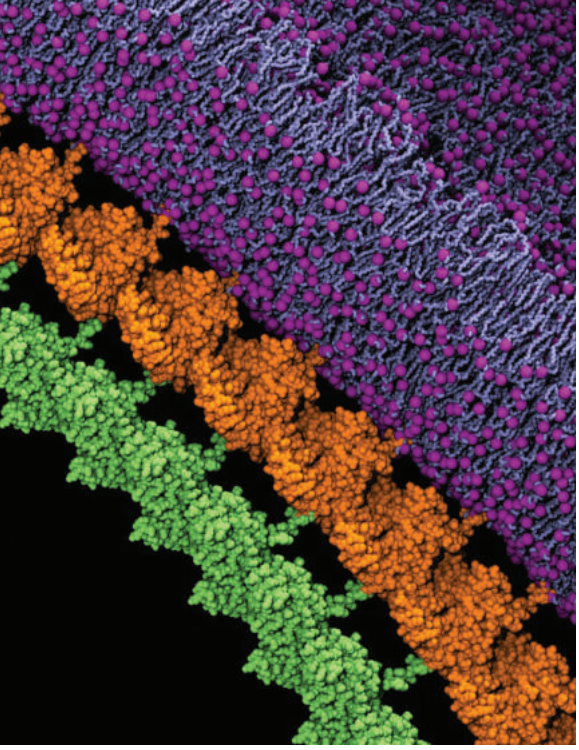

NSF-CREST Center for Cellular and Biomolecular Machines

UNIVERSITY OF CALIFORNIA MERCED

The CREST Center for Cellular and Biomolecular Machines (CCBM) at the University of California, Merced 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.

GRADUATE AND UNDERGRADUATE FELLOWS OF THE CENTER WILL BE ABLE TO TAKE ADVANTAGE OF :

- an interdisciplinary graduate training emphasis in Interdisciplinary Biophysical Sciences, Biomaterials and Biotechnology (IB3)
- training modules in nanobio fabrication, imaging and spectroscopy, and computation and modeling
- participation in all center activities including networking and professional development opportunities, center meetings and events, career skills workshops and more
- entrepreneurship and K-12 school outreach opportunities
- generous academic year and summer stipends, travel fellowships and more

CCBM
NSF-CREST
CENTER FOR CELLULAR AND BIOMOLECULAR MACHINES

THRUST 1: PROTEIN METAMORPHOSIS AND RESPONSIVE NANODEVICES

Phase II research focuses on the emerging theme of protein metamorphosis as mechanism to enable natural and synthetic controllable biological nanodevices, organized in two broad areas: the functional roles of gradually morphing proteins; and engineering of control systems of the assembly-disassembly of biological macromolecular assemblies.

THRUST 2: ADAPTIVE AND RESPONSIVE MESOSCALE ASSEMBLIES

In Phase II, the focus is to understand the mechanisms that enable assemblies to function collectively in adaptive and responsive ways as well as exploiting them for applications.

THRUST 3: ADAPTIVE CELLULAR COMMUNICATION

Phase II will examine the impact of cell-cell and cell-matrix mechanical interactions on collective cell motility, patterning and the emergence of function, combining experimental and modeling approaches.

University of California, Merced | 5200 N. Lake Road | Merced, CA 95343

ccbm.ucmerced.edu

CONTACT

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UNIVERSITY OF CALIFORNIA
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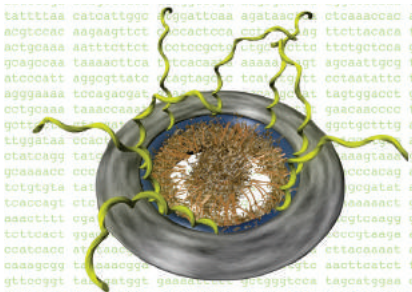

Faculty

CENTER FOR CELLULAR AND BIOMOLECULAR MACHINES

ROBERTO C. ANDRESEN EGUILUZ, *materials science and engineering*
cell and extracellular matrix mechanobiology, bioadhesion, biolubrication

RYAN BAXTER, *chemistry*
single electron transfers, electro-responsive organic materials, synthetic methods and real-time reaction monitoring

MIKE COLVIN, *chemistry and chemical biology*
models of biological processes and molecular dynamics of disordered proteins

KINJAL DASBISWAS, *physics*
theoretical biological physics, cell and tissue mechanics, biomaterials

EVA DE ALBA, *bioengineering*
protein engineering, structure, function and assembly; specific focus on inflammation and cell death; NMR, electron microscopy, optical traps

XUECAI GE, *molecular and cell biology*
neurodevelopment, cell signaling, primary cilia, developmental disorders

SAYANTANI GHOSH, *physics*
experimental condensed matter physics, magnetism, metamaterials, nanoscience and quantum systems

ARVIND GOPINATH, *mechanical engineering*
fluid dynamics, polymers and active soft matter – theory and simulations

AJAY GOPINATHAN, *(co-director), physics*
theoretical biophysics, biopolymers, transport and collective behavior

AARON D. HERNDAY, *molecular cell biology*
molecular genetics, transcriptional networks, microbial epigenetics, genetic engineering, synthetic biology

LINDA HIRST, *physics*
experimental soft matter physics and biophysics

BIN LIU, *physics*
bacterial motility in complex media and single-cell behavior in biological processes

ANDY LIWANG, *chemistry and chemical biology*
structural biology of circadian clock proteins and nucleic acids, NMR spectroscopy

PATRICIA LIWANG, *molecular cell biology*
HIV inhibition, protein-protein interactions, anti-inflammatory strategies, NMR, silk fibroin drug delivery

KARA E. MCCLOSKEY, *materials science and engineering*
stem cell and tissue engineering for regenerative medicine applications

ANDREA MERG, *chemistry and biochemistry*
biomolecular self-assembly, nanomaterial design and synthesis, nanotechnology, biomaterials

KEVIN MITCHELL, *physics*
theoretical nonlinear dynamics, chaotic transport, atomic and molecular physics, fluids

VICTOR MUÑOZ, *(co-director), bioengineering*
protein folding, structure prediction and design, protein aggregation

TOMAS RUBE, *bioengineering*
computational biology, regulatory genomics, biophysics

JOEL A. SPENCER, *bioengineering*
biomedical optics, intravital imaging and sensing, tissue regeneration and transplantation

ANAND BALA SUBRAMANIAM, *bioengineering*
experimental biophysics, cellular reconstitution, experimental synthetic biology

SUZANNE SINDI, *applied mathematics*
mathematical biology, dynamical systems, computational biology

SHAHAR SUKENIK, *chemistry and chemical biology*
experimental biophysics; protein structure, function, and interaction in the cellular environment

MAXIME THEILLARD, *applied mathematics*
computational biomechanic, high performance computing, continuum modeling

MICHAEL C. THOMPSON, *chemistry*
structural biology, biophysics, protein dynamics, enzymology

FRED W WOLF, *molecular and cell biology*
neurobiology of behavior, addiction, protein translation

STEPHANIE WOO, *molecular cell biology*
developmental biology, morphogenesis, cytoskeletal dynamics, gut development, epithelial development

TAO YE, *chemistry and chemical biology*
biomolecular science and engineering, nanotechnology

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