

PH.D. PROGRAM IN BIOCHEMISTRY  
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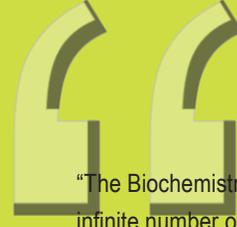
**THE  
GRADUATE  
CENTER**

CITY UNIVERSITY  
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# Ph.D. Program in Biochemistry

[www.gc.cuny.edu/biochemistry](http://www.gc.cuny.edu/biochemistry)



"The Biochemistry Ph.D. program offers a seemingly infinite number of energetic faculty research advisors along with diverse student cohorts and attentive mentoring. These opportunities allow you to tailor your Ph.D. not only to your background, but to where you want to go next. Lab rotations allowed me to explore new research topics; I felt encouraged to explore, deepen, and develop my interests. I am so satisfied with my thesis topic and mentor and I know that my time at CUNY will lead me to a successful and dynamic professional research career."

*MaryEllen Heavner,  
Biochemistry doctoral student and  
NIH Pre-doctoral fellow*

"I entered from a biology background where I was doing research in microbiology and molecular biology of tuberculosis. The Biochemistry PhD. program offered a very welcoming environment that facilitated my transition into biochemistry/biophysics research. The faculty spans areas of expertise from Cell Biology to Chemical Biology and Biophysics, providing a broad range of opportunities to explore in first year lab rotations. Additionally, the opportunities to teach allows students to acquire experience essential for pursuing an academic career. I am very satisfied with my experience at the Graduate Center and CUNY. It prepared me for a successful scientific career in academic and industrial environments."

*Dr. Javier Suarez,  
2014 Biochemistry doctoral program graduate,  
Scientist, Janssen Pharmaceuticals, Inc.*

## The Graduate Center

A graduate school of arts and sciences, the Graduate Center (GC) is the principal doctorate-granting institution of the City University of New York, offering more than 30 doctoral degrees. In addition to rigorous academic training in the humanities, sciences, and social sciences in a Ph.D.-focused, scholarly environment, the Graduate Center fosters globally significant research across the faculty and in a wide variety of centers and institutes. It is an inclusive community of 7,000 students, scholars, and researchers, drawing upon the widest possible range of experience of race and ethnicity, nationality, sexual orientation, religion, gender identity, age, physical ability, and socioeconomic status.

## Admission Requirements

Most candidates enter the program with an undergraduate major in Chemistry, Biochemistry, or less often, Biology/Biotechnology. Competitive candidates will have taken Physical Chemistry and Calculus courses and have had research experience and a GPA in the sciences of at least 3.0. Official transcripts, GRE scores (Verbal, Quantitative, Writing) and letters of recommendation from two or three professors are to be submitted with applications. Scores on English proficiency exams are required of foreign applicants.

All admitted students will receive financial support and full tuition waiver (see below). Admission deadline is January 1 for attendance starting the following fall semester.

Graduates go on to prestigious professional positions, tenure-track university jobs as well as research scientist jobs in the chemical and pharmaceutical industries. Career counseling and professional development are among the goals of the program.

## The Advanced Science Research Center (ASRC)

This new CUNY center allows scientists from within CUNY and beyond to work across disciplines with Directors and faculty researchers in five fields of applied science: Nanoscience, Photonics, Neuroscience, Structural Biology, and Environmental Sciences. Facilities supplement those found at the individual CUNY campuses, making state-of-the-art instrumentation available for discoveries enabled through scientific collaboration. <http://asrc.cuny.edu/>

## Program Specifics

Courses are taught at the Graduate Center, while research opportunities are found at CUNY college campuses throughout New York City and at affiliated institutions (the New York Structural Biology Center, the American Museum of Natural History, and the New York Botanical Garden). The CUNY Advanced Science Research Center (ASRC) and medical center laboratories are also available for research and collaboration. Resources at three nearby university campuses are also available.

A standard Biochemistry Core and Advanced course curriculum as well as a specialized Molecular Biophysics track are available to Biochemistry Ph.D. students. Mastery of current bodies of knowledge in biochemistry including macromolecular structure and function, molecular biology, enzymology and metabolism, bioorganic and biophysical chemistry, and techniques for analysis of structure and function is provided in core and advanced courses during the first two years (60 credits). Research rotations are required during the first year to allow students to become familiar with faculty research.

Milestones in the path to the degree include: the First Level and Second Level Examinations, given respectively at the end of the first year of study and before the end of the third year, and a Doctoral Dissertation based on original research.

State-of-the-art equipment supporting research efforts is housed at the senior college campuses. Representative techniques include: high resolution and solid state NMR, EPR, UV, and optical spectroscopies including laser techniques and circular dichroism; microcalorimetry, rapid kinetics measurements, surface plasmon resonance, cryoelectron microscopy, confocal microscopies, LCMS, GCMS and high resolution mass spectrometry, cell cytometry, advanced imaging, small molecule x-ray crystallography, high-throughput crystallography; and high performance computing.

Federal agencies (NIH, NSF) and other sponsors support research in areas such as macromolecule-ligand interactions, molecular biology of cancer and anti-cancer drugs, ribosome function and RNA structure, drug design, de-novo protein design, toxic metals, peptides for epigenetic therapies, biosynthetic pathways in human pathogens, kinases as regulators, photoreceptor physiology, and telomeres, among others.

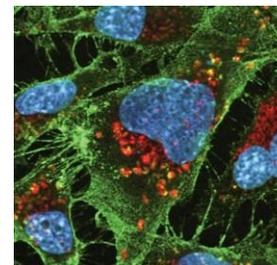


PHOTO COURTESY PROF. A. ZAKERI

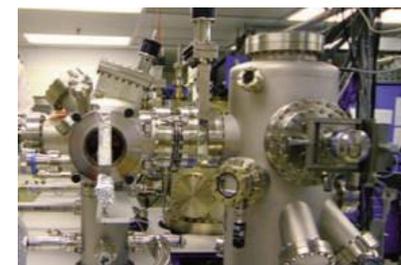
*Influenza A virus assembly in infected cells.*

## Financial Aid

All Biochemistry doctoral students are provided with 5 years of financial support (CUNY Science Scholarships), tuition waiver, and subsidized health insurance (NYSHIP) that includes major medical, dental, and optical plans. Parental accommodation is offered to new parents for the birth or adoption of a child. Part of the award is provided as a paid teaching fellowship.

## Contact Information

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To learn more about the Ph.D. Program in Biochemistry, visit [www.gc.cuny.edu/biochemistry](http://www.gc.cuny.edu/biochemistry)

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