BRYONY DUPONT

Associate Professor of Mechanical Engineering, Visiting Scholar

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MIT Building 3-449A, 77 Massachusetts Ave, Cambridge, MA 02139
Massachusetts Institute of Technology/Oregon State University www.bryonydupont.com
in linkedin.com/in/bryonydupont v. September 2024

EXPERIENCE

Visiting Scholar, Mechanical Engineering
Massachusetts Institute of Technology
June 2023 – Present Cambridge, MA, USA

Associate Professor, School of Mechanical, Industrial, and Manufacturing Engineering
Oregon State University
as of September 2019 Corvallis, OR, USA

Courses:
- ME/CE 419: Wind Energy Systems Design (Tufts University, 2022-23)
- ENGR 199/102: Design Thinking and Problem Solving: Sustainable Space Systems (Winter 2021)
- ME 499/599: Design for Manufacturing (Spring 2017–24)
- ME 519: Sustainable Product Design (Spring 2015–16, 2018)
- ME 382: Introduction to Mechanical Design (Winter 2014–16, 2018-19; Fall 2016, 2018–2024)
- ME 507: Design Seminar/ME Seminar (2013 – 2020)
- MIME 101: Introduction to Mechanical, Industrial, and Manufacturing Engineering (Fall 2014)

Joint Appointment, Water Power Research
National Renewable Energy Laboratory
As of April 2021 Boulder, CO, USA

Visiting Associate Professor, Mechanical Engineering
Tufts University
September 2021 – June 2022 Boston, MA, USA

Assistant Professor, School of Mechanical, Industrial, and Manufacturing Engineering
Oregon State University
July 2013 – September 2019 Corvallis, OR, USA

Graduate Research Assistant
Carnegie Mellon University
August 2008 – May 2013 Pittsburgh, PA, USA

Instructor, Design for Manufacturing and the Environment, Part I (Fall 2011, 2012)

Graduate Research Intern
National Renewable Energy Laboratory (National Wind Technology Center)
Summer 2011 Boulder, CO, USA

RESEARCH AREA

Design automation for renewable energy systems and environmental sustainability

EDUCATION

Ph.D. in Mechanical Engineering
Carnegie Mellon University
May 2010 – May 2013

Advisor: Dr. Jonathan Cagan
Thesis: *Exploring the Application of an Advanced Extended Pattern Search Algorithm within a Multi-Agent System to Wind Farm Layout Optimization*

M.Sc. in Mechanical Engineering
Carnegie Mellon University
August 2008 – May 2010

Advisor: Dr. Jonathan Cagan

B.Sc. in Mechanical Engineering
Case Western Reserve University
August 2003 – May 2008

sequences in Theater and Materials Science

AWARDS

Boeing Professor of Engineering Design
Oregon State University, 2019-2022

Graduate Mentoring Award
Oregon State University College of Engineering, 2019

C3E Women in Clean Energy Awards for Mid-Career Women's Leadership and Achievement in Clean Energy
Finalist, 2018

ASME Old Guard Early Career Award
2nd Prize, 2016

Discover-E New Faces of Engineering
Awardee, 2016

ASME Graduate Teaching Fellowship
2012-2013

FUNDING

Total Grant and Contract Support: $13,540,932 *(+426k student funding)*

Next Generation Resilience: Design of WECs for Manufacturability and Maintenance. Part of Bi-Partisan Infrastructure Law (BIL) DOE Funding for Activities at the Pacific Marine Energy Center

US Department of Energy

August 2024 – August 2029 $650,,000

Lead PI: Bryson Robertson; Task Lead: Bryony DuPont

SBIR Phase II: Impactful Implementation of Next-Generation Ocean Data Infrastructure through Scalable Community and Stakeholder Engagement Programs

US Department of Energy

August 2023 – August 2025 $1,150,000

Lead Organization: Ocean Motion Technologies

NSF PIRE: Multi-Domain, Multi- Scale, Policy-Aware Digital Twin for Offshore Wind Energy Infrastructure

National Science Foundation

January 2023 – December 2025 $1,500,000

Lead PI: Babak Moaveni, Tufts University

SBIR Phase I: Impactful Implementation of Next-Generation Ocean Data Infrastructure through Scalable Community and Stakeholder Engagement Programs

US Department of Energy

September 2022 – March 2023 $200,000

Lead Organization: Ocean Motion Technologies

A Unified Multiphysics Approach for Modeling, Control, and Optimization of Wave Energy Converters

US Department of Energy

September 2021–August 2024 $1,500,000

Lead PI: Brian Johnson, UT Austin. Co-PIs: Brian Polagye (UW), Bryson Robertson, Bryony DuPont, Solomon Yim, Jim Thompson (UW), Ted Brekken, Yue Cao

NAVFAC Task 7: Sub-surface Wave Energy Converters

NAVFAC

September 2021–August 2024 $1,100,000

Bryson Robertson and Bryony DuPont

SBIR: Wave-Powered RADAR-Based Ocean Sensing Systems

Oscilla Power and United States Department of Energy

August 2021–February 2022 $200,000 total funding, $33,000 personal

CURRENT STUDENTS

PhD Students, Oregon State University

Ali Trueworthy
Expected Graduation: Spring 2024

Hannah Mankle
Expected Graduation: Spring 2024

Aeron Roach
Expected Graduation: Spring 2024

PhD Students, MIT
Team Lead, GEAR Energy
Primary Advisor: Amos Winter

Zhiyi Liang
Expected Graduation: 2026

Collin Goldbach
Expected Graduation: 2027

Juan Romero
Expected Graduation: 2028

Sam Heath
Expected Graduation: 2028

Kinjal Ruecker
Expected Graduation: 2028

Lead PI: Tim Mundon, Oscilla Power; OSU PI: Bryony DuPont

FUNDING, CONTINUED

Coupled Aerodynamic and Hydrodynamic Hybrid Simulation of Floating Offshore Wind Turbines

United States Department of Energy

February 2020–August 2021 $1,250,000

Barbara Simpson, Bryson Robertson, Pedro Lomonaco, Bryony DuPont, Ted Brekken, and Andreas Schellenberg (Maffei Structural Engineering)

Feedstock to Function: Improving bio-based product and fuel development through adaptive technoeconomic and performance modeling

Lawrence Berkeley National Laboratory

December 2018–May 2021 $224,361 OSU funding, $23,382 personal

Lead PI: Vi Rapp. OSU PIs: Kyle Niemeyer and Bryony DuPont

Operationalizing Downstream Product Data for Improved Early Design Processes

National Science Foundation CMMI

September 2018–August 2021 $425,000

Lead PI: Bryony DuPont

Control-Informed WEC Performance Optimization

U.S. Department of Energy/Sandia National Laboratory

July 2018–December 2019 $500,000 total funding, $254,319 personal

Ryan Coe (SNL), Giorgio Bacelli (SNL), Vince Neary (SNL), Bryony DuPont

Advanced Laboratory and Field Arrays (ALFA) for Marine Energy and Laboratory Collaboration Project (LCP)

U.S. Department of Energy Award EE0006816 Extension

July 2018 – June 2021 $2,000,000 total funding, $300,254 personal

Lead PI: Merrick Haller. Co-PIs: Brian Polagye (UW), Jeremy Kasper (UAF), Bryony DuPont, Ben Maurer (UW), Pedro Lomonaco, Tuba Ozkan-Haller, Ted Brekken, Solomon Yim, Rob Cavagnaro (UW), James Joslin, (UW), Emma Cotter (UW), John Horne (UW), Andy Seitz (UAF), Jim Thompson (UW)

Advanced Laboratory and Field Arrays (ALFA) for Marine Energy.

