

GRADUATE WOMEN IN ENGINEERING NETWORK

Presents

*SHARING YOUR VOICE
TAKING YOUR NEXT LEAP*

3rd Annual Symposium

February 13, 2024



Women in Engineering Program

SYMPOSIUM NETWORKING ACTIVITIES

Throughout the Symposium, we offer multiple activities to participate in:

Symposium Bingo

Keep your eye out for opportunities to fill out your symposium bingo card, located on the back of this program booklet. Fill out the box appropriately (i.e., respond to prompts) and check off boxes that you complete. To complete a "Bingo," check off four boxes to create a line. Note: Your line can only include ONE gold box. At the end of the day, show your completed Bingo Card to the WiE Staff at the Check-In Desk to receive a prize.

Name Badge Stickers

Find a friend, and swap a sticker! Your name badge contains a unique set of stickers. As you meet people throughout the day, we encourage you to find similarities between you and your peers. When you identify something that you have in common with another person, swap stickers with them and use it to decorate your name badge!

Compliment Cards

Like a presentation or think someone is a rockstar? Embrace the opportunity to express admiration and appreciation for your peers by sharing positive sentiments on specially designed cards placed in your name badge. We encourage you to exchange these cards to create a positive and uplifting environment at the symposium and enhance your personal and professional connections!

Registered participants that attend all Symposium sessions including the *Opening Plenary, Lunch and Table Talks, and Closing Reception and Awards* will be eligible to win one of five (5) \$1000 door prizes! Must be a current CoE graduate student and present to win.

SHARING YOUR VOICE, TAKING YOUR NEXT LEAP

FEBRUARY 13, 2024

SYMPOSIUM AT A GLANCE

9:00 AM: Sign-in opens (Outside STEW 302)

9:30 AM - 10:15 AM: Opening Plenary featuring Dr. Sydney Hollingshead (STEW 302)

10:15 AM - 10:30 AM: Transition & Break

10:30 AM - 11:40 AM: Session 1 - Graduate Student Presentations (STEW 214 & 218)

11:40 AM - 11:50 AM: Transition & Break

11:50 AM - 1:30 PM: Lunch and Table Talks (STEW 302)

1:30 PM - 1:45 PM: Transition & Break

1:45 PM - 2:45 PM: Session 2 - Graduate Student Presentations (STEW 214 & 218)

2:45 PM - 3:00 PM: Transition & Break

3:00 PM - 4:00 PM: Session 3 - Graduate Student Presentations (STEW 214 & 218)

4:00 PM - 5:30 PM: Closing Reception and Awards (STEW 306)

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AGENDA

9:30 AM - 10:15 AM: Opening Plenary featuring Dr. Sydney Hollingshead (STEW 302)

10:15 AM - 10:30 AM: Transition & Break

10:30 AM - 11:40 AM: Session 1 - Graduate Student Presentations

Room 1: Traditional Talks (STEW 214 A/B)

Alum in the Room: Dr. Kimberly Kovalchick, Moderator: Burla Ondes

CFD Modelling of Droplet Fragmentation Using Planar Shock Waves in a Shock Tube

Reshma Chandrasekar, Aeronautics and Astronautics Engineering

Agent based model of TB-HIV Coinfection to Uncover Mechanisms of Synergistic Pathogen-Pathogen Interactions

Alexis Hoerter, Biomedical Engineering

Understanding Engineering Practitioners' Conceptions of DEI

Sowmya Panuganti, Engineering Education

Assessment of crew mental workload, situational awareness, and attention in multiple sUAS BVLOS operations

Radhika Bhopatkar, Environmental and Ecological Engineering

Optimization of gas lift system for well performance improvement in Asmari formation: A techno-economic perspective

Setu Patel, Industrial Engineering

Towards Modeling of Virtual Reality Welding Simulators to Promote Accessible and Scalable Training

Ananya Ipsita, Mechanical Engineering

Room 2: Traditional Talks (STEW 214 C/D)

Alum in the Room: Dr. Jinsha Li, Moderator: Shanmukhi Sripada

Improving Cellular Infiltration and Regulating the Release of Growth Factors in a Tailored 3D-Printed Composite for Bone Grafts

Claudia Benito Alston, Biomedical Engineering

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AGENDA

Systematic Framework for Model Based Digital Design of Polymorphic Crystallization
Ilke Akturk, Chemical Engineering

Optimizing Thermal Comfort: Predictive Models for Sustainable Indoor Environments
Pretty Elizabeth John, Civil Engineering

Siting Solar Charging Stations for Shared Electric Bikes
Yue Li, Environmental and Ecological Engineering

