

## Summer 2024 Research Series

The Departments of Biology and Chemistry at the College of Staten Island will be offering four exciting high-level early research opportunities for aspiring Pre-Health and Pre-Med students. Current CSI students as well as high school students who have taken a year of Biology or Chemistry are eligible to participate. All of these opportunities allow aspiring Pre-Med and Pre-Health students to conduct research early in their academic careers.

Please see below for details. Online payment Information will be sent to applicants.



A new, cutting-edge research opportunity in Biotechnology for participants to explore development of tools and current methods to manipulate DNA at the molecular level. Students will experience hands-on cutting of short stretches of DNA and connecting it to a large DNA molecule—a process that is referred to as molecular cloning or gene cloning. Students can subsequently examine, study and analyze the resulting recombinant DNA fragments. Gene cloning is widely used in biopharmaceuticals for creation of human proteins, such as insulin synthesis; in gene therapy, and for gene analysis.

**Instructors:** Prof. Cassandra Camillo, Lecturer; Dr. Chang-Hui Shen, Professor and Chair, Department of Biology

**Dates:** July 8–18, Mondays and Wednesdays: 2:30–5:30pm, Tuesdays and Thursdays: 4:30–6:30pm

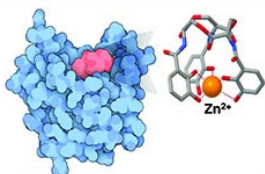
**COST:** \$490.00 (discounted lab and materials fee), payable online

**DEADLINE:** Apply by July 5, 2024 <https://forms.office.com/r/T01n4kPXit>

20 hours, In-person

*Seats will be filled first-come, first-served. Online payment information will be shared.*

**START BUILDING YOUR ACADEMIC CAREER WITH THIS EARLY RESEARCH EXPERIENCE AT THE COLLEGE OF STATEN ISLAND/CUNY**



2024 SUMMER RESEARCH SERIES

## Gateway to Science: Experiments and Computations in Chemistry

*This grant-funded research experience is offered free of cost by CSI's Dept. of Chemistry and National Science Foundation*

### EXAMPLE OF WHAT YOU WILL DO:

- (1) Learn the trick of the trade of being an experimental and computational researcher
- (2) Use experimental techniques to study proteins
- (3) Use modern computational approaches to simulate biological systems
- (4) Combine modern experimental and computational techniques to achieve fundamental understanding of chemistry in biological system

### BENEFITS:

- Experiencing the life of a chemist working in experimental labs
- Learning the basics of protein characterization and computational modeling
- Working side-by-side with graduate students and professors at the College of Staten Island

### FACULTY:

- Rupal Gupta, Ph.D.; Professor of Chemistry; Ph.D. Programs in Chemistry, Biochemistry and Physics, CUNY Graduate Center.
- Angelo Bongiorno, Ph.D.; Professor of Chemistry; Ph.D. Programs in Chemistry and Physics, CUNY Graduate Center.

**To Apply:** Complete the short application online—access the link or copy and paste the URL: <https://forms.office.com/r/1hmzAvCdXy>

**Application Deadline: July 5**

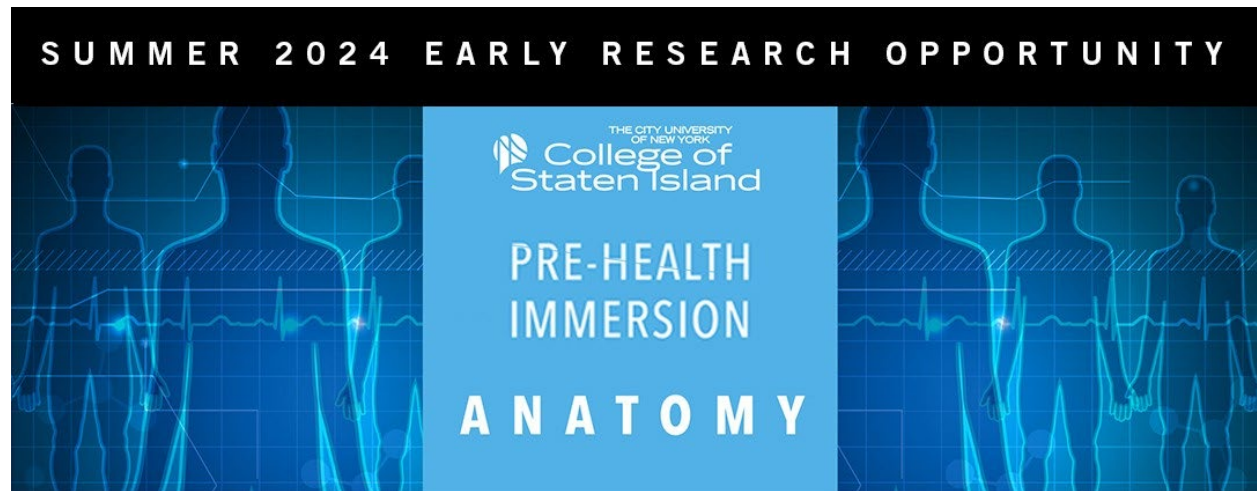
**Number of Seats:** 15 seats available in the program and applications will be considered on a first-come, first-served basis. Accepted participants are expected to promptly reply and accept our offer

