

ASEE Midwest Section Conference



**Workforce Readiness:
Preparing STEM Graduates for the
Jobs of Today and Tomorrow**

SEPTEMBER 10-12, 2023



HOSTED BY:



COLLEGE OF ENGINEERING

University of Nebraska-Lincoln

UNIVERSITY OF NEBRASKA-LINCOLN

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LEGEND: You may note the following characters, which identify the type of session. More Information is available at the end of the program: **W:** Workshop | **P:** Panel | **T:** Tour | **C:** Comedy Show | **M:** Maps

WELCOME FROM THE CONFERENCE CHAIRS



Dear Esteemed Colleagues and Participants,

On behalf of the ASEE Midwest Section Conference and the College of Engineering at the University of Nebraska-Lincoln, it is our great pleasure to extend a warm welcome to all attendees of the 2023 conference. We are honored and privileged to host this gathering of brilliant minds, dedicated educators, and passionate researchers in the field of STEM education.

The conference theme, *Workforce Readiness: Preparing STEM Graduates for the Jobs of Today and Tomorrow*, was carefully chosen

to acknowledge recent technological and societal changes that have greatly impacted the realm of education across the nation and the world. Artificial intelligence, machine learning, diversity, equity, inclusion, tolerance, social justice, sustainability, and a whole host of other topics have made their way into academic decisions that did not exist even a few years ago. Those emerging topics and concerns must become part of conversations that impact how we educate and prepare students for STEM jobs of today and tomorrow.

As we come together, we embark on a journey of knowledge sharing, collaborative exploration, and innovative ideas. The ASEE Midwest Section Conference provides a platform for crosspollination of ideas and exchange of insights, best practices, and advancements that drive excellence in STEM education. Through these collective efforts, we can enhance teaching methodologies, elevate the student experience, and help advance engineering pedagogy.

Over the next two days, we have an exciting agenda lined up, including thought-provoking keynote sessions, engaging panel sessions, enlightening paper presentations, and invaluable networking opportunities. This conference is not only an opportunity to learn from distinguished experts but also a chance to connect with colleagues, celebrate the work and accomplishments of peers, form new partnerships, and lay the foundation for future collaborations. We encourage you to share your insights and engage in meaningful discussions. Let us create an environment where innovative ideas flourish to inspire one another and to push STEM education boundaries.

We are grateful to the committee who helped us plan, organize, and execute this conference. Please note the page that lists members of the Planning Committee. Of course, our special thanks go to Dr. Rohit Dua for serving as Program Chair and his time and dedication in corresponding with all the authors and reviewers. We also appreciate our reviewers for helping in the paper review process. Special thanks to Visit Lincoln for their generous financial support. We also thank the deans of engineering schools in the Midwest Section for their financial contributions to the conference. And, finally, our sincere gratitude to Dr. Lance C. Pérez, Dean of the UNL College of Engineering, for his unconditional support (financial and otherwise).

Once again, welcome to the conference. Let us make the most of this opportunity to learn, connect, and envision the future of STEM education, together.

Best regards,

Sohrab Asgarpour, Ph.D., Associate Dean for Undergraduate Programs,
Professor of Electrical and Computer Engineering, University of Nebraska-Lincoln

Jena Shafai Asgarpour, Ph.D., CPEM, Professor of Practice
Director & Graduate Chair, Master of Engineering Management Program, University of Nebraska-Lincoln

KEYNOTE SPEAKERS

Monday, Sept. 11 | 8:15 – 9:15 a.m.
Swanson Auditorium^M



Doug Durham

Co-founder/CEO
Don't Panic Labs

Thriving in a Time of Accelerated Innovation

Co-founded by Doug Durham, Don't Panic Labs in Lincoln helps companies innovate through the design and

development of software technologies.

Durham has more than three decades of software engineering and development experience in aerospace and defense, healthcare, manufacturing, eCommerce, consumer web applications, and Internet network services.

He is passionate about the process of solving problems through software, and the application of sound engineering principles and patterns to these efforts. His diverse skills, education, and various leadership roles have shaped his career.

Durham is a proud Husker and has an electrical engineering degree from the University of Nebraska-Lincoln. He has taught at the UNL Raikes School of Computer Science and the College of Engineering and serves on a College of Engineering advisory board.

He recently released his first book, co-authored with Chad Michel, titled "Lean Software Systems Engineering for Developers."

Tuesday, Sept. 12 | 8:15 – 9:15 a.m.
Swanson Auditorium^M

Shonna Dorsey

Executive Director
Nebraska Tech Collaborative

Bridging the Gap: Empowering Diversity in Midwest STEM Through Higher Education



Shonna Dorsey is a Nebraska native who holds undergraduate and graduate degrees in Management Information Systems from the University of Nebraska at Omaha. Her 20+ year career includes serving as a startup co-founder, nonprofit vice president, business analyst, and project manager. Dorsey is an active community member who has served on multiple nonprofit boards as a board member or an advisor for tech workforce development initiatives. She is a board member for the Omaha North High School Foundation and a trustee for the Business Ethics Alliance.

In 2022, Dorsey was selected as the Education Committee Co-Chair for the Nebraska Tech Collaborative, an Aksarben Workforce Initiative. She and her co-chair partnered with community leaders focused on tech education to support initiatives related to PK-12 students, college/university students, and career changers to increase Nebraska's tech talent pipeline. In 2019, she was awarded the Excellence in Community Service Award through the National Daughters of the American Revolution. In 2018, she was selected by Governor Pete Ricketts to serve a three-year term on the Nebraska Information Technology Council as a Commissioner following her appointment by a legislative panel. In 2016, she was one of five Omahans selected for the Greater Omaha Chamber of Commerce Young Professionals Changemaker Award.

