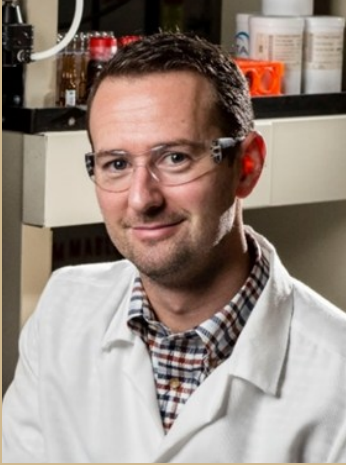


SPRING 2026

# MSE SPECIAL SEMINAR

MONDAY, MAY 4TH | 11:30– 12:30PM

ARMS B061



## SIMON ROGERS

James W. Westwater  
Professorial Scholar  
and Professor

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**Abstract:** Rheological studies of real-world behaviors use idealized protocols to elucidate the underlying constitutive relations and are typically based on measurements of the stress response to strains or strain rates or vice versa. Strains and rates can therefore be thought of as rheological “atoms”, from which any complicated protocol can be built. It is commonly observed, however, that when stresses are removed, some of the deformation is recovered. Strain is therefore a composite parameter and can be decomposed into recoverable and unrecoverable components by iteratively performing constrained recovery steps during any experiment. By acknowledging strain’s composite nature, we not only get more information about how materials respond to forces that can be used to construct more accurate constitutive relations, we must also face the limitations of our current nomenclature and some of the assumptions that underly modern rheology. In this presentation, case studies are presented to highlight the benefits of forming rheological investigations around a desire to understand the recoverable and unrecoverable behaviors of soft materials. An initial focus will be on yield stress fluids, where recovery rheology has provided answers to long-standing problems, and has led to the formation of new constitutive relations for viscoelastic and yield stress fluids. Connections between bulk rheology and structural measures from neutron and X-ray scattering will be highlighted also.

**Biography:** Simon A. Rogers is a James W. Westwater Professorial Scholar and Professor in the Department of Chemical and Biomolecular Engineering at the University of Illinois at Urbana-Champaign. Dr. Rogers uses experimental and computational tools to understand and model advanced colloidal, polymeric, and self-assembled materials. He joined the department in 2015. He received his BSc in 2001, BSc (Hons) in 2002; and his PhD from Victoria University of Wellington in New Zealand in 2011. He completed his postdoctoral research at the Foundation for Research and Technology in Crete, the Jülich Research Center in Germany, and the Center for Neutron Research at the University of Delaware. He has received the ACS PRF Doctoral New Investigator grant, the NSF CAREER award, the School of Chemical Sciences Teaching Award from UIUC, and was the 2022 recipient of the Arthur B. Metzner Early Career Award from the Society of Rheology. He currently serves as editor-in-chief of *Rheologica Acta*, the journal of the European Society of Rheology.



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