**When:** 07/08/2024 – 07/18/2024 (two weeks), 4 days a week (Monday – Thursday) from 10:00 a.m. – 1:00 p.m.

**Location:** Biological and Chemical Sciences Building (6S)

Open to curious undergraduate students at CSI wondering if research is for you OR high school students (preferably who have applied and accepted our offer of admission for the Fall 2024 semester)

- Meet minimum academic standards (85.0 Grade Point Average, unweighted; high grades in Math and Science courses). No Advanced Placement (AP) in Biology and/or Chemistry course necessary
- Students with a genuine interest in the sciences but not pursuing a science curriculum are welcome to apply as long as they have completed a course in Chemistry



**A Unique Pre-Health Program Providing Students With a Rare Opportunity to Learn About Pre-Health Education and Explore**

**Different Aspects Of Life as a Health Care Provider**

This intense, 30-hour program provides students a unique opportunity to learn about pre-health education. The program's objective is to shape the career of pre-medical and pre-dentistry students as well as other health care professions, such as pharmacy, physician assistant and public health.

**Pre-Health Mentorship**

- Individual guidance and portfolio-building for students to reach their professional goals
- Detailed review of the pre-health path
- Introduction to pre-health advisory committee
- Enrollment in pre-health mentoring program.
- Assistance with the healthcare professional school application process: research, community service, admission exam preparation, and shadowing at local hospitals.

**Included:**

- All lectures taught by health care provider
- Online dissection platform, complete suture kit, and Biopac student lab.
- Pre-health advisement and initiation of individual portfolio.

**Anatomy Mini Course**

- Integration of clinical case studies, research and hands-on lab experiments

- Comprehensive exposure to anatomy, medical terminology, BIOPAC lab activities and virtual human body dissection.
- Surgical lab, knot tying, analysis of EKG, EMG, nerve conduction velocities, and pulmonary function testing.
- Suturing techniques, clinical case studies, microscopy

**Dates:** July and August (Tues. 7/23 is 1st day) 12:00pm–3:00pm • Monday-Wednesday-Friday: 7/26, 7/29, 7/31, 8/2

10:00am–1:00pm • Tuesday-Thursday: 7/23, 7/25, 7/30, 8/1

**Who is Eligible:** High school students who have taken Biology, incoming college frosh, current college students.

**Apply Online:** Application Deadline: Friday, 7/12/24 <https://forms.office.com/r/v05pEAu3Bs>

Recognition: Students will receive a Certificate of Completion from CSI

**Lab/Materials Fee:** \$590.00 • Compare to similar courses that cost \$1800 and higher— Online payment available via credit card



**Program Description:** Cell Biology is the foundation for understanding the biological function in normal and disease states.

This early research opportunity is offered by the Center for Developmental Neuroscience and the Department of Biology to high school, undergraduates, and graduates interested in hands-on research experience in cell biology. Students will learn how to study molecular and cellular components and processes of the cell. The proposed workshop will also provide skills in microscopy. The students will apply these techniques to gain experience in cell biology and lab skills.

Students will receive contact and guidance from the Director/Instructor, technician, postdocs, and graduate students who participate in Summer 2024 research.

**Location:** In person, Biological and Chemical Sciences Building

**Parking:** Lot 2, adjacent to Building 6S

**Campus Map:** <https://www.csi.cuny.edu/sites/default/files/pdf/aboutcsi/map.pdf>

**Eligibility:** High school students who have taken a year of Biology, undergraduates, graduate current college students

**To Apply:** Please submit by August 2nd. Please use the following application link or scan the QR Code below: <https://forms.office.com/r/DRki2qgNKK>

**Number of Hours:** 24 • **Number of Seats:** 24

**Dates:** Two-week program, August 5–16, Monday – Thursday from 3:30–6:30PM

- Attend daily meetings with Instructor, participate in experiments
- Students will submit a final report
- In addition to gaining valuable experience in research, the students will experience college life with other students.

**Objective:** To train students in common cell biological techniques

**Director/Instructor:** Nicole LaMassa, Lecturer • [nicole.lamassa@csi.cuny.edu](mailto:nicole.lamassa@csi.cuny.edu)

**Course materials:** Lab protocols will be provided before each lab session. You will need a lab notebook to keep detailed notes of every experiment.

**Sessions:** The instructor will provide an overview of the lab procedure and its application to cell biological research. Students will be required to understand each of the concepts presented. The students will then perform the procedures according to the lab protocol provided. During the experiment, the students will keep detailed notes of their activities.

**Attendance/participation:** Attendance and participation is a requirement of the lab course.

**Lab fee and materials:** Discounted lab fee of \$490.00. Payment available online

**Questions?** Email or call Holly Block: [holly.block@csi.cuny.edu](mailto:holly.block@csi.cuny.edu) • 347-443-8699