CONFERENCE PROGRAM & PLANNING COMMITTEE

Jena Asgarpour, Ph.D.	Midwest Sec. Chair & 2023 Conference Co-Chair Professor of Practice; Master of Engineering Management Program Director University of Nebraska-Lincoln
Sohrab Asgarpour, Ph.D.	2023 Conference Co-Chair Associate Dean of Undergraduate Programs, College of Engineering; Professor of Electrical and Computer Engineering University of Nebraska-Lincoln
Rohit Dua, Ph.D.	Conference Program & Paper Awards Chair Associate Teaching Professor, Electrical and Computer Engineering Missouri University of Science and Technology
Sara Wilson, Ph.D.	Midwest Section Chair-Elect & Awards Chair Interim Head and Associate Professor in Mechanical Engineering University of Kansas
John Krohn, Ph.D.	Midwest Section Treasurer Interim Head and Professor of Mechanical Engineering Arkansas Tech University
J.S. Engebretson, M.A.	Conference Planning Contributor Communications and Marketing Manager College of Engineering, University of Nebraska-Lincoln
Phillip Carter, M.A.	Conference Planning Contributor External and Community Relations Coordinator College of Engineering, University of Nebraska-Lincoln
Matt Honke, M.A.	Conference Planning Contributor Web Specialist College of Engineering, University of Nebraska-Lincoln

SUPPORTING ORGANIZATIONS

We are grateful to these organizations for their generosity and support.

- Visit Lincoln
- Engineering colleges at these institutions:

University of Nebraska–Lincoln	University of Arkansas
University of Kansas	Arkansas State University
Kansas State University	University of Oklahoma
Kansas State University - Salina	Oklahoma State University
Missouri University of Science & Technology	University of Missouri – Columbia

CONFERENCE PROGRAM

The conference will be held in the University of Nebraska-Lincoln Union and the adjacent Jackie Gaughan Multicultural Center, located at 1400 R Street in Lincoln, Nebraska.

SUNDAY (9/10/23)

SUNDAY: Registration, Workshops, Welcome Social & Dinner

1:00 – 5:00 PM	Registration	Unity ^M Entrance
5:00 – 8:00 PM	Registration	Platte River ^M Entrance
3:00 – 6:00 PM	Workshops <ul style="list-style-type: none"> o Session 1: Discussing the impact of AI tools on Engineering Education Classrooms^{W1} o Session 2: ABET Continuous Improvement: A Review of Current Criteria and Proposed DEI Additions^{W2} 	Unity ^M Ubuntu ^M
6:00 – 8:00 PM	Welcome Social & Dinner	Platte River ^M

MONDAY (9/11/23)

MONDAY MORNING: Registration, Breakfast, Keynote Speaker, Concurrent Sessions 2

7:00 AM – 6:00 PM	Registration	Regency ^M Entrance
7:00 – 8:00 AM	Breakfast	Regency ^M
8:15 – 9:15 AM	Welcome: Jena Asgarpour and Sorhab Asgarpour <ul style="list-style-type: none"> o Opening Keynote Speaker: Doug Durham Thriving in a Time of Accelerated Innovation 	Swanson Auditorium ^M
9:30 – 10:30 AM	Industry Panel <ul style="list-style-type: none"> o Session 1: UNL College of Engineering Industry Focus on Preparing the STEM Workforce of the Future^{P1} 	Swanson Auditorium ^M
10:30 – 10:45 AM	Mid-Morning Break: Snacks	Regency ^M

10:45 - 11:45 AM	<p>2C: Civil Engineering Education <i>(continued)</i></p> <ul style="list-style-type: none"> o Strategies for Enhancing Performance Optimization Amidst Workforce Shortage in the Construction Industry - <i>Rebecca B Kassa</i> o Literature Review of Student Success in Statics Course - <i>Calvin Cuddy, Jessica Deters</i> <p>2D: Computer Science Education</p> <ul style="list-style-type: none"> o Leveraging Large Language Models in Education: Enhancing Learning and Teaching - <i>Hossein Saedian</i> o Teaching Functional Programming Paradigm with F# - <i>Huabo Lu, Rong Li</i> o Introducing Deep Learning to Undergraduate Engineering Majors - <i>Lin Zhang</i> o Facilitating Investigation of Drone Precision Landing for Education - <i>Balaji Balasubramaniam</i> 	<p>Heritage^M</p> <p>Chimney Rock^M</p>
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MONDAY LUNCH: Welcome, Student Poster Awards, IEEE Info Session

12:00 - 1:00 PM	<p>Lunch</p> <ul style="list-style-type: none"> o Dean's Welcome: Lance C. Pérez, Ph.D. o Student Poster Awards: Rohit Dua, Ph.D., Program Chair o Information Session - IEEE Teaching Excellence Hub: Steve E. Watkins, Ph.D. 	Regency ^M
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MONDAY AFTERNOON: Concurrent Sessions 3