Melatonin detection using Lignin-based electrodes for wearable sweat sensors
Tuhina Saxena, Industrial Engineering

Improving Air-Source Heat Pump Thermal Comfort by Modifying Equipment and Controls
Nadah Al Theeb, Mechanical Engineering

Room 3: Traditional Talks (STEW 218 A/B)

Alum in the Room: Dr. Jessica Sargent-Brown, Moderator: Morgan Smith

Automated Detection and Classification of Cardiac Abnormalities from Electrocardiogram (ECG) and Photoplethysmogram (PPG)
Ruhi Sharmin, Biomedical Engineering

Process Design and Intensification of Modular Autonomous Crystallization Systems
Monika Neal, Chemical Engineering

Impact of Variability of Haptic Feedback in Virtual Reality (VR) during Task Performance
Nuela Chidubem Enebechi, Industrial Engineering

Model transfer across tellurene nanomanufacturing processes via mean effect equivalence
Yueyun Zhang, Industrial Engineering

Capacity degradation study of sodium ion batteries (NVP/Sn₂HC)
Pooja Ranganathan, Mechanical Engineering

11:40 AM - 11:50 AM: Transition & Break

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AGENDA

11:50 AM - 1:30 PM: Lunch and Table Talks (STEW 302)

Join our Purdue Alumnae, Faculty, and Staff to learn more about their unique experiences and career paths. Their advice can give you valuable insights into preparing for your next leap!

1:30 PM - 1:45 PM: Transition & Break

1:45 PM - 2:45 PM: Session 2 - Graduate Student Presentations

Room 1: Pecha Kucha (STEW 214 A/B)

Alum in the Room: Dr. Jessica Sargent-Brown, Moderator: Burla Ondes

Getting the Team Sync: Exploring Engineering Students' Coordination Commitments during Computational Modeling Projects

Joreen Arigye, Engineering Education

Coupling Gullah Ontologies with Scientific Exploration

Clarreese Greene, Environmental and Ecological Engineering

Driving within a Teammate, Your Car and You: Investigating drivers' perception of teaming with semi-autonomous vehicles

Maya Luster, Industrial Engineering

Advancements in Capsule Endoscopy: Innovative Solutions for Safety, Effectiveness and Trackability Limitations

Anuva Kamboj, Biomedical Engineering

Towards personalized product and treatment design: Integrated digital design of efficacy and optimal treatment of oral drugs

Meng-Hua Yang, Chemical Engineering

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AGENDA

Room 2: Reverse Presentations (STEW 214 C/D)

Alum in the Room: Dr. Bich-Van C. Pham, Moderator: Shanmukhi Sripada

Designing mechanically robust thermal interface materials

Geeta Pokhrel, Materials Engineering

Challenges of doing research outside the planet Earth

Juliana Pereira, Civil Engineering

Physics Informed Neural Networks for Improved Data Processing and Analysis

Shanmukhi Sripada, Mechanical Engineering

Room 3: Traditional Talks (STEW 218 A/B)

Alum in the Room: Dr. Euridice Oware, Moderator: Morgan Smith

Assessment of Seizure-Like Activity in Neuronal Networks Post-Traumatic Brain

Injury Utilizing Novel TBI-On-A-Chip Model

Shatha Mufti, Biomedical Engineering

Process Intensification and Integration of the Continuous Manufacturing of Atorvastatin Calcium Using Spherical Agglomeration

Rojan Parvaresh, Chemical Engineering

The Effect of Pack-out Corrosion in Compression of Built-up Steel Bridge Components

Myriam Sarment, Civil Engineering

Learning Dissipative Neural Dynamical Systems

Yuezhu Xu, Industrial Engineering

2:45 PM - 3:00 PM: Transition & Break

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AGENDA

3:00 PM - 4:00 PM: Session 3 - Graduate Student Presentations

Room 1: Pecha Kucha (ROOM 214 A/B)

Alum in the Room: Dr. Euridice Oware, Moderator: Burla Ondes

Assessment of K-12 Students' Microelectronics Understanding and Awareness

Rachel Gehr, Engineering Education

Opioid Diversion Monitoring

Monika Tomar, Industrial Engineering

Localized Residual Stress Measurements via Energy-based Nanoindentation in Titanium Alloys processed with Laser Powder Bed Fusion

Jia-Huei Tien, Materials Engineering

AD Ray-Optics: Auto Differentiable Ray Tracing Framework

Poulomi Pradhan, Electrical and Computer Engineering

From conductivity imaging to mechanics imaging: the evolution of inverse problems in self-sensing materials

Saranya Ravva, Aeronautics and Astronautics Engineering

Room 2: Reverse Presentations (STEW 214 C/D)

Alum in the Room: Dr. Sydney Hollingshead, Moderator: Shanmukhi Sripada

Accurate Assessment of Fracture Toughness in Human Bone

Glynn Gallaway, Mechanical Engineering

Bioelectric and mechanical interaction in cartilage extracellular matrix remodeling

Hong-Anh Nguyen, Biomedical Engineering

Impulse-Excited Transition Waves in Bistable Mechanical Metamaterials

Sneha Srikanth, Mechanical Engineering

How do contextual factors impact students' academic motivation?

