

CHEMISTRY

Daniel Akins: synthesis, electrochemistry, and spectroscopy of nanoparticle composites for photonics and imaging
Valeria Balogh-Nair (BC): synthesis and optical properties of nanocomposites for biomedical applications
Teresa Bandosz: adsorption in porous solids for environmental remediation
Mark Biscoe: mechanistic and synthetic organic chemistry
George John: organic synthesis, self-assembled soft materials, bionanotechnology, green chemistry
Urs Jans: environmental organic chemistry
Glen Kowach: solid-state inorganic chemistry
Mahesh Lakshman: organic synthetic studies of chemically induced mutagenesis, metal-mediated nucleoside modification
John Lombardi: surface-enhanced Raman spectroscopy of nanoparticles and adsorbed molecules
Stephen O'Brien: materials chemistry, nanotechnology, nanoparticles and self-assembly
María Tamargo (P): molecular beam epitaxy growth and characterization of semiconductor materials for photonics and electronics
Zhonghua Yu: physical chemistry of nanostructured materials
Barbara Zajc: synthesis/properties of fluorinated carcinogen analogs

PHYSICS

Robert Alfano: pico- and femtosecond spectroscopy of solids, liquids, and biophysics; laser optics; medical applications of photonics
Joseph Birman: group theory; high T_c superconductors; theory of optical and low-temperature phenomena
Swapan Gayen: photonics, ultrafast laser spectroscopy, optical imaging of biological and turbid media
Daniel Greenberger: neutron interferometry; quantum theory; relativity; history and philosophy of science
Joel Koplik: theoretical fluid mechanics; molecular dynamics of fluid flow
Hernan Makse: condensed matter, granular matter; soft condensed matter physics
Carlos Meriles: novel magnetic resonance, optical NMR
V. Parameswaran Nair: quantum field theory
Vladimir Petricevic: solid state lasers and materials; photonics
Alexios Polychronakos: quantum field theory, mathematical physics
Alexander Punnoose: theoretical condensed matter physics
Myriam Sarachik: physics of solids at low temperatures, MI transitions, magnetic materials, molecular magnetism
David Schmeltzer: theoretical condensed matter; many body physics
Mark Shattuck: experimental fluid mechanics, transport processes, complex fluids
Richard Steinberg: science, physics education
Jiufeng Tu: physics, optical studies of correlated- and nano-systems
Sergey Vitkalov: experimental condensed matter physics

SOPHIE DAVIS SCHOOL OF BIOMEDICAL EDUCATION

Shailesh Banerjee (B): pharmacology of antipsychotic drugs
Patricia Broderick (B): neuropsychopharmacology
Christopher Chan (B): characterization of neuronal circuit connections
Eitan Friedman (B, BC): neuronal signal transduction in drugs of abuse and in affective disorders
Paul Gottlieb (B, BC): assembly, replication and structure of cystoviruses; viral etiology of systemic autoimmune disease
Sanna Goyert (B, BC): defense mechanisms against bacterial pathogens
Ira Josephson (BC): properties, pharmacology, and development of cardiac Na, Ca and K ion channels
Khosrow Kashfi (B): biology of colon and pancreatic cancers and chemoprevention; regulation of lipid metabolism
Itzhak Mano (B): biology of glutamate and neurodegenerative diseases
Carol Moore (B, BC): protective mechanisms against oxidative stress
Serafin Piñol-Roma (B, BC): RNA-binding proteins and complexes, defects in mitochondrial gene expression
Linda Spatz (B, BC): microbiology; regulation of autoreactive B cells
Hoau-Yan Wang (B): molecular mechanisms of neurodegenerative diseases

BIOMEDICAL and CHEMICAL ENGINEERING

Marom Bikson (B): neural engineering, functional electric stimulation, epilepsy
Alexander Couzis (C): surface engineering, templated crystallization, biosensors, surfactant-facilitated wetting of hydrophobic surfaces
Stephen Cowin (B): orthopedic biomechanics, soft tissue mechanics, developmental biology
Morton Denn (C): rheology, polymer science, polymer processing, non-Newtonian fluid mechanics
Ilona Kretzschmar (C): molecular and nanoparticle self assembly and surface chemistry for electronics applications
Lucas Parra (B): signal analysis methods for sensory signals, real-time imaging of human brain activity
David Rumschitzki (C): reaction engineering; transport and reaction aspects of artery disease
Carol Steiner (C): novel hydrogels, soft biomaterials, polymer/surfactant interactions
Maribel Vasquez (BC): nano-microfluid applications in tissue engineering