1:15 - 2:15 PM	<p>Concurrent Sessions 3A, 3B, 3C</p> <p>3A: Mechanical Engineering Education</p> <ul style="list-style-type: none"> o Motivating Learning in the Face of Generative Artificial Intelligence - <i>Sara Wilson</i> o Comparing Entrepreneurial Mindset Among Graduating Senior Students in Mechanical Engineering Through Course Selection/Training Strategy and Question Formulation Technique - <i>Rajeev M Nair, Yimesker S Yihun, Talha Khan, Yuva Tammin</i> o Exploring the Critical Need for Interpersonal Skills in Engineering Students - <i>Stuart P Bernstein</i> <p>3B: Panel: UNL Durham School of Architectural Engineering and Construction - Improvisation Skills for Complete Engineers® P2</p>	<p>Heritage^M</p> <p>Unity^M</p>
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2:15 - 2:30 PM	Afternoon Break: Snacks	Regency ^M
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2:30 - 3:30 PM	<p>Concurrent Sessions 4A, 4B, 4C</p> <p>4A: Electrical and Computer Engineering Education</p> <ul style="list-style-type: none"> o An Interdisciplinary Curriculum in Robotics and Automation to Fill an Industry Gap - <i>Julia L Morse, Tim Bower, Eduard Plett</i> o Work-in-Progress: A semester-long circuit project for general engineering students - <i>Yayu Peng</i> o A novel Approach to Engineering Education Laboratory Experiences through the Integration of Virtual Reality and Telerobotics - <i>Preston D Ward, Michael Hempel, Hamid Sharif</i> o Discrete Convolution Visualization Utilizing a Jupyter Notebook - <i>Edward C Greco, Zahra Zamanipour</i> <p>4B: Chemical Engineering Education</p> <ul style="list-style-type: none"> o Draining a Tank Through Multiple Orifices: An Improved Lab Experiment in Fluid Mechanics - <i>Edgar Clausen, Stephen Donnelly, Savannah Godwin, Nghi Ngo, Kaleb Manley</i> o The Forces of Stage Design: An Interdisciplinary Approach to Teaching Normal Force, Frictional Force, and Design Ethics for non-STEM Majors - <i>Kristine Q Loh, Moumita Dasgupta</i> 	Ubuntu ^M
		Heritage ^M

	<ul style="list-style-type: none"> o Implementing a Virtual STEM Camp for Middle- and High Schoolers in a Post-COVID Climate Leveraging Prior Experience - <i>Oghenetega A Obewhere, Karen Acurio Cerda, Rajesh Keloth, Shudipto K Dishari</i> o Adding Ph.D. Students to the Chemical Engineering Alumni Student Mentoring Program - <i>Edgar C Clausen, Heather Walker, William K McAllister, Michael Mourot, Robert Dean, Greg Nesmith</i> <p>4C: Panel: UNL Durham School of Architectural Engineering and Construction - Increasing Women's Representation in Engineering^{P3}</p>	Unity ^M
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MONDAY TOURS

3:40 - 5:30 PM	Tours	
	Tour Option 1: UNL Engineering Research Center ^{T1}	Meet inside Regency ^M
3:30 - 5:30 PM	Tour Option 2: Nebraska State Capitol ^{T2}	Meet at registration area at the Regency ^M entrance

MONDAY EVENING: Banquet, Awards, Entertainment (Comedy Magic Show)

6:00 - 8:00 PM	<p>Banquet</p> <ul style="list-style-type: none"> o ASEE Midwest Section Awards: <i>Sara Wilson, Awards Chair</i> o Outstanding Teaching Award: <i>Christopher Dalton, Ph.D., Associate Professor of Aerospace and Mechanical Engineering, University of Oklahoma</i> o Outstanding Service Award: <i>Rohit Dua, Ph.D., Associate Teaching Professor of Electrical and Computer Engineering, Missouri University of Science and Technology</i> o Banquet Entertainment: Comedy Magic Show^c Gayle Becwar gave his first performance as a child in 1967 at his father's traveling magic show. His full-time solo magic and comedy career started in 1987. Nationally and internationally (e.g., Hong Kong, China, Cancun, Mexico,) his audiences love his charming and witty personality and excellent execution. 	Platte River ^M
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TUESDAY (9/12/23)

TUESDAY MORNING: Registration, Breakfast, Keynote Speaker, Concurrent Sessions 5

7:00 - 8:00 AM	Breakfast	Regency ^M
7:00 AM – Noon	Registration	Regency ^M Entrance
8:15 - 9:15 AM	Opening Keynote Speaker: Shonna Dorsey Bridging the Gap: Empowering Diversity in Midwest STEM Through Higher Education	Swanson Auditorium ^M
9:30 - 10:30 AM	<p>Concurrent Sessions 5A, 5B, 5C, 5D</p> <p>5A: Pilot Programs</p> <ul style="list-style-type: none"> Empowering Low-Income Students for Success in Computer Science and Engineering: The S-STEM Project at the University of Louisville - <i>Wei Zhang</i> An integrated food-energy-water systems course that builds systems thinking skills among graduate students in STEM - <i>Mirit Shamir, Matthew Sanderson, Rebecca Cors, Nathan Hendricks, Stacy Hutchinson, Prathap Parameswaran, Melanie M Derby</i> The impact of a pilot program incorporating inclusive teaching practices intervention in graduate chemical engineering education on retention efforts - <i>Prajnaparamita Dhar, Meagan Patterson</i> Closing the Gap Between Industry Needs and Academic Training Related to Process Safety Instruction - <i>Hunter R Flodman</i> <p>5B: UNL Student Panel</p> <ul style="list-style-type: none"> The Impact of AI on Workforce readiness - Are our STEM graduates ready?^{P4} <p>5C: Project Based Learning</p> <ul style="list-style-type: none"> WIP) Creating Value: Building an Engineering Mindset via Integrated Projects - <i>Adam C Lynch, Amber Williams</i> Data Acquisition Using LabVIEW and MATLAB for Mechanical Engineering Laboratories - <i>Trevor Harris, Stephen Pierson, Hari Pandey, Han Hu</i> Enhancing Undergraduate Engineering Design Education through Mini-Prototype Projects and an Entrepreneurial Mindset - <i>Yimesker S Yihun, Lena Lamei</i> 	<p>Heritage^M</p> <p>Unity^M</p> <p>Ubuntu^M</p>

