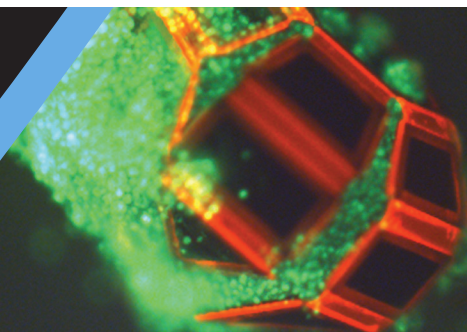


Johns Hopkins Chemical and Biomolecular Engineering



Whether educating the next generation of engineering leaders, developing innovative drug delivery systems, or creating earth-friendly biofuels, we are making an impact.



22

Full-time,
tenure-track faculty



250+

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Degrees offered:

- Master of Science
- Doctorate
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- Postdoctoral opportunities



Five dedicated research areas:

- Biomolecular engineering and synthetic biology
- Engineering for precision medicine
- Materials for energy, catalysis, and separations
- Modeling in the Big Data era
- Self-assembly and soft matter

Application Deadlines



- PhD admissions: apply by December 15, 2023
- Master's admissions: early deadline December 15, 2023; apply by May 1, 2024




Affiliated research institutions:

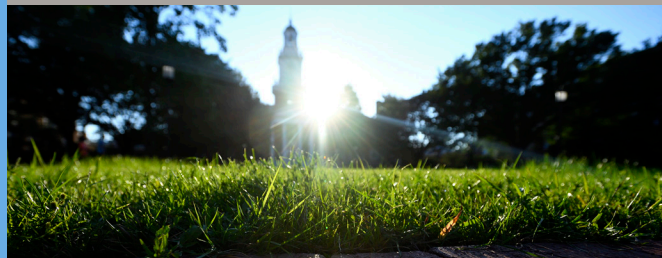
- Ralph O'Connor Sustainable Energy Institute
- Advanced Mammalian Biomanufacturing Innovation Center
- Institute for NanoBioTechnology
- Hopkins Extreme Materials Institute
- Center for Nanomedicine
- Materials Characterization and Processing
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"ChemBE at JHU is tackling our most pressing global challenges in sustainability, climate, and health. Join us in pushing the boundaries of engineering knowledge from the molecular to the systems level."



Jennifer H. Elisseeff, PhD

Recent faculty awards:

MIT Technology Review's 35 Innovators Under 35, Vannevar Bush Fellowship, Beckman Young Investigator Award, Packard Fellowship, AIChE award for contribution to ChemBE literature, world's most cited researchers list, and election to the National Academy of Sciences

Recent student awards:

Siebel Scholarship, Merck Innovation Cup (first place), Taste Tape named one of TIME's best inventions, Rising Star Asia workshop featured speaker

Faculty

Jennifer Elisseeff, *Interim Head, PhD Harvard-MIT Division of Health Sciences and Technology*

Research Interests: Immunoengineering, Translational Cell and Tissue

Michael J. Betenbaugh, *Professor, PhD University of Delaware*

Research Interests: Biopharmaceuticals and Bioenergy, Biomanufacturing, Systems Biotechnology, Cell Line Optimization, Green Energy, 'Omics, and Metabolic Engineering of Mammalian and Microalgae

Michael A. Bevan, *Professor, PhD Carnegie Mellon University*

Research Interests: Colloidal Interactions, Measurement, Modeling, and Manipulation of Nano- and Micro- Particle Interactions, Dynamics, and Assembly

Brandon Bukowski, *Assistant Professor, PhD Purdue University*

Research Interests: Computational Catalysis, Kinetic Modeling, Molecular Simulations, Diffusion, Separations, Sustainability

Paulette Clancy, *Edward J. Schaefer Professor, PhD Oxford University*

Research Interests: Computational materials processing, Atomic- and molecular-scale modeling of semiconductor materials, Advanced materials processing and nucleation

Honggang Cui, *Professor, PhD University of Delaware*

Research Interests: Soft Matter, Molecular Engineering of Drugs and Imaging Agents, Supramolecular Imaging, Drug Delivery, and Biomaterials

David Gracias, *Professor, PhD University of California and Berkeley*

Research Interests: Smart Materials, Surface Science, 3D Nano, Micro Devices for Tracking, Fluidic Self-Assembly and Integration, Sum Frequency Spectroscopy

Jeffrey Gray, *Professor, PhD University of Texas at Austin*

Research Interests: Deep Learning, Protein Structure Prediction and Design, Protein-Protein Docking, Antibody Engineering, Glycoproteins, and Membrane Proteins

Sangmo Jeong, *Assistant Professor, PhD Stanford University*

Research Interests: Metabolic Dysfunctions, Extracellular vesicles, Biosensors

Yannis Kevrekidis, *Bloomberg Distinguished Professor, PhD University of Minnesota*

Research Interests: Algorithms, Data, and the Computer-Assisted Modeling of Complex Dynamical Systems

Efie Kokkoli, *Professor, PhD University of Illinois at Urbana-Champaign*

Research Interests: Targeted Drug and Gene Delivery, DNA Nanotechnology, Biopolymers and Responsive Hydrogels, Tissue Engineering/Recent Awards

Konstantinos Konstantopoulos, *William H. Schwarz Professor, PhD Rice University*

Research Interests: Microfluidics, Nanoscale mechanics, Quantitative Modeling, Receptor Biochemistry, Functional Genomics

Rong Li, *Bloomberg Distinguished Professor, PhD University of California, San Francisco*

Research Interests: Cellular Dynamics in Space, Time, and Adaptation

Yayuan Liu, *Assistant Professor, PhD Stanford University*

Research Interests: Electrochemical Engineering for Energy and Environmental Sustainability, Materials Synthesis, Advanced Materials Characterization

Marc Ostermeier, *Professor, PhD University of Texas at Austin*

Research Interests: Protein Engineering, Protein Evolution, Synthetic Biology

Rebecca Schulman, *Associate Professor and Kent Gordon Croft Investment Management Scholar, PhD California Institute of Technology*

Research Interests: DNA Self-Assembly, Smart Biomaterials, Synthetic Biology

Stavroula Sofou, *Professor, PhD Columbia University*

Research Interests: Heterogeneous Lipid Bilayers, Drug Delivery/ Nanobiomaterials, Targeted Chemotherapy, Alpha-Particle Therapy

Jamie Spangler, *Assistant Professor and William R. Brody Faculty Scholar, PhD Massachusetts Institute of Technology*

Research Interests: Structural and Molecular Immunology, Protein Engineering, Therapeutic Antibody Discovery and Design, Targeted Drug Development

Michael Tsapatsis, *Bloomberg Distinguished Professor, PhD California Institute of Technology*

Research Interests: Reaction Engineering, Separation and Purification Processes, Nano-materials, Zeolites, Metal Organic Frameworks

Thi Vo, *Assistant Professor, PhD Columbia University*

Research Interests: Colloidal and Nanoparticle Self-Assembly, Supramolecular Engineering, Polymer Physics, Molecular Simulations, Computational Materials Design

Chao Wang, *Associate Professor, PhD Brown University*

Research Interests: Photochemical Solar Cells, Green Engineering, High-Performance Catalysts

Denis Wirtz, *Vice Provost for Research and Theophilus Halley Smoot Professor, PhD Stanford University*

Research Interests: 3D Cell Motility, Aging and Cancer, Tumor Microenvironment, Cancer Metastasis, Digital Pathology

Teaching Faculty

Eric Husmann

John Rajadayakaran Edison

Lilian Lam Josephson

Sakul Ratanalert

Nagma Zerín