AraOluwa Adaramola, Chemical Engineering

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AGENDA

Room 3: Traditional Talks (STEW 218 A/B)

Alum in the Room: Dr Robin Mills Ridgway, Moderator: Morgan Smith

Virtual Matrix Metalloproteinase Inhibition in Computational Model of in vitro Tuberculosis Infection

Alexa Petrucciani, Biomedical Engineering

Process Control and Design of the Continuous Crystallization of a Polymorphic Agrochemical

Montgomery Smith, Chemical Engineering

Coupling an Olfaction Chamber with Proton Transfer Reaction Mass Spectrometry for Evaluating Human Response to Scented Product Emissions

Jordan Cross, Civil Engineering

Aligning Consumer Preferences in the Shifting Landscape of Nursing Home Accessibility

Emily Garcia, Industrial Engineering

Topological wave energy harvesting in bistable lattices

Yeongeun Ki, Mechanical Engineering

4:00 PM - 5:30 PM: Closing Reception and Awards (STEW 306)

Embrace the opportunity to network with alumni, engage with your peers, and celebrate new collaborations and ideas shared at the symposium!

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PLENARY SPEAKER

Dr. Sydney Hollingshead

Sydney is a development engineer at Cook Biotech Inc. Cook Biotech Inc. creates medical devices that support the regrowth of healthy patient tissue in both surgical- and disease-caused wounds. As a development engineer, Sydney contributes to the discovery and innovation of new healthcare technologies. Sydney evaluates potential technologies for their scientific rigor, patient risk, and scale-up and manufacturing practicality and safety. In addition to product research and development, Sydney designs equipment and develops processes for the scale-up of device manufacturing. Sydney also contributes to intellectual property generation, authoring several patents to date, and serves as a subject matter expert for generation of new ASTM technical standards in biomaterials.



Sydney received her Ph.D. in 2018 from Purdue University Chemical Engineering. Her thesis, "Biomimetic Polymers for Medical Applications," explored soft tissue protein- and polymer-based surgical adhesives. She served as safety officer in her research group and supervised safety inspections and maintenance for biosafety level 1 and 2 laboratories. Sydney led her research group through several lab safety incidents related to biological and chemical hazards. For her work as safety officer, Sydney received the Excellence in Safety Award from Purdue Chemical Engineering in 2018.

Previously, Sydney worked as a graduate engineering co-op at Exxon Mobil in Paulsboro, NJ, researching the rheology of novel polymer additives for engine lubricants. She also worked as a research intern at TriSep Corporation in Goleta, CA, developing improved manufacturing techniques for thin-film polymer filtration membranes. Before her graduate research, Sydney worked as an undergraduate researcher with Dr. Michael Chabynec studying organic photovoltaic processing techniques, and with Dr. David Cleveland studying the sustainability of local food and agriculture production systems. She has also held several leadership positions in outreach organizations, including president of the Purdue Chemical Engineering Graduate Student Organization, president of the University of California at Santa Barbara chapter of the Society of Women Engineers, workshop leader with Purdue Women in Engineering, and founder and leader of the Cook Biotech Inc. Professionals in Career Development group.

Sydney holds a B.S. in Chemical Engineering from the University of California, Santa Barbara. She received the Conexus Indiana's Rising 30 award in advanced manufacturing and logistics in 2021, the Young Investigator Award from Baxter International Inc. in 2017, the Marilyn Forney Graduate Student Trailblazer Award from the Purdue Pipeline Center in 2017, and an Outstanding Student Scholarship from Purdue University College of Engineering in 2016. She currently serves as a board member of the Purdue Chemical Engineering Industrial Advisory Council, representing Cook Biotech Inc, and as a industrial representative on the Purdue Chemical Engineering Diversity Equity and Inclusion committee.

