

Summer Research in Chemistry

The Bucknell Chemistry Department's Summer Research Program supports students performing full-time research with a faculty mentor over the summer. Awards will be made for up to 10 weeks of research. Because these are full-time positions, award recipients may not take summer school courses during the research period or accept other employment exceeding ten hours per week. Award recipients will receive a fellowship of \$450 per week and may choose to live in on-campus summer housing (considered a taxable benefit). All participants will be required to write a brief report at the end of the summer and will be strongly encouraged to present their work at the Kalman Research Symposium, Susquehanna Valley Undergraduate Research Symposium, or another conference.

How to Apply

If you are new to research, you should meet with the faculty member(s) with whom you are interested in working to discuss research opportunities and position availability before you apply. All applicants must complete the online application form linked on the Bucknell Summer Research Application Portal by Tuesday, February 28, 2023 to be considered for an award. Awardees will be notified in mid-March and awards must be accepted by mid-April.

For more information about the program or the application process, please contact Charlie Guttendorf, Academic Assistant, Department of Chemistry, 203 Rooke Chemistry Building, cg029@bucknell.edu, (570) 577-3258.

Faculty Mentors for Summer 2023

Hasan Arslan, Organic and Polymer Chemistry. Supramolecular chemistry, macrocycle synthesis and host-guest interactions, molecular switches; covalent organic frameworks, conjugated polymers and redox chemistry of organic materials.

Karen J. Castle, Physical Chemistry. Laser spectroscopy, vibrational energy transfer, atmospheric chemistry, space physics, planetary climate models.

Douglas B. Collins, Analytical and Environmental Chemistry. Multiphase atmospheric chemistry; indoor and outdoor air quality; ecology and environmental chemistry; ambient ionization mass spectrometry.

Dabrina Dutcher, Analytical Chemistry and Chemical Engineering. Instrumentation and techniques for measuring the physicochemical properties of atmospheric and health related aerosols.

Thomas D. Green, Physical Chemistry. Spectroscopy of nanomaterials, structure and properties of self-assembled nanostructures, nanophotonics and field-enhanced spectroscopy.

William D. Kerber, Inorganic Chemistry. Redox chemistry of iron in natural waters; speciation of Fe(III) complexes; photochemical oxidation of carboxylates and phenols by iron(III).

Michael R. Krout, Organic Chemistry. Organic synthesis; reaction method development; catalysis; natural products.

Yan Choi Lam, Physical Chemistry. Computational and theoretical chemistry: inorganic catalysis, electrochemical processes.

Molly M. McGuire, Analytical and Environmental Chemistry. Chemistry at the mineral-water interface; analysis of colloids in natural waters; atomic force microscopy and spectroscopic studies of geochemical systems.

David Rovnyak, Biophysical Chemistry. Application of magnetic resonance techniques to biomarker detection and guest-host complexes; development of NMR sampling methodology.

Brian J. Smith, Materials Chemistry. Self-assembly framework materials; porous polymers; water purification; pharmaceutical crystallization.

Sarah J. Smith, Biochemistry. Bioinorganic chemistry; protein-protein interactions; peptide therapeutics; development of bioanalytical devices.

Robert A. Stockland, Jr., Organic and Inorganic Chemistry. Design and synthesis of transition metal complexes with useful catalytic properties

Timothy G. Strein, Analytical Chemistry. Interests: Capillary electrophoresis (CE), including in-capillary reactions and chiral separations with bile salts; bile micelle structure, dynamics and energetics

Rebecca L. Switzer, Biochemistry. DNA methylation; enzyme mechanisms; enzyme regulation; enzyme inhibition; drug discovery.