U.S. Department of Energy Award DE-EE0006816

January 2015–January 2018 $4,000,000 total funding, $130,886 personal

PI: Belinda Batten. Co-PIs: Geoffrey Hollinger, Tuba Ozkan-Haller, Merrick Haller, Robert Paasch, Sarah Henkel, Ted Brekken, Bryony DuPont, Annette Von Jouanne, Matthew Evans, Eduardo Cotilla-Sanchez, Ean Amon, Alexandre Yokochi

Product Design for Small Scale Water Purification

Puralytics

June 2015 – December 2015 $8,500

ALUMNI

Postdoctoral Researchers

Jonathan Wardman
Co-Advised with Eduardo Cotilla-Sanchez
March – July 2014

Joseph Piacenza
June – August 2014

PhD Students

Vincenzo Ferrero
PhD, April 2021
"Data-Driven Environmentally Sustainable Product Design: A Shift Toward Increased use of Sustainable Design Activities in the Early Design Phase"

Anna Garcia-Teruel
University of Edinburgh; Research Collaborator
PhD, 2020
"Cost and Performance Optimisation of Wave Energy Converters"

Caitlyn Clark
PhD, December 2019
"Risk- and Reliability-Based Design Optimization of Offshore Renewable Energy Systems"

Aaron Barker
University of Cork; Fulbright Advisor
PhD, February 2019

Ada-Rhodes Short
Co-Advised with Matthew Campbell
PhD, June 2018
"Autonomous Decision Making Facing Uncertainty, Risk, and Complexity"

Chris Sharp
PhD, March 2018
"Wave Energy Converter Array Optimization: Algorithm Development and Investigation of Layout Design Influences"

MS Students

Cameron Irmas
MS, June 2023
"Probabilistic Wind Power Forecasting for Hybrid Systems"

Aeron Roach
MS, January 2022
"A Conceptual Design Tool for High-performance Wave Energy Converters for Blue Economy Applications"

Lauren Quickel, *Tufts University*
MS, December 2021
"Floating Offshore Wind on the Pacific Coast of the United States: Technical Feasibility and Projected Demand"

Best Practices in Engineering Activities within New Product Development at Apparel Companies

Confidential Project Sponsor

January 2015 – December 2015. $8,500

Heuristic Optimization Methods for Wave Energy Converter Array Optimization

Oregon BEST/BPA NW Energy Experience Prize

October, 2014. $23,750

Co-PIs: Chris Sharp and Bryony DuPont

FUNDING, CONTINUED

Toward the Optimization of Collaborative Energy Supply Systems Influenced by the Analysis of Oregon Power Generation and Consumption

NETL Subcontract RES1100425/017

November, 2013. $160,172

Lead PI: Bryony DuPont. Co-PIs: Chris Hoyle, Eduardo Cotilla-Sanchez, Paul King, Danylo Oryshchyn

Toward a Theory for Sustainable Product Design

NSF EAGER Grant: CMMI-1350065

August, 2014. $140,720

PI: Bryony DuPont

PUBLICATIONS

Journal Articles

31. Trueworthy, Ali; Aeron Roach, Bryony DuPont, Thomas Mathai, Jesse Roberts, Jochem Weber, Robert Preus, and Benjamin D. Maurer. 2024. "Understanding the Uncertainty in the Technical Performance Level Assessment for Wave Energy." *Renewable Energy. Under Review.*
30. Trueworthy, Ali; Molly Grear, and Bryony DuPont. 2024. "Transforming Transitions: The Energy Futures of Community-Driven Design." *Renewable Energy. Under Review.*
29. Roach, Aeron; Moira Meek, Raza Syed-Muhammad Ali, Bryony DuPont, and Bryson Robertson. 2024. "A State-of-the-art Review of Submerged Wave Energy Converters." *In Preparation.*
28. Trueworthy, Ali, Alexandra McCarrel, Jake Wieliczkiewicz, Shannon Cellan, Willoughby Peterson, Slater Anderson, Bryony DuPont, and Molly Grear. 2024. "Who will be making wave (energy)? A community-driven design approach toward just, sustainable energy futures in Sitka, Alaska." *Energy Research and Social Science. Under Review.*
27. Short, Ada-Rhodes and Bryony DuPont. 2024. "Computational Cognition for Mission Command and Control Decisions Facing Risk in Unknown Environments." *Under Review.*
26. Short, Ada-Rhodes, Ann D. Lai, Douglas Van Bossuyt, and Bryony DuPont. 2024. "Failure Flow Decision Functions for Iterative Design." *Under Review.*

ALUMNI, CONTINUED

MS Students, Continued

Austin Berrier
MS, June 2021
"Design Optimization of a Structurally Flexible Wave Energy Converter with a Direct Search Algorithm"

Melissa Tensa
MS, May 2021
"Environmental Sustainability during the Early Design Phase: Understanding the Uncertainty in the Use Phase, Visualization, and Automating Design Repository Curation"

Michael Devin
MS, May 2021
"Advanced Computational Modeling Methods for Floating Offshore Wind Systems"

Hannah Mankle
MS, March 2021
"Advanced Computational Modeling and Design of Wave Energy and Floating Offshore Wind Energy Technologies"

Ali Trueworthy
MS, December 2020
"Wave Energy from Idea to Concept to Converter: Structuring Methods for Design and Evaluation of Wave Energy Devices"

Alex Mikes
Co-Advised with Rob Stone
"Data Mining a Design Repository for Automating and Validating Functional Modeling"
MS, April 2020

Katherine Edmonds
Co-Advised with Rob Stone
MS, March 2020
"A Preliminary Methodology For Automating Functional Modeling"

Donovan Ross
MS, June 2019
"Exploring the Effectiveness of Providing Structured Design for the Environment Knowledge during the Conceptual Design Phase"

Annalise Miller
MS, June 2018
"Advancing Wind Systems Design through Optimization and Improved Modeling"

Kaylie McTiernan
University of Washington;
External Committee Member
MS, June 2018
"A Heuristic Optimization Approach to Hydrodynamic Wave Energy Converter Geometry"

25. Short, Ada-Rhodes, Bryony DuPont, and Matthew I. Campbell. 2024. “A Comparison of Tree Search Methods for Graph Topology Design Problems." *Under Review.*

24. Ferrero, Vincenzo and Bryony DuPont. 2024. Exploring Data Mining in Data-Driven Design Processes (Review). *Under Review.*

23. Short, Ada-Rhodes, Robert B. Stone, and Bryony DuPont. 2024. “Effects of Information Fidelity on Risk Informed Autonomous Rovers." *Under Review.*

22. Mankle, Hannah, Paul Branson, Bryony DuPont, and Bryson Robertson. 2023. “Temporal upsampling of wave parameters and impact on time-domain floating body response and wave power." *Journal of Ocean Engineering and Marine Energy*. 9:789–804.

