transactions on Sustainable Energy; January 2019 – Present.*

Funding Proposal Reviewer for: *National Science Foundation: Cyber-Enabled Sustainability Science and Engineering (CyberSEES) program, Small Business Innovation Research/Small Business Technology Transfer Energy, Power, Control, and Networks (EPCN) program*; *Department of Energy: Small Business Innovation Research/Small Business Technology Transfer, King Abdullah University of Science and Technology Near-Term Grand Challenge AI.*

High Performance Computing Proposal Reviewer for: *LinkSCEEM & Cy-Tera Joint Call for HPC Access.*

Advisory Board, SWEET PATHFNDR project. Swiss Energy Research for the Energy Transition project led by ETH Zürich.

American Meteorological Society, Renewable Energy Committee Member, 2019-2022.

Industry Program Chair, 2021 IEEE Green Technologies Conference, April 7-9, 2021, Denver, CO, USA.

Technical Program Committee Member, 2020 IEEE Green Technologies Conference, April 1-3, 2020, Oklahoma City, OK, USA.

Guest Editor for: *Journal of Energy Engineering*, Special Issue on "*Modeling, Monitoring, and Algorithmic Opportunities in the Next-Generation Power Grid*".

Session Chair, "Forecasting 2", Energy Systems Integration Group (ESIG), Meteorology & Market Design for Grid Services Workshop, June 4-6 2019, Denver, CO USA.

International Programming Committee, Foundations of Computer Aided Process Design (FOCAPD) 2019, July 14-18, Copper Mountain, CO, USA.

Salt River Project Grid Modernization Advisory Board, 2018 - 2019.

Program Committee, 2017 Summer Computer Simulation Conference, July 9-12, Seattle, WA, USA.

Session Chair, "Industrial Applications of Data Analysis, Information Management, and Intelligent Systems", American Institute of Chemical Engineers Annual Meeting, November 13-18, 2016, San Francisco, CA, USA.

Session Chair, "Forecast Issues", 5th International Workshop on Integration of Solar Power into Power Systems, October 19-20, 2015, Brussels, Belgium.

Program Coordinator, AIChE CAST Division 10E: Information Management and Intelligent Systems, 2015

Session Co-Chair, "Data Analysis and Big Data in Chemical Engineering" American Institute of Chemical Engineers Annual Meeting, November 8-13, 2015, Salt Lake City, UT, USA.

Session Co-Chair, "Advances in Smart Grid" American Institute of Chemical Engineers Annual Meeting, November 8-13, 2015, Salt Lake City, UT, USA.

Session Co-Chair, "Advances in Data Analysis: Theory and Applications", American Institute of Chemical Engineers Annual Meeting, November 16-21, 2014, Atlanta, GA, USA.

Session Co-Chair, "Information Management and Intelligent Systems", American Institute of Chemical Engineers Annual Meeting, November 16-21, 2014, Atlanta, GA, USA.

Session Co-Chair, "Design of Energy Systems I", 8th International Conference on Foundations of Computer-Aided Process Design (FOCAPD), July 13 – 17, 2014, Cle Elum, WA, USA.

Technical Program Committee Member, 2014 Sixth Annual IEEE Green Technologies Conference, April 3-4, 2014, Corpus Christi, TX, USA.

Program Co-Coordinator, AIChE CAST Division 10E: Information Management and Intelligent Systems, 2014

Session Chair, "Big Data Applications in Chemical Engineering", American Institute of Chemical Engineers Annual Meeting, November 3-8, 2013, San Francisco, CA, USA.

Session Chair, "Forecasting I", 12th International Workshop on Large-Scale Integration of Wind Power into Power Systems as well as on Transmission Networks for Offshore Wind Power Plants, October 22-24, 2013, London, UK.

Program Committee Member, The American Meteorological Society 2013 Summer Community Meeting, August 12-16, 2013, Boulder, CO, USA.

Session Chair, "Wind Power – Session A", 5th Annual IEEE Green Technologies Conference, April 4th, 2013, Denver, CO, USA.

Session Co-Chair, "Energy and Sustainability in Operations", American Institute of Chemical Engineers Annual Meeting, October 28th, 2012, Pittsburgh, PA, USA.

Session Chair, "Smart Grid and Wind Power – Part II", 10th International Workshop on Large-Scale Integration of Wind Power into Power Systems, October 26th, 2011, Aarhus, Denmark.

Languages:

English:	Native Speaker
German:	Fluent
Swedish:	Fluent