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ALUMNAE GUESTS

Dr. Bich-Van C. Pham

Bich-Van currently is an R&D Associate Director in the Agile Disruptive Innovation team at Kraft-Heinz, leading a team to deliver new innovation to meet consumer needs within the brand portfolio. She has 14 years of experience in the consumer packaged goods (CPG) industry, spanning discovery, product innovation, commercialization, packaging, and project management at PepsiCo in both food and beverage products and USDA experience at Tyson. She has also worked at a national lab and small business in addition to large billion-dollar companies. Bich-Van received her Ph.D. in Chemical Engineering from Purdue and her BS in Chemical Engineering from Northwestern University. She is a strong advocate for DE&I and for STEM, thru the Society of Women Engineers, PepsiCo's Women's Inclusion Network, and beyond. Bich-Van has 2 kids, a 7 year old daughter, and 5 year old son. Her other interests include eating (benefit of working in the food industry!), traveling, photography/arts/crafts, and reading (if she has any time to spare).



Dr. Euridice Oware

Dr. Euridice Oware is an engineering educator serving as a robotics coach at an elementary school in a Chicago suburb. The school has 64 *FIRST*® LEGO® League robotics students in 3rd through 8th grade. In the past, Dr. Oware has served as the professional development partnership director at the Museum of Science in Boston and an evaluator at the Museum of Science and Industry in Chicago. She has also taught math and engineering graphics courses at Northeastern University in Boston. Euridice has an M.S. in civil engineering and a Ph.D. in engineering education from Purdue. One of her favorite Purdue experiences was serving on the WIEP leadership team for 3 years as a graduate student. Today, Euridice enjoys spending time with her 3 nieces, exercising, and baking.



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ALUMNAE GUESTS

Dr. Jessica Sargent-Brown

Jessica Sargent-Brown holds a B.S. in Polymer & Fiber Engineering from Auburn University and an M.S. in Chemical Engineering and Ph.D. in Materials Engineering from Purdue University. While at Purdue, she worked for 3 years as a graduate research assistant for WiE Program's Pre-College Outreach program. Upon graduation in 2020, she went to work in electronic warfare for the Naval Surface Warfare Center, Crane Division. In early 2022 she had the opportunity to return to West Lafayette and join Cook Advanced Technologies, where she works as a research engineer focused on early-stage medical device development. She and her husband currently spend most of their free time remodeling their home and raising backyard chickens.



Dr. Jinsha Li

Jinsha Li graduated from Purdue University in 2019 with a Ph.D. in Agricultural and Biological Engineering. She's the maestro behind the scenes as a Project Manager in the Research Process Development Group at ADM, where she started her adventure as an Ingredient Research Scientist. Juggling the roles of a 2-year-old's mom and a host of a podcast, Jinsha adds a dash of humor to her recipe for success. From the lab to the living room, she proves that life's a blend of scientific precision and joyful chaos.



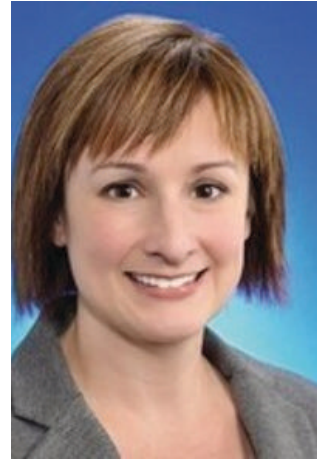
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ALUMNAE GUESTS

Dr. Kimberly Kovalchick

Kimberly Kovalchick, Ph.D., is currently the Senior Director of CMC Project Management at Eli Lilly & Co. She leads a team of technical project managers responsible for delivery of development materials for assets from portfolio entry through FDA submission. While also at Lilly, she has held a number of other roles including Sr. Director of Trial Management Systems in Clinical Capabilities and senior technical roles of increasing responsibility in device development. She was the technical lead for the development of Lilly's first connected device platform for diabetes management, the Tempo Smart Button™. Prior to Lilly, Dr. Kovalchick was a research engineer at Cook Medical in R&D and non-clinical testing for class III cardiovascular and endovascular combination products. She developed the first non-clinical model for submission of an award-winning endoscopic therapy, Hemospray®. She earned her master's degree in Mechanical Engineering and Ph.D. in Biomedical Engineering from Purdue University in 2005 and 2009.



Dr. Robin Mills Ridgway

Robin Mills Ridgway, Ph.D., PE is the Director of Environmental Health and Safety Compliance at Purdue University. She earned her master's and Ph.D. in environmental engineering from Purdue, is a licensed professional engineer in Indiana, a Certified Hazardous Materials Manager, and a LEED accredited professional. She assists and advises the University with environmental compliance and policy matters associated with state and federal regulations, including the Clean Air Act, Clean Water Act, and the Resource Conservation and Recovery Act. She also provides technical guidance and recommendations to a number of University operations including the University's Wade Utility Plant, Purdue Agricultural Centers, and other campus operations.