EARTH AND ATMOSPHERIC SCIENCES

Pengfei Zhang (C): environmental chemistry

CONTACT US

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10 REASONS



to do a

CUNY Ph.D. in Science

at



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<http://forum.sci.ccny.cuny.edu/>

1. Exciting Research!

We pursue projects that range from condensed matter physics to neuroscience, ultrafast photonics to environmental chemistry, nanomaterials to cancer cells, ecology to molecular biology, biophysics in the lab and *in silico*. The Science Division at The City College of New York (CCNY) includes about 80 research-active faculty scientists, with three members of the National Academy of Sciences and six University Distinguished Professors, bringing in more than \$17 million annually in grant funding. We publish widely, present our findings at numerous conferences, and serve on prestigious review panels and editorial boards.

2. Flagship Institution

Since its founding in 1847, The City College of New York has provided world-class higher education to an increasingly diverse student body -- serving as one of the single most important avenues to upward mobility in the nation. Access to excellence remains the vision of the College today. CCNY is now a Ph.D.-granting institution in the fields of biochemistry, biology, chemistry, physics, and engineering; our Earth and Atmospheric Sciences and Mathematics programs are also on their way to attaining comparable status in the near future.

3. Research Institutes and Centers

CCNY's Science Division is home to several University Institutes and College Centers that bridge disciplinary boundaries and build on the complementary strengths of individual research groups. The Institutes focus on ultrafast spectroscopy and lasers, physico-chemical hydrodynamics, and macromolecular assemblies. The Centers study the cellular and molecular basis of development, remote sensing science and technology, cancer research, analysis of structures and interfaces, and nanostructures in sensors and energy systems.

4. Facilities

The 360,000 sq. ft. Marshak Science Building houses excellent core facilities for electron and confocal microscopy, cellular microsurgery, solution- and solid-state nuclear magnetic resonance, x-ray diffraction and fluorescence for materials science, mass spectrometry, computational physics and biophysics, and atomic absorption spectrometry.

Renovation is underway for interdisciplinary neuroscience research, and a new vivarium adjacent to the building has recently been completed.

Also under construction on our South Campus is an Advanced Research Complex including a building for CCNY's science programs and a CUNY-wide Advanced Science Research Center, planned for nearly 400,000 sq. ft. of state-of-the-art laboratories and offices, equipment facilities, social space, and a lecture hall. Together with the adjacent NY Structural Biology Center, the buildings will form a research hub with outstanding opportunities for faculty and students.

5. Location

Located in the up-and-coming Hamilton Heights section of Manhattan, CCNY is accessible by major subway and bus lines. Walk to the NY Structural Biology Center or Columbia University, hop a quick train to the CUNY Graduate Center, attend seminars at other CUNY campuses, explore New York City's cultural and recreational treasures.

6. Collaborations

Researchers in CCNY's Science Division cooperate closely with their counterparts at the CUNY Medical School, New York Center for Biomedical Engineering, and Research Coordination Network for Emerging Methodologies of Molecular Structure Determination of Biological Solids, all housed on our campus. We have easy access to 9 high-field NMR spectrometers operating at 500-900 MHz, 3 cryoelectron microscopes, and an X-ray beam line for crystallography through the New York Structural Biology Center, a world-class consortium of 10 NY research institutions. Our faculty and students also benefit from the CCNY-Memorial Sloan Kettering Cancer Research Partnership and numerous individual collaborations at Columbia, NYU, and the Albert Einstein, Mt. Sinai, and Cornell medical schools.

7. Job Placement

CCNY's Ph.D. students and postdoctorals have secured academic appointments including CUNY, Brown, U. of Houston, Amherst, Howard, Interamerican U. of Puerto Rico, and the Tata Institute (India); they also work at NIH, FDA, and Lawrence Livermore National Laboratories, and at industrial firms including IBM, Bristol-Myers Squibb, Intel, Boeing, Lockheed Martin, Con Edison, MTA and Raytheon.

8. Housing & Food

The Towers is a new campus residence hall located at St. Nicholas Terrace and West 130th Street, housing 600 students in furnished, air-conditioned, wireless Internet-equipped apartment-style units with private or shared bedrooms. CCNY also refers students to International House (500 Riverside Drive, 212-316-8436), Sussex House (260 West 41st Street, 212-719-3700), and The Student Housing Center, a no-fee brokerage service (212-977-9099). Our Ph.D. students typically reside in Upper Manhattan, Queens, the Bronx, or Brooklyn.

