Chemistry and Chemical Biology

Website (https://cos.northeastern.edu/chemistry-chemical-biology/)

Penny Beuning, PhD
Professor and Chair

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The PhD program in chemistry provides research and professional opportunities for students that are based on fundamental chemical principles with translational applications to the real world. The program is built on academic rigor and research impact, based on the creativity and strengths of an increasingly diverse faculty and student body. We have harnessed our extensive connections in industry to create and maintain a thriving industry-entry PhD program and provide our regular PhD students with internship opportunities in industry, government laboratories, and other venues that may lead to a wide range of careers. Students in our program leave with flexible skills that can be applied in creative and meaningful ways in academics, industry, and beyond. We are aligned in our core values with the mission of Northeastern University to "educate students for a life of fulfillment and accomplishments and create and translate knowledge to meet global and societal needs." This mission is at the core of the curriculum, research, mentoring strategies, and professional development opportunities offered to our students. It is implemented in a highly multidisciplinary and transparent environment where students have a voice and take real ownership and responsibility for their professional success. Within this context, PhD students work with chemistry and chemical biology faculty in interdisciplinary areas that include biochemistry and chemical biology, synthetic chemistry, medicinal chemistry, polymer and materials chemistry, environmental chemistry, computational chemistry, and bioanalytical chemistry.

The Master of Science in Chemistry is designed to allow practicing chemical professionals who have an earned bachelor's degree in chemistry or a closely related field to pursue a master's degree in chemistry by completing a coursework program during the evening weekday hours. Full-time or part-time options are available. The department offers a diverse range of courses that mirror the faculty's research interests in biochemistry, chemical biology, synthetic chemistry, medicinal chemistry, polymer and materials chemistry, environmental chemistry, computational chemistry, and bioanalytical chemistry.

Website (https://cos.northeastern.edu/master-of-science-in-biotechnology/)

Jocelyn Haversat, PhD
Associate Teaching Professor and Director, Biotechnology Programs

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The biotechnology programs are housed in the Department of Chemistry and Chemical Biology. The Master of Science in Biotechnology, a professional science master's degree program, is an innovative, nonthesis, experiential graduate degree. It combines advanced interdisciplinary training in biotechnology, biology, chemistry, regulatory, and pharmaceutical sciences with the development of high-value business skills critical to success in the biotechnology industry. Students develop and apply their skills in a hands-on co-op experience with one of Northeastern's many academic and industry partners. Full-time, part-time, and remote options are available with online and evening course offerings.

The biotechnology program also offers several graduate certificates in the areas of biodefense and biosecurity, biopharmaceutical analytical sciences, biotechnology, biotechnology enterprise, biotechnology regulatory science, experimental biotechnology, manufacturing and quality operations, molecular biotechnology, pharmaceutical technologies, process science, and vaccine development.

Programs

Doctor of Philosophy (PhD)

- Chemistry (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/chemistry-phd/)

Master of Science (MS)

- Biotechnology (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/biotechnology-ms/)
- Chemistry (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/chemistry-ms/)

Graduate Certificate

- Biodefense and Biosecurity (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/biodefense-biosecurity-graduate-certificate/)
- Biopharmaceutical Analytical Sciences (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/biopharmaceutical-analytical-science-graduate-certificate/)
- Biotechnology (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/biotechnology-graduate-certificate/)
- Biotechnology Enterprise (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/biotechnology-enterprise-graduate-certificate/)
- Biotechnology Regulatory Science (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/regulatory-science-graduate-certificate/)

- Experimental Biotechnology (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/experimental-biotechnology-graduate-certificate/)
- Manufacturing and Quality Operations in Biotechnology (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/manufacturing-quality-operations-biotechnology-graduate-certificate/)
- Molecular Biotechnology (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/molecular-biotechnology-graduate-certificate/)
- Pharmaceutical Technologies (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/pharmaceutical-technologies-graduate-certificate/)
- Process Science (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/process-science-graduate-certificate/)
- Vaccine Development (https://catalog.northeastern.edu/graduate/science/chemistry-chemical-biology/vaccine-development-graduate-certificate/)