	5D: Mechanical Engineering Education <ul style="list-style-type: none"> o Group-Project-Based Development of A Modular Microfluidic Platform: A Case Report on A Hands-on Microfluidics Course - <i>Carson Emeigh, Austin Griswold, Rumayel Pallock, Jaideep Sahni, Morgan Schake, Udochukwu Anuta, Jessica Deters, Sangjin Ryu</i> o In Class Boiling Demonstration to Illustrate the Transient (Time Dependent) First Law of Thermodynamics Equation - <i>Randy D Kelley</i> o Integration of Metal Additive Manufacturing Using Fused Deposition Modeling in Mechanical Engineering Education - <i>Chinmaya Joshi, Stephen Pierson, Jackson Minnick, Corbin Russ, Han Hu</i> o Coupled Field-Driven Design and Numerical Simulation for Engineering Education - <i>Joshua Mora Sanchez, Ethan Weems, Han Hu</i> 	Swanson Auditorium ^M
10:30 – 10:45 AM	Mid-Morning Break: Snacks	Regency ^M
10:45 – 11:45 AM	<p>Concurrent Sessions 6A, 6B, 6C</p> <div> <p>6A: Challenges in Engineering Education</p> <ul style="list-style-type: none"> o What Universities Should Know About Minoritized Undergraduate Engineering Students' Mental Health, Emily Fitzpatrick - <i>Hannah Baldwin, Isabel Adams, Mun Yuk Chin, Jessica Deters</i> o Meaning in Life Among Engineering Graduate Students in Relation to Well-being and Stress - <i>Yaoling L Wang, Carrie Clark</i> o Early Alert and Intervention System in Common First Year Courses for Engineering Students - <i>Eric C Einspahr, Nicole Binderup</i> </div> <div> <p>6B: Education and Research</p> <ul style="list-style-type: none"> o A Comparison of Coverage and Subject Areas in Compendex, Inspec, and the Web of Science Core Collection for use as an Engineering Database - <i>Aubrey L Schultz, Jay McAllister</i> o Fostering the Entrepreneurial Mindset in Engineers: A Case Study of the Engineering Statistics and Startups Course - <i>Meghann T Pytko, Tucker Krone</i> o A cross-sectional study of undergraduates ethical reasoning skills at a liberal arts institution - <i>Joel R TerMaat, Kristopher Williams, Christopher D Wentworth</i> o Developing and Implementing ePortfolio Coursework to Leverage Engineering Students' Skillsets for Improved Career Development - <i>Alyssa J Ball, Jacob Holmes, Brandon Crisel</i> </div>	Heritage ^M Unity ^M

	6C: Mechanical Engineering Education <ul style="list-style-type: none"> o In-Classroom Dynamics and Pacing Strategies to Improve Student Learning: Lesson Learned from a 100-Level Course - <i>Chun-Hsing HO, Nyawa Allieu</i> o Mechatronics Education: Exploring Inertial Measurement Units Through Hands-on Learning - <i>Nafiseh Mohammadianaftah, Sara E Wilson</i> o Promoting Collaboration and Team Building through “Fair Game” Problem-Based Exercise - <i>Yimesker S Yihun, Lena Lamel</i> 	Ubuntu ^M
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TUESDAY AFTERNOON: Lunch, Paper Awards, Faculty Mile Award, Business Meeting

12:00 - 12:30 PM	Lunch <ul style="list-style-type: none"> o Paper Awards: Rohit Dua, Ph.D., Program Chair o Faculty Mile Award: Sohrab Asgarpour, Ph.D., Conference Co-Chair 	Regency ^M
12:30 - 1:30 PM	Midwest Section Business Meeting <ul style="list-style-type: none"> o Meeting: Jena Asgarpour, Ph.D., Midwest Section Chair 	Regency ^M

ACKNOWLEDGEMENTS

External Paper Reviewers

- o Douglas Carroll, Ph.D., Professor of Mechanical Engineering, Missouri University of Science and Technology
- o Daniel Moreno, Ph.D., Assistant Professor of Mechanical Engineering, Missouri State University
- o Abdulaziz Abutunis, Ph.D., Assistant Teaching Professor of Mechanical Engineering, Missouri University of Science and Technology
- o Neal Lewis, Ph.D., Master of Engineering Management Program, University of Nebraska-Lincoln
- o Laura Ford, Ph.D., Associate Professor of Chemical Engineering, University of Tulsa

Midwest Section Awards Committee

- o Sara E Wilson, Ph.D., Associate Professor of Mechanical Engineering, University of Kansas
- o Laura Ford, Ph.D., Associate Professor of Chemical Engineering, University of Tulsa
- o Prajna Dhar, Ph.D., Professor of Chemical Engineering, University of Kansas

Paper Awards Committee

- o Sara E Wilson, Ph.D., Associate Professor of Mechanical Engineering, University of Kansas
- o Neal Lewis, Ph.D., Master of Engineering Management Program, University of Nebraska-Lincoln
- o Amardeep Kaur, Ph.D., Associate Professor of Electrical and Computer Engineering, Southern Illinois University Edwardsville

WORKSHOPS

1) Discussing the Impact of AI Tools in Engineering Education^{W1} Sunday, September 10 | 3:00 – 6:00 PM | Unity^M

As AI-infused tools increase in popularity, it is important to understand their impact in our classrooms. Join engineering faculty as we discuss how we may integrate these tools into our instruction. In this workshop we will introduce ChatGPT and other tools on the rise, guide you through opportunities for student engagement, present best practices, and limitations, and end with insights into AI's diversity, equity and inclusivity implications.