In addition to student and staff cafeterias, the Marshak Science Building boasts its own café with delicious coffees, teas and snacks. West Harlem's ever expanding Viaduct Valley near CCNY features upscale but affordable eateries including the Dinosaur Bar-B-Que, Hudson River Café, Covo and Talay. Within a few blocks of campus you can also find Dominican, Mexican, Puerto Rican, and Ecuadorian delights, all reasonably priced!

9. Teaching and Mentoring

Professional training of our Ph.D. students typically includes part-time teaching duties for undergraduate lab courses, problem-solving sessions, and/or exam grading. Additional opportunities to teach high school and college students include research mentoring, curriculum design for CUNY's GK-12 and College Now programs, and research-inspired lab workshops conducted with CCNY's Pathways Bioinformatics and Biomolecular Center.

10. Camaraderie

The CCNY Science Division Forum (<http://forum.sci.ccnycunyu.edu/>) maintains up-to-date information on seminars and symposia, faculty and staff, core equipment facilities, building services, course schedules, research opportunities, and Division administration. All-division parties and Town Hall meetings are held several times a year.

We trade research tips at group meetings, share use of exotic equipment, read drafts of grant proposals, and rehearse each other for upcoming Qualifying Exam presentations. CUNY's Institute for Macromolecular Assemblies hosts a 'Taste of Science,' a get-together for students and faculty every two weeks. Our community aims to pull together!

FACULTY RECRUITING SCIENCE PH.D. STUDENTS (2009-10)

Faculty are listed with their home departments or primary disciplinary area; additional doctoral appointments are shown in parentheses.

BIOCHEMISTRY & BIOPHYSICS

Zimei Bu: macromolecular assembly and intracellular trafficking of membrane receptors and ion channels
Marco Ceruso (C): computational modeling of protein structure/dynamics, molecular recognition, signal transduction
Sasha De Carlo: cryoelectron microscopy of proteins
Ranajeet Ghose (C, P): structural biology of signal transduction, protein dynamics; NMR methodology
Marilyn Gunner (B, C, P): computational electrostatics of proteins
Ronald Koder (C, P): protein design, cofactor design, solution and solid state NMR
Themis Lazaridis (C, P): modeling of protein-membrane interactions and molecular recognition
Kevin Ryan: biochemistry and molecular biology of pre-mRNA processing; molecular recognition in olfaction
Ruth Stark (C, B, P): protein-assisted fatty acid transport, melanin and plant biopolymer assemblies; NMR methodology
Mark Steinberg: molecular biology of cancer and malignancy

BIOLOGY

Robert Anderson: modeling of species-specific geographic ranges with geographic information systems
Paola Bellosta (BC): genetic regulation of cell growth
Amy Berkov: ecological specificity of insects
Avrom Caplan: regulation of protein homeostasis to promote polypeptide folding or degradation
Ana Carnaval: spatial patterns of genetic diversity to determine impact of climate and pathogens on biodiversity
Jay Edelman: human brain generation of eye movement
Shubha Govind: signaling mechanisms of hematopoiesis and immunity in *Drosophila*
Jerry Guyden: molecular immunology of thymic nurse cells
Karen Hubbard (BC): RNA metabolism and gene expression during cellular aging
Anuradha Janakiraman (BC): protein structures involved in bacterial cell division
Jonathan Levitt: electrophysiology and neuroanatomy of visual perception
Christine Li: molecular genetics of neurotransmitter function and Alzheimer's disease
David Lohman: interactions between insects and other organisms in determining hyper-diverse communities
Mark Pezzano: cellular immunology of thymic epithelial stem cells
Robert Rockwell: population and community dynamics of migratory birds
Adrian Rodriguez-Contreras: structure and function of brain change during development
Shireen Saleque: genetic/epigenetic basis of blood cell generation
Sudha Sharma: DNA repair mechanisms in premature aging and cancer
Ofer Tchernichovski: mechanisms of vocal learning in songbirds
Tadmiri Venkatesh: genetics and molecular biology of neuronal differentiation and signaling in learning and neuronal plasticity
Joshua Wallman: transduction of visual information into growth signals in the eye

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