21. Soria-Zurita, Nicolas, Melissa Tensa, Vincenzo Ferrero, Bryony DuPont, Irem Tumer, Rob Stone, and Onan Demirel. 2022. “Uncovering human errors associated with system-user interactions using Functional Modeling." *ASME Journal of Mechanical Design*. Aug 2022, 144(8): 081401

20. Ferrero, Vincenzo, Bryony DuPont, Kaveh Hassani, Daniele Grandi. 2021. “Classifying Component Function in Product Assemblies with Graph Neural Networks." *ASME Journal of Mechanical Design* 144(2): 021406.

19. Stewart, Ryan, Bryony DuPont, Todd Palmer. 2021. A Survey of Multi-objective Optimization Methods and their Applications for Nuclear Scientists and Engineers." *Progress in Nuclear Energy* Volume 138, 2021, 103830,

18. Garcia-Teruel, Anna, Bryony DuPont, David I.M. Forehand. 2021. “Hull Geometry Optimisation of Wave Energy Converters: On the Choice of the Objective Functions and the Optimisation Formulation." *Applied Energy* Volume 298, 117153.

17. Ross, Donovan, Vincenzo Ferrero, and Bryony DuPont. 2021. “Exploring the Effectiveness of Providing Structured DfE Design Strategies During Conceptual Design." *ASME Journal of Mechanical Design* 144(3): 032001.

16. Clark, Caitlyn E., Garrett Barter, Kelsey Shaler, and Bryony DuPont. 2021. “Reliability-Based Layout Optimization in Offshore Wind Energy Systems." *Wind Energy* 2021;1–24.

15. Devin, Michael, Spencer Hallowell, Sanjay Arwade, and Bryony DuPont. 2021. “Optimizing Shared Mooring and Anchor Strength for Floating Offshore Wind Turbine Arrays." *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems* 7(4): 040905.

14. Bosma, Bret, Ted Brekken, Pedro Lomonaco, Bryony DuPont, Chris Sharp, and Belinda Batten. 2020. “Array modeling and testing of fixed OWC type Wave Energy Converters." *International Marine Energy Journal* 3(3), 137-143.

13. Trueworthy, Ali, and Bryony DuPont. 2020. “The Wave Energy Converter Design Process: Methods Applied in Industry and Shortcomings of Current Practices." *Journal of Marine Science and Engineering*. 2020, 8(11), 932.

12. Garcia-Teruel, Anna, Bryony DuPont, David I.M. Forehand. 2020. “Hull Geometry Optimisation of Wave Energy Converters: On the Choice of the Optimisation Algorithm and Geometry Definition." *Applied Energy* Volume 280, 2020, 115952.

ALUMNI, CONTINUED

MS Students, Continued

Vincenzo Ferrero
MS, May 2018
"Environmentally Sustainable Product Design: Understanding the Environmental Impact of Product Function and Product Labeling"

Caitlyn Clark
MS, August 2017
"Offshore Renewable Energy: An Exploration of Techno-Economic Feasibility and Reliability through a Computational Optimization Perspective"

Caitlin Forinash
MS, June 2016
"Floating Offshore Wind Array Systems Optimization off the US West Coast using an Extended Pattern Search Algorithm"

Addison Wisthoff
MS, June 2016
"Using Automation to Understand Sustainable Design Trade-Offs and to Promote Environmental Sustainability in the Early Design Phase"

Christian "Kit" Arbogast
Co-Advised with Devlin Montfort
MS, March 2016
"Assessing Student Conceptual Understanding: Supplementing Deductive Coding with Natural Language Processing Techniques"

Chris Sharp
MS, December 2015
"Wave Energy Converter Array Optimization: Array Economic Analysis and Preliminary Results of a Genetic Algorithm Approach Introducing Cost Factors"

Robert McKenna
MS, December 2015
"Best Practices in Engineering Activities within New Product Development at Apparel Companies"

Undergraduate Researchers

Mohammed Alkharashi
BS, Summer 2021

Christian Ransmeier
BS, Winter 2021

Naser Alqseer
BS: Spring 2020

Ian Williams
BS: Spring 2021

Quinn Smith
BS, June 2019

Heather Miller
BS, June 2019

Hannah Mankle
BS, June 2018

Donovan Ross
BS, June 2017

11. Ferrero, Vincenzo, Arvind Raman Shankar, Karl R. Haapala, and Bryony L. DuPont. 2019. “Validating the Sustainability of Eco-Labeled Products Using a Triple-Bottom-Line Analysis." *Smart and Sustainable Manufacturing Systems* 3: 31–52

10. Clark, Caitlyn E., Annalise Miller, and Bryony DuPont. 2019. “An Analytical Cost Model for Co-Located Floating Wind-Wave Energy Arrays." *Renewable Energy* 132: 885–97.

9. Raoufi, Kamyar, Addison K. Wisthoff, Bryony L. DuPont, and Karl R. Haapala. 2019. “A Questionnaire-Based Methodology to Assist Non-Experts in Selecting Sustainable Engineering Analysis Methods and Software Tools." *Journal of Cleaner Production* 229:528–41.

8. Clark, Caitlyn E., and Bryony DuPont. 2018. “Reliability-Based Design Optimization in Offshore Renewable Energy Systems." *Renewable and Sustainable Energy Reviews* 97(June): 390–400.

7. Sharp, Chris, and Bryony DuPont. 2018. “Wave Energy Converter Array Optimization: A Genetic Algorithm Approach and Minimum Separation Distance Study." *Ocean Engineering* 163:148–56.

6. Short, Ada-Rhodes, Robert D. D. Hodge, Douglas L. Van Bossuyt, and Bryony DuPont. 2018. “Active Mission Success Estimation through Functional Modeling." *Research in Engineering Design* May:1–24.

5. DuPont, Bryony, Ridwan Azam, Scott Proper, Eduardo Cotilla-Sanchez, Chris Hoyle, Joseph Piacenza, Danylo Oryshchyn, Stephen Zitney, and Stephen Bossart. 2016. “An Optimization Framework for Decision Making in Large, Collaborative Energy Supply Systems." *Journal of Energy Resources Technology* 138(September):1–8.

4. DuPont, Bryony, Jonathan Cagan, and Patrick Moriarty. 2016. “An Advanced Modeling System for Optimization of Wind Farm Layout and Wind Turbine Sizing Using a Multi-Level Extended Pattern Search Algorithm." *Energy* 106: 802–14.

3. DuPont, Bryony, and Jonathan Cagan. 2016. “A Hybrid Extended Pattern Search/Genetic Algorithm for Multi-Stage Wind Farm Optimization." *Optimization and Engineering* 17(1):77–103.