Objectives

- o Explore various AI tools being used for content development.
- o Learn and apply examples of text-based AI instructional practices.
- o Discuss opportunities for student engagement with ChatGPT in the engineering classroom.
- o Gain insights into AI's diversity, equity, and inclusivity implications.

Deliverables

- o 3-hour workshop, including materials (electronically hosted) that participants can use; breakouts to include individual work time, collaboration, and feedback in small groups.
- o A handout containing key resources (links to tools, descriptions, key articles); examples of activities for immediate application; checklist of best practices.

Facilitators

Members of UNL's Engineering and Computing Education Core (ECEC) in the College of Engineering:

- o Tareq Daher, Ph.D., ECEC Director
 - o Yaoling Wang, M.S., Instructional Designer
 - o Robert Vavala, M.S., Instructional Designer
 - o Amy Ort, Ph.D., Senior Instructional Designer, Center for Transformative Teaching
 - o Ash Mitchell, Ph.D., Instructional Design, Center for Transformative Teaching
-

2) ABET Continuous Improvement: A Review of Criteria and Proposed Additions^{W2} Sunday (9/10/23) | 3:00 – 6:00 PM | Ubutu^M

This workshop will engage participants in reviewing current Engineering Accreditation Commission (EAC) and Computing Accreditation Commission (CAC) criteria for accreditation, with a special focus on Criteria 2, 3 and 4 (PEOs, SOs, and Continuous Improvement). In addition, the EAC proposed DEI pilot criteria and CAC DEI proposal will be briefly discussed.

Objectives

- o Review the requirements for compliance with EAC and CAC Criteria with a special emphasis on Criteria 2, 3, and 4.
- o Understand and reflect on common shortcomings of compliance with the criteria.
- o Create a plan to strengthen areas of compliance for your program(s).
- o Examine the EAC DEI pilot criteria (2-year pilot for 22-23 self-study and 23-24 self-study) and CAC DEI proposal.
- o Reflect on potential strategies to address the DEI pilot criteria in your program(s).

Deliverables

- o 3-hour workshop with individual reflection time in small groups.

Facilitators

- o Alisa Gilmore, M.S., Associate Professor of Practice, UNL Electrical and Computer Engineering; ABET IDEAL Scholar and Program Evaluator for EAC
- o John L. Krohn, Ph.D., Associate Dean, College of STEM & Program Evaluator, Arkansas Tech University

PANELS

1) Panel: Industry Focus on Preparing the STEM Workforce of the Future^{P1} Monday (9/11/23) | 9:30 – 10:30 AM | Unity^M

A panel of industry and educational leaders will discuss the importance of educating, training, hiring and developing the next generation of engineers and engineering leaders.

Moderator

- o Phillip Carter, External/Community Relations Coordinator, College of Engineering, University of Nebraska–Lincoln

Panelists

- o Alex Flamme, UNL College of Engineering alumnus, Huffman Engineering
 - o Ross Baron, Nebraska State Bridge Engineer, Nebraska Department of Roads
 - o Theresa Luensmann, UNL College of Engineering, Interim Director of Career Services
 - o Meghan Berens-Kleinschmidt, Human Resources, NPPD
 - o Taylor Sutton, UNL College of Engineering alumnus, NPPD civil engineer
-

2) Panel: Improvisation Skills for Complete Engineers^{® P1} Monday (9/11/23) | 1:15 – 2:15 PM | Unity^M

Panelists will review improvisation fundamentals that strengthen communication skills and how those can be beneficial to engineering students, share data from previous offerings of this class at the University of Nebraska – Lincoln, run through sample improvisation exercises with attendees, and share resources to help other engineering programs implement similar classes.

Moderator

- o Lily Wang, Ph.D., Director of the UNL Durham School of Architectural Engineering and Construction

Panelists

- o Mark Riley, Ph.D., Associate Dean for Research, UNL College of Engineering
 - o Julie Uribe, Lecturer and Improvisation Specialist, UNL College of Business and College of Engineering
 - o Dada Zhang, Graduate Student, UNL College of Engineering
-

3) Panel: Increasing Women's Representation in Engineering^{P3} Monday (9/11/23) | 2:30 – 3:30 PM | Unity^M

Panelists will share various initiatives and their own experiences related to increasing women's representation in engineering, highlight tactics and strategies that they have found useful, and brainstorm on how to bring about more systemic change to increase women's representation in the field of engineering.

Moderator

- o Lily Wang, Ph.D., Director of the UNL Durham School of Architectural Engineering and Construction

Panelists

- o Cece Abbey, Assistant Director of Student Success Programs, UNL College of Engineering
 - o Yusong Li, Ph.D., Associate Dean for Faculty and Inclusion, UNL College of Engineering
 - o Katie Mowat, Graduate Student, UNL College of Engineering
 - o Emmeline Watson, Assistant Professor of Practice, UNL Durham School of Architectural Engineering and Construction
-

4) Panel: The Impact of AI on Workforce readiness - Are our STEM graduates ready?^{P4}

Tuesday (9/12/23) | 9:30 – 10:30 AM | Unity^M

This panel of Industry professional, undergraduate and graduate STEM students share their perspectives on challenges and opportunities that STEM graduates may face given the ever-changing landscape of the job market. Artificial intelligence (AI) is impacting academia, industry, and the workforce. With most recent online tools at their fingertips, how can STEM graduates navigate workforce readiness. The discussion will address ways in which current AI and technological advancements influence current STEM curricula, curriculum design, transformative learning, skills requirements, job prospect, graduate employability etc.