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ABOUT THE WOMEN IN ENGINEERING PROGRAM

History

Established in 1969, the Purdue Women in Engineering (WiE) Program was the first of its kind in the nation and has been a model for such programs at other universities. Since then, the enrollment of women in the College of Engineering has increased from less than one percent to the current 26 percent. To date, the College of Engineering has granted more than 13,000 engineering degrees to women, thanks in large part to the WiE Program's efforts.

Mission

The Women in Engineering Program at Purdue University is dedicated to enriching the profession of engineering through the full participation of women. We develop and direct activities that provide:

- encouragement for girls and young women to study engineering
- information about careers and companies
- an environment conducive to the successful completion of students' studies

We also strive to maintain strong relationships with alumnae, friends, corporations and foundations who generously support our program.

Objectives

- To provide career information and encouragement to pre-college girls and young women to continue achievement in math and science and consider engineering as an appropriate career choice.
- Encourage women to matriculate at Purdue University in the College of Engineering.
- Ensure a climate in the College of Engineering that allows young women to reach their full potential.
- Provide opportunities for women engineering students to develop leadership skills that can be utilized in their future lives.
- Encourage women to consider graduate education and academia among their options upon graduation.
- Maintain open communication with alumnae and their employers to encourage their continued participation in and support of the Women in Engineering Program.



Women in Engineering Program

SHARING YOUR VOICE, TAKING YOUR NEXT LEAP

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ABOUT THE GRADUATE WOMEN IN ENGINEERING NETWORK

Mission

To provide strategies within a supportive community for women engineering graduate students to advance personally, academically, and professionally.

Objectives

COMMUNITY | To establish an inclusive network that affirms, inspires, and supports women and gender minorities throughout their engineering graduate career.

STRATEGIES | To provide opportunities to develop skills and introduce strategies for professional and personal development.

ADVANCEMENT | To provide an enriching experience that encourages individual growth, and furthers the community of women engineers.

GRADUATE WIE NETWORK LEADERSHIP TEAM

Dr. Suzanne Zurn-Birkhimer, *Associate Director, Women in Engineering Program*

Cathy Deno, *Administrative Assistant, Women in Engineering Program*

Burla Ondes, *Ph.D. Candidate, Industrial Engineering*

Angie Rojas, *M.S. Student, Materials Engineering*

Elizabeth Sanders, *Ph.D. Candidate, Engineering Education*

Morgan Smith, *Ph.D. Student, Materials Engineering*

Shanmukhi Sripada, *Ph.D. Student, Mechanical Engineering*

Dr. Olivia Brandt, *Ph.D., Materials Engineering (Former LT member)*

Individuals of all races, genders, and backgrounds are welcome.

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SYMPOSIUM BINGO

* You must complete one row of four boxes containing only one of the gold squares to win the prize!

<p>Write one new research area that you had never heard of before and discovered today:</p> <p>_____</p>	<p>Write one question you have for an alum at the networking reception:</p> <p>_____</p>	<p>Share a photo on social media/LinkedIn with #TakeMyNextLeapwithWiE</p>	<p>Attend two Pecha Kucha talks. Write the authors' names:</p> <p>1. _____</p> <p>2. _____</p>
<p>Write the name and department of someone you share research interests with:</p> <p>_____</p>	<p>Network 1:1 with an alumna. Write the alum's name:</p> <p>_____</p>	<p>Attend three presentations outside of your discipline. List the disciplines:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<p>Write one thing that you learned at yesterday's workshop:</p> <p>_____</p> <p>_____</p>
<p>Follow 3 new people on LinkedIn. List their names:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<p>Attend two Reverse Presentation talks. Write the authors' names:</p> <p>1. _____</p> <p>2. _____</p>	<p>Find someone with the same undergraduate degree as you. Write the name of the person:</p> <p>_____</p>	<p>Attend all three presentation sessions.</p> <p><input type="checkbox"/> Session 1</p> <p><input type="checkbox"/> Session 2</p> <p><input type="checkbox"/> Session 3</p>
<p>Attend three presentations inside your discipline. Write authors' names:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<p>Connect with an individual outside your discipline and swap stickers. Write their name and discipline:</p> <p>_____</p>	<p>Write one new research question you have:</p> <p>_____</p> <p>_____</p>	<p>Exchange 3 compliment cards. Check boxes when you hand out the cards.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>



PURDUE
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Women in Engineering Program

Women in Engineering Program

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