



MATERIALS SCIENCE and ENGINEERING SEMINAR



Dr. Katie Herbert

Center for Plastics Innovation

University of Delaware

Building Connections: Polymers, People, and Purpose

Scientific careers often evolve in unexpected directions. In this seminar, Dr. Katie Herbert, Director of Education, Outreach, and Research Engagement for the Center for Plastics Innovation (CPI), will share her journey from polymer researcher to scientific leader, highlighting key experiences that shaped her career. The seminar will include an overview of her graduate research on the synthesis and characterization of interlocked macromolecules and dynamic covalent polymer networks, followed by a discussion of her postdoctoral work on responsive liquid crystalline elastomers as dynamic substrates for cell growth and their potential applications in tissue engineering. The lecture will conclude with a description of her current role in CPI, including an overview of CPI's mission to transform plastics manufacturing and expand workforce development and community engagement. Throughout the talk, she will reflect on the opportunities, challenges, and transferable skills that enabled her transition from the laboratory to leadership.

BIOGRAPHY

Originally from Wayland, Michigan, Dr. Katie Herbert earned both her B.S. and M.S. degrees in Chemistry from Central Michigan University. She received her Ph.D. in Molecular Engineering from the University of Chicago in 2019, where her research focused on the design of tunable, responsive polymer systems enabled by dynamic covalent chemistry and mechanically interlocked molecular architectures. She then joined the University of Colorado Boulder as a Postdoctoral Associate, investigating liquid crystalline polymer networks as stimuli-responsive substrates for biological applications and tissue engineering. In March 2022, Dr. Herbert joined the Center for Plastics Innovation (CPI) at the University of Delaware as Scientific Program Manager and was promoted to Director of Education, Outreach, and Research Engagement in 2025. In her current role, she leads initiatives that expand undergraduate research experiences, enhance graduate and postdoctoral professional development, and foster collaborative partnerships across academia, industry, and the broader sustainability community.

MSEG SEMINAR

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