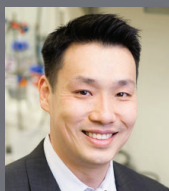


# Analytical Chemistry

Department of Chemistry  
University of Illinois at Urbana-Champaign

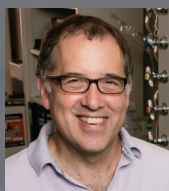
For more information, visit  
[chemistry.illinois.edu](http://chemistry.illinois.edu)



**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](http://chemistry.illinois.edu/jeffchan)



**Andrew A. Gewirth**

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

[chemistry.illinois.edu/agewirth](http://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](http://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](http://chemistry.illinois.edu/jain)



**Deborah E. Leckband**

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

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UNIVERSITY OF  
**ILLINOIS**  
URBANA-CHAMPAIGN

*also see reverse side*

rev. 10/2022

# 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

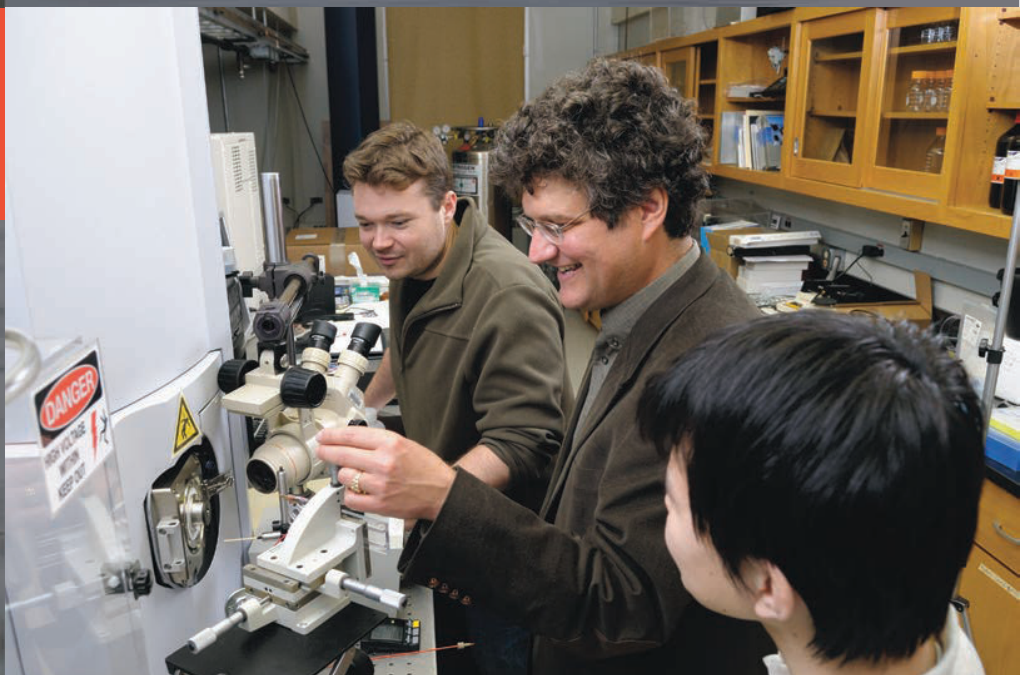
Shuming Nie  
Nanotechnology and nanomedicine; ultrasensitive in vitro diagnostics; wearable optoelectronic devices

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](http://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](http://chemistry.illinois.edu/joaquinqr)



**Mei Shen**

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

[chemistry.illinois.edu/mshen233](http://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](http://chemistry.illinois.edu/jsweedle)