2. Ilies, Horea, Matthew Parkinson, Carolyn Seepersad, Michael Kokkolaras, Kenneth Ragsdell, Panos Papalambrous, Farrokh Mistree, Christopher Williams, Rahul Rai, Jitesh Panchal, Scott Ferguson, Bryony DuPont, and James Allison. 2015. “New Perspectives on Design Automation: Celebrating the 40th Anniversary of the ASME Design Automation Conference." *ASME Journal of Mechanical Design* 137(5).

1. DuPont, Bryony, and Jonathan Cagan. 2012. “An Extended Pattern Search Approach to Wind Farm Layout Optimization." *ASME Journal of Mechanical Design* 134:1–18.

Peer-Reviewed Conference Proceedings

50. Liang, ZhiYi; Bryony DuPont, and Amos Winter. 2024. “Techno-Economic Outlooks for the Operation of Zero-Emission Heavy-Duty Trucks: Their Implications on Fleet Operators, Cargo Shippers, and Vehicle Designers." ASME International Design Engineering and Technical Conferences/Computers in Engineering Conference. *Under Review*.

ALUMNI, CONTINUED

UG Researchers, Continued

Hawii Boriyo
Sophomore Women’s Research Fellow
January 2016 – January 2017

Emily Campbell (Bucknell University)
UG Research, Summer 2016

Sadie Boyle
Honors College BS, June 2016

Vincenzo Ferrero
BS, June 2016

Tony Huynh
October 2015 – March 2016

Kristopher Nerczuk
Summer 2015

Jack Bellville
Honors College BS, June 2015

Kari Parker
Honors College BS, January 2015

COMMITTEE MEMBER

Courtney Beringer
PhD Civil Engineering, 2024

Thidarat Sawai
PhD Mechanical Engineering, 2024

Moira Meek
MS Civil Engineering, 2023

Michael Boller
PhD Electrical Engineering, 2023

Ryan Stewart
PhD Nuclear Engineering, 2021

Adrian Sanchez
MS Mechanical Engineering, 2021

Bryan Kelly
Honors BS Mechanical Engineering, 2021

Nathan Rust
MS Mechanical Engineering, Winter 2021

Hannah Walsh
PhD Mechanical Engineering, Fall 2020

Osman Dogan Yirmibesoglu
PhD Robotics, Fall 2020

Daniel Hulse
PhD Mechanical Engineering, Fall 2020

Kamyar Raoufi
PhD Manufacturing Engineering, Fall 2020

Nico Soria
PhD Mechanical Engineering, Spring 2019

Aisha McKee
MS Mechanical Engineering, Spring 2018

Marine Bentivoglio
MS Mechanical Engineering, Fall 2017

Matthew McIntire
PhD Mechanical Engineering, Fall 2016

49. Trueworthy, Ali; Aeron Roach, Jesse Roberts, Jochem Weber, Ben Maurer, Bryony DuPont, Thomas Mathai, Robert Preus. 2023. “Understanding the Uncertainty in the Technical Performance Level Assessment for Wave Energy." *University Marine Energy Research Collaboration Annual Conference*. 4-6 OCT. Durham, NH, USA.

48. Trueworthy, Ali, Bryony DuPont, Molly Grear. 2023. “Transforming Transitions: The Energy Futures of Community-Driven Design." *University Marine Energy Research Collaboration Annual Conference*. 4-6 OCT. Durham, NH, USA.

47. Mankle, Hannah, Bryony DuPont, Bryson Robertson. 2023. “Upsampling wave temporal resolution: Investigating wave parameters and the influence on WEC power performance." *European Wave and Tidal Energy Conference (EWTEC)* 3-7 SEP. Bilbao, Spain.

46. Roach, Aeron, Moira Meek, Raza Syed-Muhammad Ali, Bryson Robertson, Bryony DuPont. 2023. “An Early Design Phase Method for Characterizing and Comparing Wave Energy Converter Archetypes." *European Wave and Tidal Energy Conference (EWTEC)* 3-7 SEP. Bilbao, Spain.

45. Toland, Talia, Gabriel Emunah, and Bryony DuPont. 2022. “Increasing Efficiency and Power Density of Floating Offshore Wind Platforms: Assessing the Viability of Gyroscopic Stabilization and Wave Energy Converters." ASME International Offshore Wind Technical Conference. 6–8 DEC. Boston, MA, USA.

44. Feltis, Michael, Rebecca Wolf, William Newberry, Megan Jenney, Aloysius Udenweze, and Bryony DuPont. 2022. “Theorizing a 100% Wind Scenario for Powering the US Eastern Interconnect: Feasibility, System Design, and Lessons for a Higher-Wind-Penetration Future." ASME International Offshore Wind Technical Conference. 6–8 DEC. Boston, MA, USA.

43. Mankle, Hannah, Tim Mundon, and Bryony DuPont. 2021. “Single-tendon Point Absorber Sensitivity Study: Investigating the difference between time-domain and frequency domain modeling." *European Wave and Tidal Energy Conference (EWTEC)* 16–20 AUG. Plymouth, UK.

42. Trueworthy, Ali and Bryony DuPont. 2021. “Marine energy in a changing climate: How our relationship with climate change impacts the devices we design." *European Wave and Tidal Energy Conference (EWTEC)* 16–20 AUG. Plymouth, UK.

41. Trueworthy, Ali, Aeron Roach, Ben Maurer, and Bryony DuPont. 2021. “Design requirements, assessment methods and potential pathways for moving between grid-scale and emerging market WEC design." *European Wave and Tidal Energy Conference (EWTEC)* 16–20 AUG. Plymouth, UK.

40. Roach, Aeron, Ali Trueworthy, and Bryony DuPont. 2021. “A conceptual design tool for the blue economy and high-performance wave energy converters." *European Wave and Tidal Energy Conference (EWTEC)* 16–20 AUG. Plymouth, UK.

39. Berrier, Austin and Bryony DuPont. 2021. “Optimizing a Structurally Flexible Wave Energy Converter." *European Wave and Tidal Energy Conference (EWTEC)* 16–20 AUG. Plymouth, UK.

38. Ferrero, Vincenzo, Chris Hoyle, and Bryony DuPont. 2021. “A Probabilistic Approach for Estimating the Environmental Impact of Novel Product Concepts." *International Design Engineering and*

COMMITTEE MEMBER, CONTINUED

Fred Berthelsdorf
MS Mechanical Engineering, Spring 2016

Sean Hunter
MS Mechanical Engineering, Spring 2016

Josh Hille
MS Industrial Engineering, Spring 2016 (Minor Advisor)

Robin Kiff
PhD Mechanical Engineering, Spring 2016

Jeremy Flowers
PhD Mechanical Engineering, March 2015

Jonathan Fields
MS Mechanical Engineering, December 2013

GRADUATE COMMITTEE REPRESENTATIVE

Current

Laurinda Nyarko
PhD Environmental Engineering, Spring 2024

Graduated

Lamiya Noor
PhD Civil Engineering, Fall 2023

John Ste Marie
PhD Environmental Engineering, Fall 2023

Hoang Vu
MS Computer Science, Fall 2023

Alex Turner
PhD Computer Science, Spring 2022

Aleah Olsen
M.S. Civil Engineering, Spring 2020

Travis Babikoff
M.S. Environmental Engineering, Spring 2018

Kelsey Chan
M.S. Civil Engineering, Spring 2018

Marina Cameron
M.S. Environmental Engineering, December 2017

Keeley Abbott
M.S. Computer Science, December 2017

Grace Panther
PhD Environmental Engineering, November 2017

Charles Hill
M.S. Computer Science, August 2017

Technical Conferences/Computers in Engineering Conference 16–20 AUG. Virtual.

