## NEED TO KNOW MORE?

Carol Turchick
Director, Center for Corporate Engagement
419-772-3552, cce@onu.edu

Lori Goldsmith
Exec. Admin. Assistant College of Engineering
419-772-2371, l-goldsmith@onu.edu

TO REGISTER

**Online**

https://cce.onu.edu/program/engineering-workshop-2024/

**Mail (Using Form Below)**

Lori Goldsmith
ONU T.J. Smull College of Engineering
525 South Main Street
Ada, OH 45810

(Credit Card Payments are ONLY accepted through online registration)

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| **Post Marked by Aug. 26** | ☐ **$170** | ☐ **$160 ONU Alumni** |
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T.J. SMULL COLLEGE OF ENGINEERING

# ENGINEER'S WORKSHOP

# HOT TOPICS IN ENGINEERING FOR THE "NEW ROARING TWENTIES"

Join us for a day of learning, new perspectives, and more. Presenters will share expertise through real world examples and experiences.

OHIO NORTHERN UNIVERSITY

**Date and Time:**
Thursday, October 17, 2024
8:30 A.M. to 3:30 P.M.

**Location:** McIntosh Center

## COURSE OUTLINE/AGENDA

| | |
|---|---|
| 8:00 a.m. | **Registration**<br>McIntosh Center First Floor, ONU |
| 8:20 a.m. | **Welcome**<br>McIntosh Center Ballroom, ONU |
| 8:30 a.m. | **Engineering Ethics** - Dr. John-David Yoder, |
| 9:20 a.m. | ***Break*** |
| 9:30 a.m. | **Emerging Technology in Low Carbon Liquid Fuels for Transportation** - Paul Martin |
| 10:20 a.m. | ***Break*** |
| 10:30 a.m. | **The Forever Chemicals, The impact of PFAS on aquatic life: A Case Study of Biscayne Bay -** Dr. Natalia Soares Quinete |
| 11:20 a.m. | ***Break*** |
| 11:30 a.m. | **Cultural Implications in Engineering Design: Public Perception vs. Actual Effectiveness** - Dr. Todd France |
| 12:30 p.m. | **Lunch (provided)**<br>McIntosh Center Student Dining Hall |
| 1:30 p.m. | **The Age of AI Progress: AI's Sudden Prominence, and its Effects on Academia, Business & Engineering** - Dr. Stephany Coffman-Wolph |
| 2:20 p.m. | ***Break*** |
| 2:30 p.m. | **A Dammed River is a Damned River** - David Heilman & Phillip Tevis |
| 3:20 p.m. | **Closing Comments and Certificates** |

## SPEAKERS AND COURSE DESCRIPTIONS

**Dr. John-David Yoder**, Dean of the College of Engineering, Ohio Northern University. Dean Yoder earned a BS, MS, and PhD from the University of Notre Dame. He has been a professor of mechanical engineering at ONU for 23 years serving 8 years as dean. With experience in industry and entrepreneurial ventures, he has been a faculty fellow at the Jet Propulsion Laboratory; an Invited Professor at INRIA in France; an inventor on eleven patents; Chair of the Ohio Engineering Deans Council; and a director of the national Engineering Deans Council. Dean Yoder will provide a background on engineering ethics, highlighting those principals with scenarios from current areas of technological innovation. Because of his extensive background in both industry and academia, he brings a unique perspective and an engaging style to this important topic.

**Paul Martin, BSME '06**, Senior Director of Renewable Products and Regulatory Assurance, Marathon Petroleum Company. Paul is responsible for Marathon's Ethanol, Biodiesel, Renewable Diesel, Carbon and Compliance Trading activities as well as Coast-to-Coast supply to 200+ terminals to support Marathon's extensive marketing network. Paul is a graduate of Ohio Northern University with a Bachelor of Science in Mechanical Engineering degree and joined Marathon in 2006. He has held positions in Engineering, Supply Chain, Business Development, Petrochemicals, Finance, Marketing and Renewables. Transportation accounts for approximately one-fifth of global carbon dioxide ($CO_2$) emissions. Paul will discuss the evolution of policy, liquid fuels, alternative energy sources and economics, and the role they can play as we drive towards a lower carbon future.

**Dr. Natalia Soares Quinete**, Assistant Professor, Institute of Environment, Freshwater Resources Division, Florida International University. Dr. Quinete as a BSc in Chemical Engineering and a PhD in Environmental Analytical Chemistry from Brazil. Her research focuses on emerging contaminants, such as PFAS and phthalates, and their potential impacts to humans and animals. She will address the emerging contaminants known as "per – and polyfluoroalkyl substances" (PFAS), often referred to as "forever chemicals." These are notable for their chemical and thermal resistance, prolonged persistence, and tendency to accumulate and bioaccumulate across various environmental compartments. From samples taken in the Biscayne Bay, she will provide insights into PFAS concentrations, composition and trends in tap water, surface water and their bioaccumulation in oysters and fisheries, and associated ecological and health risks assessments.

**Dr. Todd France,** Associate Professor of Engineering Education**,** Ohio Northern University. Dr. France directs the Engineering Education Program and assists in leadership of the first-year engineering experience at ONU. He teaches a course on sustainable building design and coordinates service-learning projects with community partners. Reflecting on his experiences with the U.S. Peace Corps, work overseas, and ONU's study abroad program, he enjoys recognizing behavioral differences among cultures. Dr. France will offer a thought-provoking presentation exploring the dissonance between well-intentioned designs and the limitations of these designs due to social norms and cultural values. Examples include the actual benefit realized from engines that automatically turns off the engine while idling; the impact and drawbacks of residential recycling; the value of black window frames; pedestrian safety in a car-culture transportation system; and the total emissions reductions resulting from plug-in vehicles.

**Dr. Stephany Coffman-Wolph**, Assistant Professor of Computer Science, Ohio Northern University. Dr. Stephany received her PhD from Western Michigan University. Previously, she worked at The University of Texas and WVU Institute of Technology. Her research interests include: Artificial Intelligence, Fuzzy Logic, Software Engineering, STEM Education, and Diversity and Inclusion within STEM. She will explore the rapid rise of artificial intelligence (AI) over the past two years, and the reasons behind its sudden prominence. She will examine the impact of AI on academia, both the challenges and the opportunities and will assess the short-term and long-term effects of AI on business and society, providing insights into how various sectors are adapting to this transformative technology. Finally, Dr Stephany will highlight the essential knowledge and skills engineers need to navigate and thrive in the evolving AI landscape.

**David Heilman and Phillip Tevis**, David is a Professional Landscape Architect with twelve years of experience in community-based project design and execution. A graduate of Ball State University, he has worked on 19 dam removal and modification projects. Philip is a Landscape Architect and Environmental Designer with thirty years in ecological restoration. Understanding comprehensive and complex construction projects and water resource management, he has leveraged collaborative partnering, and funding resources to bring projects to life. Together they will discuss why low-head dams no longer serve intended purposes, instead posing safety risks, and a negative impact on ecological systems. They will discuss the processes of low head dam removal and river restoration, the historical context of waterways, why dams are removed, the importance of public input, legislative permitting hurdles, engineering challenges, and the positive impact of dam removals