



The NSF-CREST Center for Cellular and Biomolecular Machines uses an interdisciplinary approach combining physical, biological and engineering methods to understand and control the functioning of multi-scale assemblies of biomolecules and cells, and to design and develop novel bio-inspired functioning machines ranging from designer cells and tissue to diagnostic and therapeutic devices. The center also focuses on enhancing biophysics, biochemistry and bioengineering graduate and undergraduate education; leading STEM outreach activities in the Merced area for teachers, students, and the community; and broadening participation in STEM fields.

Hosted by the NSF-CREST Center for Cellular and Biomolecular Machines
at the University of California, Merced

Science for Humanity Series

Prof. Daniel Beller

“Mesophases: The Physics of the In Between, All Around Us”

REGISTER

Via Zoom

**Wednesday, May 12, 2021
10:30 - 11:30 am Pacific**



Prof. Daniel Beller

Join us for an interactive session.

All are welcome. Questions will be invited from the audience.

The [Science for Humanity Series](#) invites general audiences to attend engaging & societally relevant scientific sessions.

Physics studies matter at enormous scales (such as galactic superclusters) and tiny scales (subatomic particles)—but also the in-between scale of everyday human experience. My field of research, soft matter physics, explores materials that are in-between in a different sense as well: They don't fit neatly into the traditional phases of matter (solid, liquid, gas, plasma) but instead behave partly like a solid and partly like a liquid, which gives them some unique properties. Examples of such "mesophases" are all around us, such as gels, foams, and granular materials like sand. The type of soft matter I'll discuss in this talk is *liquid crystals*, the substances that make liquid crystal displays (LCDs) possible, but which are also present in some places you might not expect. I'll describe some new ways in which scientists, including my research group, are seeking to use liquid crystals in technology. We will also explore how a new twist on liquid crystals physics is helping to explain complex, collective motions in cellular-scale biology, a rapidly advancing research area in which UC Merced is at the forefront.

Daniel Beller, Ph.D., is an Assistant Professor in the Department of Physics at the University of California, Merced. He and his research group study soft matter and biological physics using theoretical modeling and computer simulations, focusing on questions related to order and disorder, material deformation, and evolution. He obtained his bachelor's degree in Physics and Mathematics at Brandeis University, and his Ph.D. in Physics at the University of Pennsylvania. He joined the Physics faculty at UC Merced in 2018 after postdoctoral research positions at Harvard and Brown Universities. He may or may not be joined in this Zoom presentation by his frequent assistant Eneko Beller, who is a cat.

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