

Title: Water-Soluble Polymers: From Foundational Science to Finished Products

Date and Time: 2:00 PM – 6:00 PM on Monday August 18

Description: Water-soluble polymers play a vital role across diverse industries, including food and beverage, personal care, and household care. The effective design of these polymers necessitates a comprehensive understanding of their molecular structure, synthesis methods, characterization, and properties. This session will explore the foundational science underpinning water-soluble polymer development, the translation of this knowledge into practical polymer design and industrial applications, and the integration of these materials into consumer products.

Format:

- Four presentations from invited speakers that touch upon four themes:
 - **Foundational Science of Water-Soluble Polymer Development:** Examine the intricate relationship between polymer structure, properties, and function, aimed at accelerating the design and formulation of water-soluble polymers. Key topics include synthesis approaches, polymer characterization, and performance in aqueous systems.
 - Confirmed Speaker: **Prof. Matthew (Matt) Helgeson** (University of California, Santa Barbara)
 - **Translating Foundational Science to Water-Soluble Polymer Design:** With the rapid expansion of development tools for water-soluble polymers, including high-throughput synthesis and machine learning modeling, this presentation will discuss the integration of physics-based and AI-driven models with experimental data. These approaches are essential for accelerating the discovery and optimization of new materials across the various sectors.
 - Confirmed Speaker: **Prof. Adam Gormley** (Rutgers University)
 - **Industrialization of Water-Soluble Polymers:** Explore innovative strategies and frameworks designed to enhance the performance of water-soluble polymers while ensuring robust and resilient supply chains. It will highlight advancements in the scale-up and manufacturing process considering green chemistry principles during development and industrialization.
 - Confirmed Speaker: **Dr. Daniel Miller** (Dow Chemical)
 - **Water-Soluble Polymers in Consumer Products:** Water-soluble polymers are used in many industries including food and beverage, personal care, and

household care. This talk will describe how water-soluble polymers are formulated and integrated into consumer products and highlight the benefits they provide to consumers. Emphasizing the critical balance between functionality and environmental impact, this presentation will discuss also approaches to create high-performance materials that meet industry demands while minimizing ecological footprints across various applications.

- Confirmed Speaker: **Dr. Ramon Campos** (Procter & Gamble)
- Panel discussion with the invited speakers above and additional experts:
 - **Dr. David Berkowitz** (National Science Foundation)
 - **Dr. Vivek Prabhu** (National Institutes of Standards and Technology)
- Combined poster session and reception, featuring digital poster screens