37. Tensa, Melissa, Jenna Wang, Roscoe Harris III, Jeremy Faludi, and Bryony DuPont. 2021. "A Study of Graphical Representations of Uncertainty in LCA Guide" *International Conference on Engineering Design (ICED)*. 16–20 AUG. Gothenburg, Sweden.

36. Edmonds, Katherine, Alex Mikes, Bryony DuPont, and Robert Stone. 2020. "Data mining a design repository to generate linear functional chains: a step toward automating functional modeling." *Design Computing and Cognition Conference (DCC)*. 14–16 DEC. Atlanta, GA, USA.

35. Edmonds, Katherine, Alex Mikes, Bryony DuPont, and Robert Stone. 2020. "A Weighted Confidence Metric to Improve Automated Functional Modeling". *International Design Engineering and Technical Conferences/Computers in Engineering Conference*. 16–19 August. St. Louis, MO, USA.

34. Ferrero, Vincenzo, Naser Alqseer, Melissa Tensa, and Bryony DuPont. 2020. "Using Decision Trees Supported by Data Mining to Improve Function-Based Design". *International Design Engineering and Technical Conferences/Computers in Engineering Conference*. 16–19 August. St. Louis, MO, USA.

33. Mikes, Alex, Katherine Edmonds, Bryony DuPont, and Robert Stone. 2020. "Optimizing an Algorithm for Data Mining a Design Repository to Automate Functional Modeling". *International Design Engineering and Technical Conferences/Computers in Engineering Conference*. 16–19 August. St. Louis, MO, USA.

32. Bosma, Bret, Ted Brekken, Pedro Lomonaco, Bryony DuPont, Chris Sharp, and Belinda Batten. 2019. "Array Modeling and Testing of Fixed OWC Type Wave Energy Converters." in *European Wave and Tidal Energy Conference*. 1-6 September. Naples, Italy.

31. Clark, Caitlyn E., Anna Garcia-Teruel, Bryony DuPont, and David Forehand. 2019. "Towards Reliability-Based Geometry Optimization of a Point-Absorber with PTO Reliability Objectives." in *European Wave and Tidal Energy Conference*. 1-6 September. Naples, Italy.

30. Mankle, Hannah, Yi-Hsiang Yu, and Bryony DuPont. 2019. "WEC-Sim Array Development and Experimental Comparison Study." in *European Wave and Tidal Energy Conference*. 1-6 September. Naples, Italy.

29. Trueworthy, Ali M., Bryony L. DuPont, Benjamin R. Maurer, and Robert J. Cavagnaro. 2019. "A Set-Based Design Approach for the Design of High-Performance Wave Energy Converters." in *European Wave and Tidal Energy Conference*. 1-6 September. Naples, Italy.

28. Ross, Donovan, Vincenzo Ferrero, and Bryony DuPont. 2019. "Exploring the Effectiveness of Providing Structured DfE Design Strategies During Conceptual Design." in *International Design Engineering and Technical Conferences/Computers in Engineering Conference*. 18-21 August. Anaheim, CA, USA.

27. Soria Zurita, Nicolas, Melissa Tensa, Vincenzo Ferrero, Robert B. Stone, Bryony DuPont, H. Onan Demirel, and Irem Y. Tumer. 2019. "An Association Rule Approach for Identifying Physical System-User Interactions and Potential Human Error Using a Design Repository." in *International Design Engineering and Technical Conferences/Computers in Engineering Conference*. 18-21 August. Anaheim, CA, USA.

GRADUATE COMMITTEE REPRESENTATIVE, CONTINUED

Youssef Bougataya
M.S. Civil Engineering, Spring 2016

Grace Panther
M.S. Environmental Engineering, November 2015

David Lopez
M.S. Environmental Engineering, September 2015

CAPSTONE ADVISOR

Elliott Bixby, Sean Turley, Taylor McEuin, Roslan Godar.
Winter/Spring 2018

Kyle Howard, Bradley Stagnoli, Desmond Turner.
Winter/Spring 2018

Kyle Chambers, Kevin McGill, Khalid Al-Busaidi.
Winter/Spring 2017

John Campy, Ryan Houck, Hamed Al Kharusi.
Winter/Spring 2017

Michael Cullinan, Tair Sadykov, Zhongchi Wang.
Winter/Spring 2016

Vincenzo Ferrero, Jalen Bigej, Matthew Bergthgold.
Winter/Spring 2016

Donald Jahne, Dane Dwyer, Mohammed Almudhyan.
Winter/Spring 2016

Jack Bellville, Blake Bestul, Thomas Brownson.
Winter/Spring 2015

James Cutz, Aiden Doege, David Grosserhode.
Winter/Spring 2015

JOURNAL REVIEWS

- ASME Journal of Mechanical Design
- Science
- Engineering Optimization
- Journal of Wind Engineering & Industrial Aerodynamics
- Artificial Intelligence for Engineering Design, Analysis, and Manufacturing (AIEDAM)
- Wind Energy
- European Journal of Operational Research

26. Tensa, Melissa, Katherine Edmonds, Vincenzo Ferrero, Alex Mikes, Nicolas Soria Zurita, Robert B. Stone, and Bryony DuPont. 2019. "Toward Automated Functional Modeling: An Association Rules Approach for Mining the Relationship between Product Components and Function." in *International Conference on Engineering Design*. 5-8 August. Delft, The Netherlands.

25. Clark, Caitlyn E., and Bryony DuPont. 2018. "Comparing Machine Learning Regression Techniques for Transmission-Related Outages on the Oregon Coast." in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 26-29 August. Quebec City, Quebec, Canada.

24. Tensa, Melissa, Vincenzo Ferrero, Donovan Ross, and Bryony DuPont. 2018. "Assessing the Impact of Product Use Variation on Environmental Sustainability." Pp. 1?9 in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*." 26–29 August. Quebec City, Quebec, Canada.

23. Short, Ada-Rhodes, Bryony DuPont, and Matthew I. Campbell. 2018. "A Comparison of Tree Search Methods for Graph Topology Design Problems." Pp. 81–97 in *Design Computing and Cognition*. 2–4 July. Lake Como, Italy.

