Workshop: From Ideas to Action: Integrating Entrepreneurial Mindset in FYE Programs

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Kaitlin Mallouk is an Associate Professor of Experiential Engineering Education at Rowan University. Prior to beginning that role, she spent five years an Instructor in the Mechanical Engineering and Experiential Engineering Education Departments at Rowan.

Dr. J. Blake Hylton, Ohio Northern University

Dr. Hylton is an Assistant Professor of Mechanical Engineering and Coordinator of the First-Year Engineering experience for the T.J. Smull College of Engineering at Ohio Northern University. He previously completed his graduate studies in Mechanical Engin

Dr. Jack Bringardner, Colorado School of Mines

Jack Bringardner is a Teaching Associate Professor and Director of Education Innovation at Colorado School of Mines in the Engineering, Design, and Society Department. He teaches the first-year engineering Cornerstone design course. His primary focus is developing curriculum, mentoring students, and engineering education research, particularly for project-based courses, the first-year engineering experience, and student professional skills. He is active in the American Society for Engineering Education and serves on the First-Year Programs Division Executive Board and was the past Webmanager for the ASEE First-Year Programs Division and the First-Year Engineering Experience Conference. He is on the Executive Steering Committee for the Vertically Integrated Projects Consortium. Prior to working at Colorado School of Mines, he was the Assistant Dean for Academics and taught Introduction to Engineering and Design at the NYU Tandon School of Engineering.

Dr. Krista M Kecskemety, The Ohio State University

Krista Kecskemety is an Associate Professor in the Department of Engineering Education at The Ohio State University and the co-Director of the Fundamentals of Engineering Programs. Krista received her B.S. in Aerospace Engineering at The Ohio State University in 2006 and received her M.S. from Ohio State in 2007. In 2012, Krista completed her Ph.D. in Aerospace Engineering at Ohio State. Her engineering education research interests include investigating first-year engineering student experiences, faculty experiences, and the research to practice cycle within first-year engineering.

Cassie Wallwey, Virginia Polytechnic Institute and State University

Dr. Cassie Wallwey is a Collegiate Assistant Professor in the Department of Engineering Education at Virginia Tech. Her research interests center on student-centered and inclusive learning practices and principles including student engagement in learning, feedback and assessment, self-regulation of learning, and student motivation. Cassie got her PhD in Engineering Education from Ohio State University and her MS and BS in Biomedical Engineering from Wright State University.

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FROM IDEAS TO ACTION: INTEGRATING ENTREPRENEURIAL MINDSET IN FYE PROGRAMS

Facilitators: Kaitlin Mallouk, Blake Hylton

Workshop Description

Faculty in first-year engineering (FYE) programs often seek to enhance student engagement and broaden engineering mindsets through hands-on, value-driven activities. However, identifying appropriate intervention points and enacting lasting curricular change can be challenging. This interactive session guides participants from insight to implementation by combining two key areas: (1) identifying where the entrepreneurial mindset (EM) can be embedded in existing FYE courses, and (2) developing a strategic plan to support adoption and stakeholder buy-in.

Drawing on outcomes from the EMIFY project and the *Change Maker's Toolkit[1]*, this workshop walks participants through identifying EM opportunities using a community-developed framework (Figure 1) and design heuristic, then transitions to change planning activities that build stakeholder support and implementation readiness.
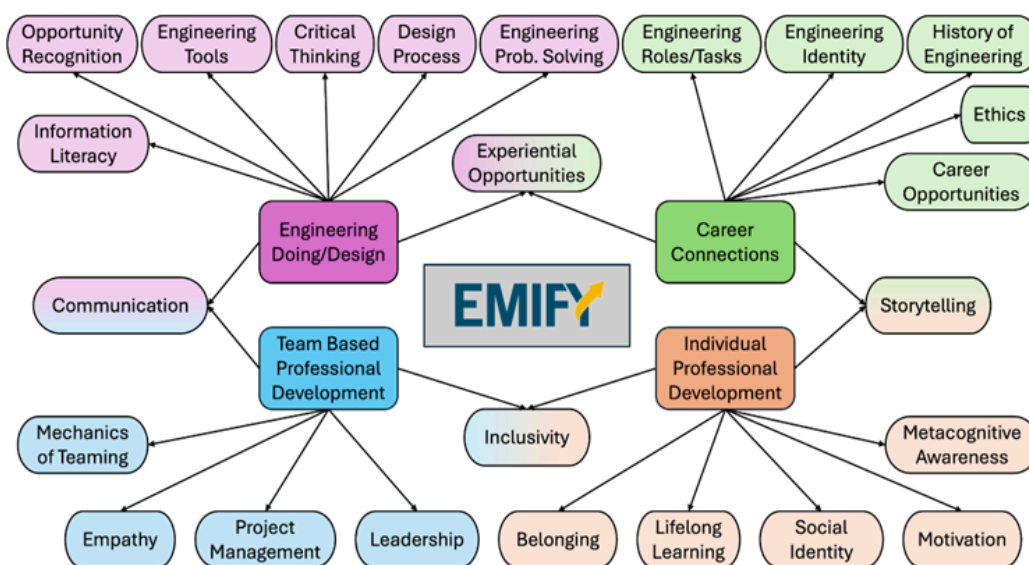

Figure 1. Community-developed framework for EM in First-Year Engineering Programs.

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[1] J. M. Williams, *Making Changes in STEM Education: The Change Maker's Toolkit*, 1st ed. Boca Raton: CRC Press, 2023.

Learning Objectives

By the end of this session, participants will be able to:

- Recognize how the entrepreneurial mindset aligns with their FYE program goals.
- Use a design heuristic to identify and evaluate opportunities for EM integration.
- Analyze stakeholder needs and identify solutions to anticipated roadblocks.

Target Audience

This session is for instructors, coordinators, and academic leaders engaged in first-year engineering education who are motivated to improve student outcomes by integrating EM and leading change in their local context.

Proposed Agenda (90 Minutes)

Time	Activity
0–15 Overview of entrepreneurial mindset (KEEN 3Cs), EMIFY Framework (Figure 1), and change challenges in FYE	**Introduction**
15–30 Explore and identify potential EM intervention points in participants' current courses using the EMIFY framework	**Card Sort & EM Opportunity Identification**
30–50 Apply the EMIFY heuristic to evaluate a selected classroom activity and identify enhancements	**Heuristic Tool & Reflection**
50–70 Apply the Habits of Mind rubric to further identify enhancements	**Activity Evaluation**

60–80	Stakeholder Strategy & Solution Storming
Anticipate stakeholder needs; work in small groups to generate solutions to common barriers	
80–90	Group Reflection and Action Planning
Wrap up with shared insights and next steps for implementation	

Participant Takeaways

- A targeted idea for embedding EM in a first-year activity or module
- Several tools that can be applied to any activity to facilitate EM integration
- A strategy to address stakeholder concerns

AI Acknowledgement

This proposal was originally written as two separate proposals by the workshop presenters with no support from generative AI. ChatGPT was used to combine the two original proposals into a single proposal and the resulting description was edited for clarity and accuracy.