Moderator

- o Oghenetega Allen Obewhere, Ph.D. student, Chemical and Biomolecular Engineering, University of Nebraska-Lincoln

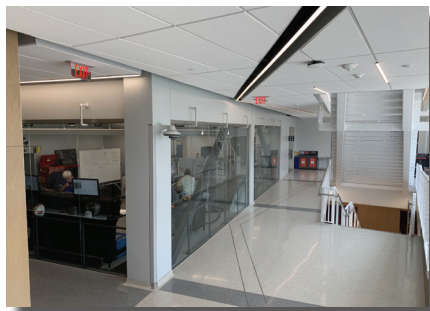
Panelists

- o Payal Chaudhary, Ph.D. student, Chemical and Biomolecular Engineering, University of Nebraska-Lincoln
- o Michael Oluwaseyi Akinseloyin, Ph.D. student, Mechanical and Nuclear Engineering, Kansas State University
- o Carson Emeigh, M.S. student, Mechanical and Materials Engineering, University of Nebraska-Lincoln
- o Nyawa Allieu, Undergraduate Student (senior), Construction Management (double minor in Architectural Studies and Business), University of Nebraska-Lincoln
- o Elena Butler, undergraduate student (senior), Biological Systems Engineering, University of Nebraska-Lincoln
- o Bridger Corkill, Engineer – Permitting and Engineering Division, Nebraska Department of Environment and Energy (NDEE)

TOURS

1) Tour: UNL Engineering Research Center^{T1}

Monday (9/11/23) | 3:40 PM | Meet inside of Regency^M



A \$190 million investment in engineering facilities to develop world-class teaching and research facilities is progressing. In partnership with the State Legislature and the University of Nebraska, the \$75M project built the **Engineering Research Center (ERC)** and is renovating Scott Engineering Center to showcase and enhance the college's research enterprise. With faculty and students now using collaborative research, work and study spaces, the ERC is positioned to help transform research being conducted in the College of Engineering. The 87,000-square foot center houses 50-plus labs from across the college on three primary levels, with an emphasis on materials, biomedical topics, and light-matter interactions.

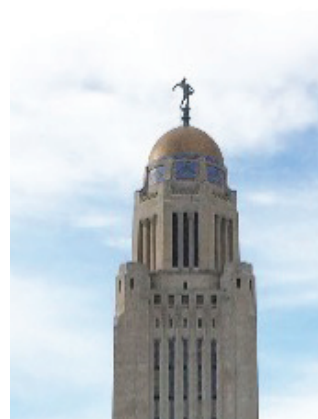
The multi-phase facilities project includes construction of the **\$115 million Kiewit Hall**, which is connected to the engineering complex on City Campus. Funded by a \$25 million gift from Kiewit Corporation and other generous individuals, corporations and foundations, this state-of-the-art facility that will serve as one of the nation's premier hubs for engineering education to help meet the workforce needs of the state and the region.

2) Tour: Nebraska State Capitol^{T2}

Monday (9/11/23) | 3:30 PM | Meet in registration area, Regency^M

The Nebraska State Capitol, at 15 stories and 400 feet tall, is the second-tallest statehouse in the country and offers a spectacular view of the city from its 14th floor observation level. A tour offers a fascinating glimpse into the history, architecture, and governance of the state. The Nebraska State Capitol is in Lincoln.

- o **Architecture and Design:** The Nebraska State Capitol is renowned for its unique and innovative architectural design. The building was completed in 1932 and was designed by architect Bertram Grosvenor Goodhue. It features a blend of Art Deco and Neo-Renaissance architectural styles, and its distinctive features include a 400-foot tower topped by a statue of "The Sower."
- o **The Sower Statue:** The statue on top of the Capitol's tower is called "The Sower." It represents agriculture and the sowing of seeds, reflecting Nebraska's agricultural heritage.
- o **Chamber Tours:** Visitors can tour the chambers where Nebraska's legislative process takes place. This includes the Nebraska Legislature's Unicameral chamber, which is unique in that it's the only state legislative chamber in the United States that has only one house.
- o **Governor's Reception Room:** This room is exquisitely decorated and often used for official receptions and ceremonies. It showcases historical artifacts and artworks related to Nebraska's history.
- o **Hall of Fame:** The Nebraska Hall of Fame showcases notable Nebraskans who have made significant contributions to the state and the nation.
- o **Memorial Chamber:** This solemn space honors Nebraskans who have served and sacrificed in various wars and conflicts. It's a place of reflection and remembrance.