22. McTiernan, Kaylie, Ben Maurer, Alberto Aliseda, Brian Fabien, Tim Mundon, and Bryony DuPont. 2018. "Heuristic Optimization Methods Applied To Wave Energy: Miniwec Float Shape Case Study." in *Marine Energy Technology Symposium*. 30 April – 2 May. Washington, DC, USA.

21. Sharp, Chris, Bryony DuPont, Bret Bosma, Pedro Lomonaco, and Belinda Batten. 2018. "Array Design and Device Damping Assignment of Fixed Oscillating Water Columns." in *Marine Energy Technology Symposium*. 30 April – 2 May. Washington, DC, USA.

20. Sharp, Chris, Caitlyn Clark, Annalise Miller, Vincenzo Ferrero, Marine Bentivoglio, Mohamahmehdi Ebrahimi, and Bryony DuPont. 2018. "Characterizing the Use of Heuristic Optimization Methods for Renewable Energy Systems Design." in *AIAA SciTech*. 8–12 January. Kissimmee, FL, USA.

19. Clark, Caitlyn, Annalise Miller, and Bryony DuPont. 2017. "Analytical Cost Modeling for Co-Located Wind-Wave Energy Arrays." in *European Wave and Tidal Energy Conference*. 27 August – 2 September. Cork, Ireland.

18. Sharp, Chris, Bryony DuPont, Bret Bosma, Pedro Lomonaco, and Belinda Batten. 2017. "Array Optimization of Fixed Oscillating Water Columns for Active Device Control." in *European Wave and Tidal Energy Conference*. 27 August – 2 September. Cork, Ireland.

17. Ferrero, Vincenzo J., Arvind Shankar Raman, Bryony DuPont, and Karl R. Haapala. 2017. "Understanding the Sustainability of Eco-Labeled Products When Compared to Conventional Alternatives." in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 6–9 August. Cleveland, OH, USA.

16. Forinash, Caitlin, and Bryony DuPont. 2016. "An Extended Pattern Search Method for Offshore Floating Wind Layout and Turbine Geometry Optimization." Pp. 1-9 in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 21–24 August. Charlotte, NC, USA.

15. Wisthoff, Addison, Vincenzo Ferrero, Tony Huynh, and Bryony DuPont. 2016. "Quantifying the Impact of Sustainable Product

JOURNAL REVIEWS, CONTINUED

- IEEE Transactions on Sustainable Energy
- Renewable and Sustainable Energy Reviews
- Journal of Industrial and Production Engineering
- Optimization and Engineering
- International Journal of Marine Energy
- Research in Engineering Design
- Energy
- IEEE-IAS Power System Engineering
- ASTM Smart and Sustainable Manufacturing Systems

PROPOSAL REFEREE

- National Science Foundation, Civil, Mechanical, and Manufacturing Innovation (CMMI).
- National Science Foundation, Chemical, Bioengineering, Environmental, and Transport Systems (CBET).
- National Academies of Sciences, Engineering, and Medicine
- US Fulbright Commission, Romania
- US Dept of Energy TEAMER Program

MEDIA

- Featured, "Women in Engineering: Bryony DuPont". Oregon State University College of Engineering. `https://www.youtube.com/watch?v=uFyHpYNe2eg`
- Featured Expert, "The Revolutionary Boat Powered by the Ocean". BBC. July 2020. `http://www.bbc.com/future/article/20200718-the-revolutionary-electric-boat-powered-by-the-ocean`.
- Guest, "Glam + Grow". Instagram Live interview with Sneha Sinha, April 2020. `https://www.instagram.com/tv/CAOysrGhEuq/?igshid=mr14xbahv9s`.
- Speaker, "Research Is Only Half the Story: How to Deliver Results with Impact". PMEC Graduate Mentoring Seminar, April 2020. `https://media.oregonstate.edu/media/t/0_1blydj9s`.
- Host, Academic Trax Podcast. http://www.gears-tt.com/
- Speaker, ASME Global Development Forum, August 2018. "Harnessing the Power of the Oceans". `http://www.youtube.com/watch?v=NGXVZcNB6T0`.

Design Decisions in the Early Design Phase through Machine Learning." Pp. 1-10 in *ASME International Design Engineering Technical Conference and Computers and Information in Engineering Conference*. 21–24 August. Charlotte, NC, USA.

14. Sharp, Chris, and Bryony DuPont. 2016. "A Multi-Objective Real-Coded Genetic Algorithm Method for Wave Energy Converter Array Optimization." Pp. 1-10 in *International Conference on Ocean, Offshore, and Arctic Engineering*. 19–24 June. Busan, South Korea.

13. Forinash, Caitlin, and Bryony DuPont. 2016. "Optimization of Floating Offshore Wind Energy Systems Using an Extended Pattern Search Method." Pp. 1-11 in *International Conference on Ocean, Offshore, and Arctic Engineering*. 19–24 June. Busan, South Korea.

12. Wisthoff, Addison, and Bryony DuPont. 2016. "A Method for Understanding Sustainable Design Trade-Offs During the Early Design Phase." in *KES Sustainable Design and Manufacturing Conference*. 3–5 April. Chania, Greece.

11. Sharp, Chris, and Bryony DuPont. 2015. "Analysis of WEC Array Economics: Current State-of-the-Art and Future Needs." Pp. 1-10 in *11th European Wave and Tidal Energy Conference*. 6–11 September. Nantes, France.

10. Sharp, Chris, and Bryony DuPont. 2015. "Wave Energy Converter Array Optimization - A Review of Current Work and Preliminary Results of a Genetic Algorithm Approach Introducing Cost Factors." in *ASME International Design Engineering Technical Conference and Computers and Information in Engineering Conference*. 2–5 August. Boston, MA, USA.

9. DuPont, Bryony, and Addison Wisthoff. 2015. "Exploring the Retention of Sustainable Design Principles in Engineering Practice through Design Education." in *ASME International Design Engineering Technical Conference and Computers and Information in Engineering Conference*. 2–5 August. Boston, MA, USA.

8. DuPont, Bryony, Ridwan Azam, Scott Proper, Eduardo Cotilla-Sanchez, Chris Hoyle, Joseph Piacenza, Danylo Oryshchyn, Stephen Zitney, and Stephen Bossart. 2015. "Decision Making for the Collaborative Energy Supply System of Oregon and Washington." in *ASME Power and Energy Conversion Conference*. 28 June – 2 July. San Diego, CA, USA.

7. DuPont, Bryony, and Chris Hoyle. 2015. "Automation and Optimization of Engineering Design Team Selection Considering Personality Types and Course-Specific Constraints." in *American Society of Engineering Education Annual Conference*. 14–17 June. Seattle, WA, USA.

6. Sharp, Chris, and Bryony DuPont. 2015. "Wave Energy Converter Array Design: A Preliminary Study on the Effect of Minimum Separation Distance Between Converters." Pp. 1-5 in *3rd Marine Energy Technology Symposium*. 25–27 April. Washington, DC, USA.

5. DuPont, Bryony, Joseph Piacenza, Ridwan Azam, John Wardman, Chris Hoyle, Eduardo Cotilla-Sanchez, Danylo Oryshchyn, and Stephen Bossart. 2014. "Decision-Making for Large-Scale Collaborative Power Systems." in *International Annual Conference of the American Society for Engineering Management*. 15–18 October. Virginia Beach, VA, USA.

