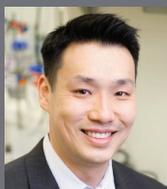


Analytical Chemistry

Department of Chemistry
University of Illinois at Urbana-Champaign

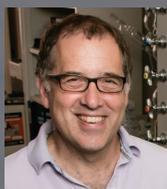
For more information, visit
chemistry.illinois.edu



Jefferson Chan

Development of in vitro and cell-based assays to quantify critical biomarkers for aging, neurological disorders, and cancer; discovery of molecular changes in the tissue microenvironment during disease progression through synthesis of analyte-responsive imaging agents; design of responsive platforms integrated with molecular beacons for on-demand and site-selective drug delivery

chemistry.illinois.edu/jeffchan



Andrew A. Gewirth

Alternative energy: batteries; fuel cells; solar; interfacial electrochemistry; spectroscopy; structure

chemistry.illinois.edu/agewirth



Hee-Sun Han

Development of microfluidics & imaging technologies for systems biology; modeling the ensemble behavior of complex biological systems; imaging-based spatial omics; microfluidics-based high resolution assays; bottom-up construction of synthetic cells

chemistry.illinois.edu/hshan



Prashant K. Jain

Plasmonics; near-field manipulation of photophysics and photochemistry; super-resolution imaging of active sites in heterogeneous catalysis; artificial photosynthesis; imaging phase transformations in single nanocrystals

chemistry.illinois.edu/jain



Deborah E. Leckband

Recognition at interfaces; biomolecular force transduction; membrane protein interactions; fluorescence imaging; simulations; nanoscale properties of biomaterial interfaces

chemistry.illinois.edu/leckband

Analytical Chemistry

Other faculty with interests in Analytical Chemistry

Rohit Bhargava (faculty affiliate)
Infrared and Raman spectroscopy; chemical imaging; cancer pathology; 3D printing for tumor models

Dana D. Dlott (emeritus faculty)
Laser spectroscopy under extreme conditions

Mary L. Kraft (faculty affiliate)
Biomembrane composition imaging

Shuming Nie
Nanotechnology and nanomedicine; ultrasensitive in vitro diagnostics; wearable optoelectronic devices

Elena V. Romanova (research faculty)
Mass spectrometry-based discovery and characterization of endogenously expressed peptides in tissues and individual cells; functional implications

Stanislav Rubakhin (research faculty)
Microbioanalytical chemistry; mass spectrometry imaging; single cell and single organelle sample preparation and analysis

Stephen G. Sligar (emeritus faculty)
Nanobiotechnology and drug discovery

Huimin Zhao (faculty affiliate)
Synthetic biology; AI/ML; automation; protein engineering; metabolic engineering; natural product biosynthesis; biocatalysis



Catherine J. Murphy

Inorganic nanomaterials for chemical sensing and cellular imaging; bioanalytical studies of the “protein corona” around nanoparticles; photothermal therapy with targeted nanoparticles

chemistry.illinois.edu/murphycj



Joaquín Rodríguez-López

Nanoelectrochemistry; electrochemical imaging of batteries, electrocatalysts, and interfaces; redox polymers; ultrathin electrodes; electrochemical microfluidics; electrochemical simulation

chemistry.illinois.edu/joaquinqr



Mei Shen

Nano-bioanalytical chemistry; high spatiotemporal single-cell signaling; neurochemistry

chemistry.illinois.edu/mshen233



Jonathan V. Sweedler

Analytical neurochemistry, including developing of new tools for metabolomics; peptidomics and single-cell characterization; increasing our understanding of cell signaling in the brain

chemistry.illinois.edu/jsweedle