LOCATIONS, MAPS & PARKING OPTIONS

Nebraska Union (NU), 1400 R Street, Lincoln, NE 68588

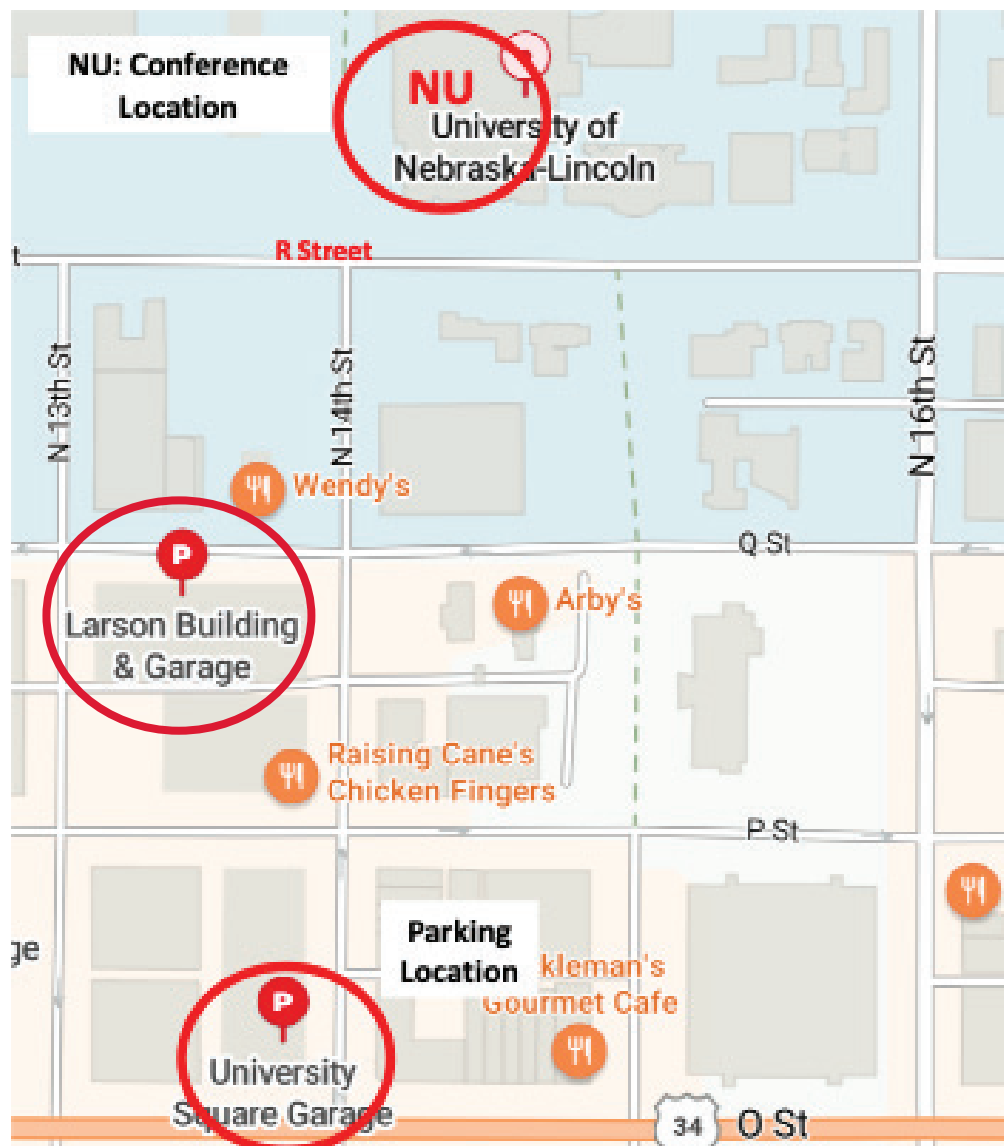
PARKING

Suggested Parking Location: Prioritized by distance

1. University Square Garage: 101 N 14th Street
2. Larson Building & Garage: 1317 Q Street

Parking Information:

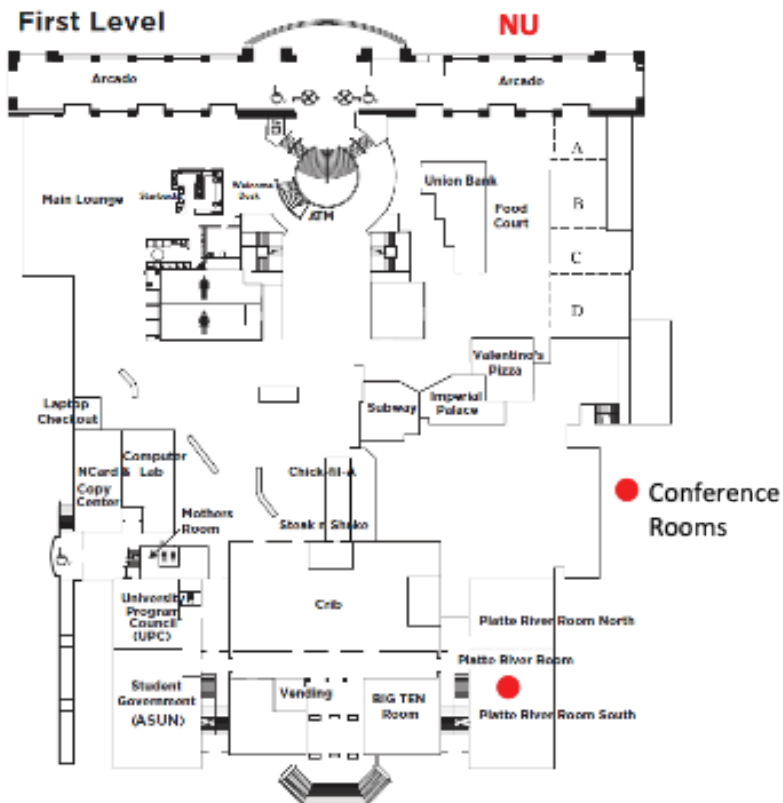
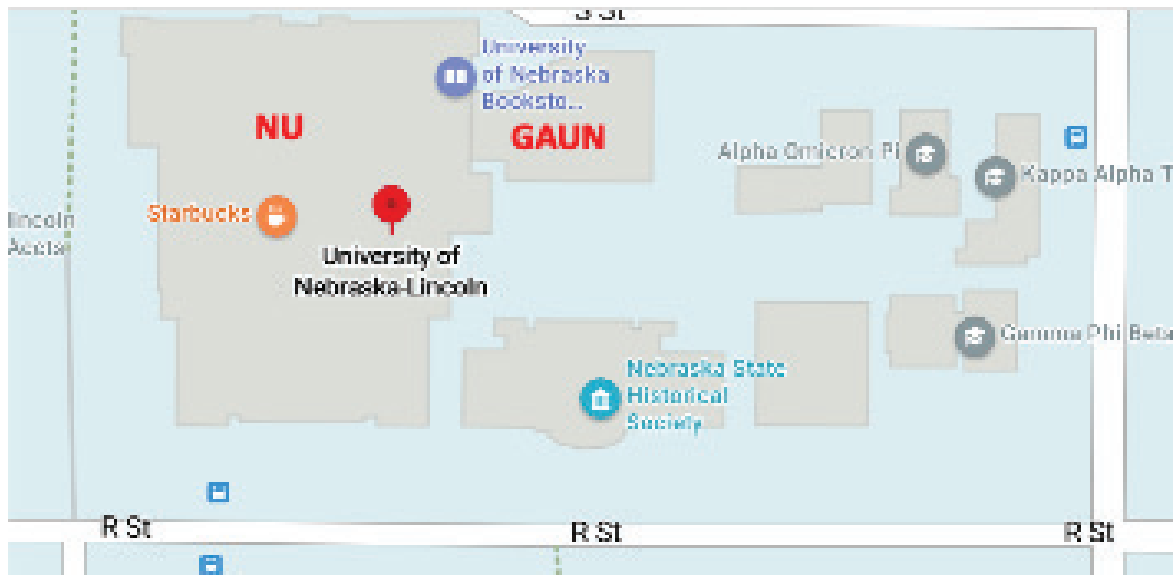
- o Parking is free on Sunday (see map below), Sept, 10, 2023
- o Daily paid parking for Monday, Sept. 11 and Tuesday, Sept. 12. City of Lincoln daily parking rates apply.
- o You are welcome to use a parking garage of your choice.



CONFERENCE BUILDINGS / ROOMS

NU: Nebraska Union

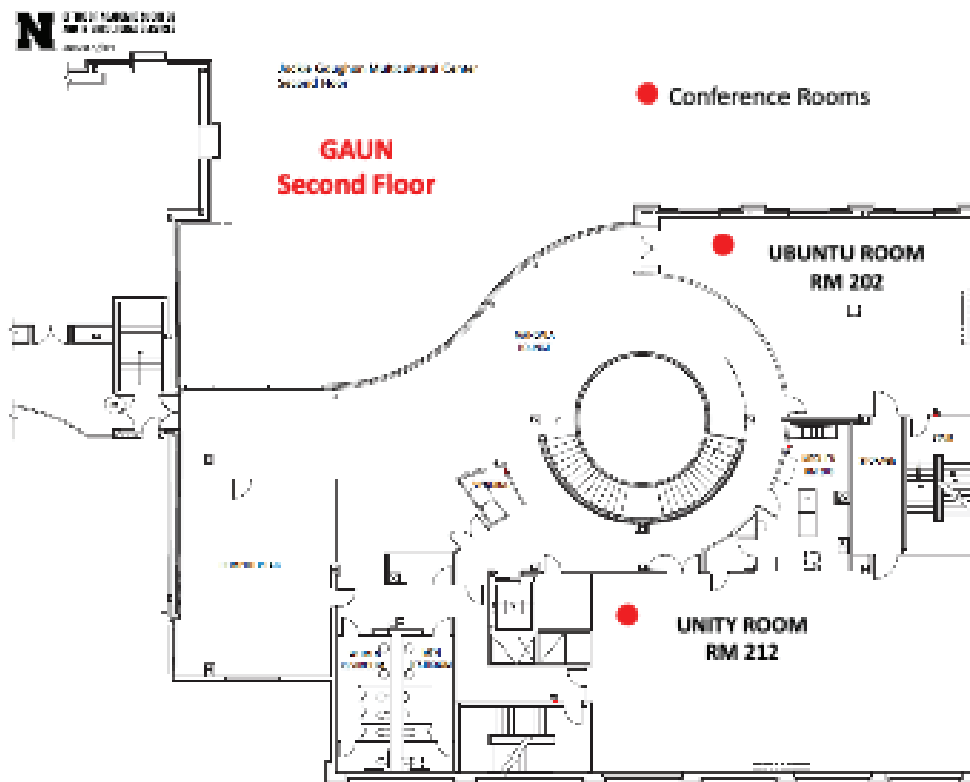
GAUN: Jackie Gaughan Multicultural Center
(connected to the union)



CONFERENCE BUILDINGS / ROOMS

NU: Nebraska Union

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LEGEND: You may note the following characters, which identify the type of session. More Information is available at the end of the program: W: Workshop | P: Panel | T: Tour | C: Comedy Show | M: Maps



ASEE Midwest Section Conference

**SEPTEMBER 10-12, 2023
UNIVERSITY OF NEBRASKA-LINCOLN**



COLLEGE OF ENGINEERING