4. Hoyle, Chris, Joseph Piacenza, Bryony DuPont, and Eduardo Cotilla-Sanchez. 2014. "Robust Optimization of Complex

MEDIA, CONTINUED

- Featured Expert, "Energy for the Planet: Open Ocean Wind Turbines Could Provide Enough Electricity to Power the Entire World." Newsweek. October 2017. `http://www.newsweek.com/energy-planet-open-ocean-wind-turbines-electricity-power-entire-world-681615`.
- Speaker, Discover-E Engineering Week Portland High School Banquet, February 2017. "On Boredom, Awkward Hobbies, and Why You Should Be An Engineer." `http://vimeo.com/206271514`.

STUDENT FUNDING

- Community-Centered Design Methods for Marine Renewable Energy. 2022. Awarded to Ali Trueworthy, PhD Candidate. Pacific Northwest National Laboratory. *$177,984*.
- 2021 US Department of Energy Water Power Technologies Office Marine/Hydrokinetic Graduate Student Research Program. Awarded to Ali Trueworthy, PhD Candidate. Collaborator: Molly Grear, Pacific Northwest National Laboratory. *$38,000*.
- 2020 US Department of Energy Water Power Technologies Office Marine/Hydrokinetic Graduate Student Research Program. Awarded to Austin Berrier, MS Student. Collaborators: Yi-Hsiang Yu and Michael Lawson, National Renewable Energy Laboratory. *$38,000*.
- 2020 US Department of Energy Water Power Technologies Office Marine/Hydrokinetic Graduate Student Research Program. Awarded to Hannah Mankle, PhD Student. Collaborator: Tim Mundon, Oscilla Power. *$38,000*.
- 2019 Oregon State University MIME Strategic Excellence Award: Global Focus for Undergraduates. Awarded to Melissa Tensa, former UG Research Assistant. *$6,000*.
- 2019 Oregon State University MIME Research Experience for Undergraduates Fellowship. Awarded to Jamie Cox, UG Research Assistant. *$4,000*.
- 2018 Oregon State University MIME Research Experience for Undergraduates Fellowship. Awarded to Hannah Mankle, former UG Research Assistant. *$5,000*.
- 2017-2018 Fulbright US Student Program. Awarded to Caitlyn Clark, former PhD Candidate, to visit Aalborg University, Denmark. *$35,000*.

Cyber-Physical Systems." in *International Annual Conference of the American Society for Engineering Management*. 15–18 October. Virginia Beach, VA, USA.

3. DuPont, Bryony, and Jonathan Cagan. 2013. "Multi-Stage Optimization of Wind Farms with Limiting Factors." Pp. 1-12 in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 4–7 August. Portland, OR, USA.

2. DuPont, Bryony, Jonathan Cagan, and Patrick Moriarty. 2012. "Optimization of Wind Farm Layout and Wind Turbine Geometry Using a Multi-Level Extended Pattern Search Algorithm That Accounts for Variation in Wind Shear Profile Shape." in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 12–15 August. Chicago, Illinois, USA.

1. DuPont, Bryony, and Jonathan Cagan. 2010. "An Extended Pattern Search Approach to Wind Farm Layout Optimization." Pp. 1-10 in *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. 15–18 August. Montreal, QC, Canada.

INVITED TALKS AND GUEST LECTURES

- "Engineering Design for Wicked Problems in Energy: A Case Study of Offshore Renewables " Invited talk, University of Minnesota. February 2024.
- "Offshore and Floating Offshore Wind: State of the Technology." Invited talk, Oregon Offshore Wind Kickoff Meeting. May 2022.
- "Engineering Design and Offshore Wind Energy Systems." Invited talk, Offshore Power Research and Education Collaborative. May 2022.
- "Contemporary Issues in Offshore Wind Energy and How Engineering Design Can Help." Invited talk, Tufts University Civil Engineering. April 2022.
- "Engineering Design and Offshore Energy Systems: Synergies, Missing Pieces, and What's Next." Invited talk, National Renewable Energy Laboratory. June 2021.
- "Engineering Design and Offshore Energy Systems: Synergies, Missing Pieces, and What's Next." Invited talk, Tufts University. April 2021.
- "The Role of Engineering Design in Offshore Renewable Energy." Invited talk, Pennsylvania State University. December 2020.
- "The Role of Engineering Design in Floating Offshore Wind Systems." Invited talk, Oregon Coast Energy Alliance. October 2020
- "Design, Optimization, and Advancing the State-of-the-art of Offshore Renewable Energy Systems." Invited Talk – University of Edinburgh. December 2018.
- "Operationalizing Downstream Product Data for Improved Early Design Processes". Invited talk, NSF EDSE Grantees Meeting, September 2018.
- "Harnessing the Power of the Oceans". Invited Talk – ASME Global Development Forum. August 2018.
- "Design, Optimization, and Advancing the State-of-the-art of Offshore Renewable Energy Systems." Invited Talk - National Renewable Energy Lab/National Wind Technology Center. May, 2018.
- "Design Automation for Sustainability: Helping Designers Make Greener Products and Cleaner Power." Invited Talk - University of Wisconsin-Stout. March, 2018.

MEDIA, CONTINUED

- Featured Expert, "Energy for the Planet: Open Ocean Wind Turbines Could Provide Enough Electricity to Power the Entire World." Newsweek. October 2017. `http://www.newsweek.com/energy-planet-open-ocean-wind-turbines-electricity-power-entire-world-681615`.
- Speaker, Discover-E Engineering Week Portland High School Banquet, February 2017. "On Boredom, Awkward Hobbies, and Why You Should Be An Engineer." `http://vimeo.com/206271514`.

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- 2020 US Department of Energy Water Power Technologies Office Marine/Hydrokinetic Graduate Student Research Program. Awarded to Austin Berrier, MS Student. Collaborators: Yi-Hsiang Yu and Michael Lawson, National Renewable Energy Laboratory. *$38,000*.
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- 2019 Oregon State University MIME Research Experience for Undergraduates Fellowship. Awarded to Jamie Cox, UG Research Assistant. *$4,000*.
- 2018 Oregon State University MIME Research Experience for Undergraduates Fellowship. Awarded to Hannah Mankle, former UG Research Assistant. *$5,000*.
- 2017-2018 Fulbright US Student Program. Awarded to Caitlyn Clark, former PhD Candidate, to visit Aalborg University, Denmark. *$35,000*.

