

# MAJOR

# BACHELOR OF SCIENCE IN CELL AND MOLECULAR BIOLOGY

## DEPARTMENT OF SCIENCES

524 West 59th Street, New York, NY 10019 ■ New Building, 5.66.06

### MAJOR ADVISORS

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See all major requirements at: [www.jjay.cuny.edu/cell-and-molecular-biology-major-resources](http://www.jjay.cuny.edu/cell-and-molecular-biology-major-resources)

## WHAT WILL YOU LEARN IN THIS MAJOR?

All living things are made of cells. Cells are the fundamental unit of life and all cells come from the division of other cells. It is, therefore, impossible to understand living things without understanding cells.

The Cell and Molecular Biology (CMB) major is a thorough exploration of the biology and chemistry of living things. From the actions of individual enzymes, to the power of genes, through the construction of tissues, organs, and people, cell biology is the study of how life works. In the simplest sense, life is chemistry, and the Cell and Molecular Biology major examines that chemistry at all levels.

### IN THIS MAJOR YOU WILL ■■■

**Discover** how chemical processes give rise to biological processes

**Explore** the various molecules, cells, and tissues that comprise living things

**Apply** molecular techniques to the study of cells and their functions

**Become** proficient in the knowledge and concepts of genetics

**Complete** a high-level capstone experience

### FIRST COURSES IN THE MAJOR ■■■

**Bio 101** or **Bio 103**: Modern Biology I

**Bio 104**: Modern Biology II

**Che 101** or **Che 103**: General Chemistry I

**Che 104**: General Chemistry II

**Che 201**: Organic Chemistry I

**Bio 205**: Eukaryotic Cell Biology

Entering students admitted to CMB take biology/chemistry courses determined by their math placement or by biology/chemistry courses transferred in from other colleges.

All students not admitted to the major upon admission to John Jay should see the Admission Requirements section of the CMB major resource webpage.

*“You are made of a hundred trillion cells. We are, each of us, a multitude.”*

— Carl Sagan

## WHAT CRITICAL THINKING SKILLS WILL YOU DEVELOP IN THIS MAJOR?

- Scientific thinking and the scientific process
- Data collection, analysis, and interpretation
- Experimental design and execution
- Critique of scientific data and publications
- Ability to present scientific work in oral and written form

## WHAT MINOR MIGHT BE A GOOD COMPLEMENT TO THIS MAJOR?

- Chemistry
- Psychology
- Mathematics
- Computer Science
- Anthropology
- Law

For more information about minors, go to:

[www.jjay.cuny.edu/minors](http://www.jjay.cuny.edu/minors)

## WHAT OPPORTUNITIES WILL THIS MAJOR OFFER YOU?

- The ability to compete for scientific positions in research, academia, industry, and government
- Preparation for a wide range of professional and graduate programs in the life sciences
- An excellent major for pre-medical students
- Access to the PRISM program and participation in research with faculty

## THIS MAJOR CAN BE A GREAT FOUNDATION FOR A WIDE RANGE OF JOBS, BUT SOME POSSIBILITIES TO CONSIDER ARE:

- Research Scientist or Technician
- Physician, surgeon, medical examiner (medical degree required)
- Pharmacist, veterinarian, physician assistant (graduate degree required)
- Patent or healthcare lawyer (law degree required)
- Forensic biology analyst
- Technician in government, industrial, or medical laboratory
- Genetic counselor
- Science teacher
- Science Writer or Journalist
- Public Health professional
- Patent Agent
- Consultant