

CARNEGIE MELLON UNIVERSITY

BME 2025 SPRING SEMINAR SERIES

Designing the Engineer: How First-Year Experiences Influence Engineering Identity and Major Selection



PRESENTED BY

Kathleen Bieryla, Ph.D.

Associate Professor of Biomedical and Mechanical Engineering
Shiley School of Engineering
University of Portland

SCHEDULE

Doherty Hall (DH) 2315

Tuesday, April 1, 2025
(11:00-12:00 PM)

The first year of the engineering curriculum is an ideal time to shape students' perception of engineering, as students are developing their view of the engineer's role and responsibilities, and creating their engineering identity. This seminar will explore research on engineering experiences in the first-year. The first study will examine how a service-learning project in the first year influences a student's perception of an engineer's role in solving sociotechnical issues. The second study will examine the impact of a design sprint early in a first-year engineering course on the student's engineering identity and their entrepreneurial mindset. The final study will examine factors that influence student's engineering major selection and if a first-year engineering course changes those factors. Together, these studies offer insights into how first-year experiences can shape a student's engineering trajectory, emphasizing the importance of intentional curricular design in fostering their curiosity and professional growth.