- "Design Automation for Sustainability: Helping Designers Make Greener Products and Cleaner Power." Invited Talk - Purdue University. November, 2017.
- "Offshore Renewable Energy Systems Optimization: The Pacific Perspective." Invited Talk - University of Massachusetts, Amherst. September, 2017.
- "Exploring Processes That Foster Innovative and Sustainable Product Design." International Conference on Sustainability Science and Engineering. Suzhou, China. October, 2016.
- "A Sustainable Design Repository for Influencing the Eco-Design of New Consumer Products." International Conference on Sustainability Science and Engineering. Suzhou, China. October, 2016.
- "Design Automation for Renewable Energy Systems." Invited Talk - Sandia National Laboratory, Albuquerque, NM, USA. October, 2016.
- "Improved Methods for Understanding Sustainable Design Tradeoffs During the Early Design Phase." 5th International Forum on Sustainable Manufacturing. Lexington, KY, USA. September 2015.
- "Optimization of Wind Farms and Collaborative Renewable Energy Systems." Invited Talk - Case Western Reserve University, Cleveland, OH, USA. November 2014.
- "Overcoming Global Barriers to Implementation of Sustainable Product Development." Invited Talk - North Carolina State University, Raleigh, NC, USA. October 2014.
- "Design Automation for Renewable Energy Systems: What?s Next?" IDETC/CIE Design Automation Committee 40th Anniversary Lightning Talk. August 2014.
- "Overcoming Global Barriers to Implementation of Sustainable Product Development." Invited Talk - University of Cardiff, Cardiff, Wales. June 2014.
- "Wind Energy Systems." Guest Lecture - ECE 437/537. June 2014.
- "Computational Design Tools for Global Sustainable Product Development." NSF/NSF- China Workshop on Sustainable Manufacturing and Design. Wuhan, China. March 2014.
- "Renewable Energy Systems Optimization." University of Washington. February, 2014.
- "Energy Matters - Energy Systems Engineering." Guest Lecture - ENGR 363. February 2014.
- "Employing Wind Farm Performance Data for Model Validation and Turbine Layout/Geometry Optimization. OSU MIME Design Seminar Series. January, 2014.
- "Energy Systems Engineering at OSU," Guest Lecture - MIME 101. October, 2013—2018.

SERVICE TO THE PROFESSION

- Associate Editor, *Journal of Mechanical Design*, October 2023 – Present.
- Chair, Board of Directors, University Marine Energy Research Community (UMERC), April 2022 – December 2023
- External Examiner, Dr. Andrea Caio, University of Edinburgh, April 2023.
- External Examiner, Dr. Paul Westermann, University of Victoria, August 2020.
- Senior Researcher Assessment, Dr. Katherine Dykes, Denmark Technical University, Fall 2019.

Conference Service

STUDENT FUNDING, CONTINUED

- 2017 NSF/ASME Design Essay Competition. Awarded to Donovan Ross, former MS Student. *$1,250*.
- 2016 NSF National Research Traineeship Fellowship: Marine Risk and Reliability. Awarded to Chris Sharp, former PhD Candidate. *$38,916*.
- 2016 NSF/ASME Design Essay Competition. Awarded to Caitlyn Clark, former PhD Candidate. *$1,250*.
- 2016 NSF/ASME Design Essay Competition. Awarded to Chris Sharp, former PhD Candidate. *$1,250*.
- Avangrid (Iberdrola USA) Foundation Fellowship 2016-2017. Awarded to Caitlyn Clark, former PhD Student. *$38,916*.
- 2015 NSF/ASME Design Essay Competition. Awarded to Christian (Kit) Arbogast, former MS Student. *$1,250*.
- 2015 NSF/ASME Design Essay Competition. Awarded to Kristopher Nerczuk, former UG Research Assistant. *$1,250*.

- Executive Committee Chair, Design Automation Conference, ASME IDETC/CIE, Aug 2021—Aug 2022.
- Conference Chair, Design Automation Conference, ASME IDETC/CIE, Aug 2020—Aug 2021.
- Program Chair, Design Automation Conference, ASME IDETC/CIE, 2019—2020
- Special Sessions Chair, Design Automation Conference, ASME IDETC/CIE, 2018–2019
- Chair, ASME DED Student Affairs and Early Career Professionals Committee, American Society of Mechanical Engineers IDETC/CIE, 2014—2019
- Chair, Student Activities, ASME IDETC/CIE, 2016—2019.
- Vice Chair, ASME Design and Advanced Manufacturing Market Segment Team, 2015—2016
- Reviewer and Session Chair, ASME Conference on Ocean, Offshore, and Arctic Engineering (OMAE)
- Reviewer and Session Chair, American Society of Engineering Education (ASEE) Annual Conference and Exposition
- International Programme Committee, KES Sustainable Design and Manufacturing Conference
- Program Committee, International Conference on Design Creativity
- Reviewer, International Conference on Engineering Design
- Reviewer, European Wave and Tidal Energy Conference
- Reviewer, Marine Energy Technology Symposium

Invited Workshops

- DOE's Water Power Technology Materials and Manufacturing Workshop. Durham, NH, USA. October 2023.
- 2019 NSF Workshop for Engineering Design and Systems Engineering: Positioning EDSE Research for Sustained Societal Impact. Purdue University. October 2019. Presenter and NSF Awardee.
- 2018 NSF Design Circle Workshop: Designing and Developing Global Engineering Systems. Corvallis, OR, USA. March 2018. Co-Organizer.
- National Effective Teaching Institute. Philadelphia, PA, USA. May 2017.
- NSF Engineering Design and Systems Engineering Foundations Workshop. Atlanta, GA, USA. January 2017.
- NSF Engineering Design and Systems Engineering Foundations Workshop. Clemson, SC, USA. November 2015.
- 5th International Forum on Sustainable Manufacturing. Lexington, KY, USA. September 2015.
- NSF Workshop on Frontier Research in Sustainable Manufacturing. Arlington, VA, USA. August 2015.
- NSF/NSF-China Workshop on Sustainable Manufacturing and Design. Wuhan, China. March 2014.

UNIVERSITY SERVICE

- Chair, MIME Promotion Committee, Professor of Practice, 2024.
- Chair, MIME Promotion Committee, Senior Instructor I, 2023.
- Member, College of Engineering Education Taskforce, February 2019–2021
- Chair, MIME Promotion Committee, Senior Instructor II, 2019.
- Member, First-Year Experience Standing Committee, OSU COE, 2018–2021
- Area Lead, *Mechanical Design*, Fall 2018–Spring 2020

- Member, ME Curriculum Revision Committee, 2018–2021
- Best Practices for Graduate Student Researchers (Original Lecture Series), Fall 2015– 2020.
- Member, Pacific Marine Energy Center Director Search Committee, Fall 2017
- Search Advocate Training, September 2017.
- Chair, MIME Public Info Representative II Search Committee, Winter, 2017.
- Member, OSU Office of Research and Economic Development Research Coordinator Search Committee, 2016
- Member, MIME Strategy Committee, Fall 2016–2017
- Member, MIME School Head Search Committee, 2016.
- Co-Faculty Lead, Project X. OSU MIME STEM Outreach Student Organization. 2016–2019.
- Faculty Exhibitor, US Science and Engineering Festival. Washington, DC. April 2016.
- Outreach Coordinator, K*NEX Design/Build Activity, Linus Pauling Middle School, 2015–present
- Activity Coordinator, “Discovering the Scientist Within", 2015–present