CHEMISTRY AND BIOCHEMISTRY

College of Arts and Sciences

435 Science Building
336-334-5714
http://chem.uncg.edu

Mitchell Croatt, Department Head
Jerry Walsh, Associate Department Head
Liam M. Duffy, Director of Graduate Study for the M.S. Program
Norman Chiu, Director of Graduate Study for the Ph.D. Program

Undergraduate Programs

The Department of Chemistry and Biochemistry offers five undergraduate programs: the Bachelor of Science in Chemistry, the Bachelor of Science in Biochemistry, the Bachelor of Science in Chemistry with a Concentration in Biochemistry, the Bachelor of Science in Chemistry with a Concentration in Research, and the Bachelor of Arts in Chemistry. A licensure program to prepare students to teach high school chemistry is offered. The Master of Science in Chemistry, Master of Science in Chemistry with Biochemistry Concentration, and Ph.D. in Medicinal Chemistry are offered at the graduate level (see the University Catalog). Students who follow the program leading to the Bachelor of Science in Chemistry degree are certified to the American Chemical Society as having met its rigorous requirements for undergraduate professional training in chemistry.

The Department’s biochemistry programs (B.S. in Biochemistry and B.S. in Chemistry with Concentration in Biochemistry) provide students with excellent preparation for graduate work in biochemistry and related life sciences, as well as for employment in chemical and biotechnological industries. These programs are also attractive to students planning careers in the medical, dental, or pharmaceutical professions.

The department emphasizes the opportunity for students to engage in undergraduate research. Many of our majors do so, principally in their junior and senior years, and this provides excellent training for those who intend to continue their studies at the graduate level.

Graduate Programs

UNC Greensboro has a tradition of excellence in advanced training for careers in the chemical and biochemical sciences. Our faculty is committed to providing one-on-one learning opportunities for all our students in the laboratory, and this dedication to quality graduate education translates into very high success rates for our graduates as they pursue careers in science. Our Department has a strong research emphasis on Medicinal Biochemistry, and our students engage in a diverse array of research projects related to that theme. For example, students work to develop or synthesize new drug candidates, identify and study mechanism of action of natural products, or explore the chemical properties of human drug metabolizing systems. In support of these efforts, our department is home to the Medicinal Chemistry Collaborative (MC²) directed by Dr. Nadja Cech and Dr. Nicholas Oberlies. The mission of this center is to broaden the impact of natural products and drug discovery research on the UNC Greensboro campus, and to facilitate university-industry relationships with local pharmaceutical and biotechnology companies.

The Department has a well-established Master’s level program that offers an M.S. in Chemistry within which a Concentration in Biochemistry can be chosen. These are very well-rounded terminal degree programs. In addition to course-work in core areas of Chemistry or Biochemistry, each program emphasizes training in research by requiring a significant research project with a Master’s thesis under the supervision of a professor. Students also receive experience in professional presentation through the seminar program and attendance at professional meetings to present research results.

Our Ph.D. program in Medicinal Biochemistry is unique in the state of North Carolina. Target-based rational drug design, with its emphasis on biochemical and molecular biological receptors, is now central to the development of new and more effective pharmaceuticals. The Ph.D. program in Medicinal Biochemistry at UNC Greensboro offers students an innovative curriculum and research environment that emphasizes fundamental biochemical interactions and mechanisms guiding drug design and development. Students who complete the program will have a strong biochemical perspective on drug design, discovery, and function, and will have specialization in any of several disciplines which connect biochemical interactions with pharmaceutical development: computational chemistry, bioanalytical chemistry, biophysical chemistry, natural product isolation, molecular biology and enzymology, or drug synthesis.

Professor
Nadja B Cech, Professor and Distinguished Professor\(^\text{G}\)
Alice E Haddy\(^\text{G}\)
Sherri A McFarland\(^\text{G}\)
Nicholas H Oberlies, Professor and Patricia A. Sullivan Distinguished Professor\(^\text{G}\)
Patricia H Reggio, Marie Foscue Rourk Professor\(^\text{G}\)
Ethan W Taylor\(^\text{G}\)
Jerry L. Walsh\(^\text{G}\)

Associate Professor
Bruce Banks\(^\text{G}\)
Norman H. L. Chiu\(^\text{G}\)
Mitchell P Croatt\(^\text{G}\)
Kimberly S Petergen\(^\text{G}\)
Jason J Reddick\(^\text{G}\)
Qibin Zhang\(^\text{G}\)

Assistant Professor
Liam M Duffy\(^\text{G}\)
Shabnam Hematian\(^\text{G}\)

\(\text{G} \quad \text{Graduate-level faculty}\)

- Biochemistry, B.S. ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/biochemistry-bs](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/biochemistry-bs))
- Chemistry, B.A. ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-ba](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-ba))
- Chemistry, B.S. ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-bs](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-bs))
- Chemistry Undergraduate Minor ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-minor](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-minor))
- Chemistry, M.S. ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-ms](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/chemistry-ms))
- Medicinal Biochemistry, Ph.D. ([https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/medicinal-biochemistry-phd](https://catalog.uncg.edu/arts-sciences/chemistry-biochemistry/medicinal-biochemistry-phd))
Chemistry and Biochemistry Disciplinary Honors

Requirements

- A minimum of 12 credit hours as defined below.
- UNC Greensboro cumulative GPA of 3.30 or better or, for transfer students, cumulative GPA of 3.30 or better from all prior institutions.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Required</td>
<td>Senior Honors Project</td>
<td>3</td>
</tr>
<tr>
<td>HSS 490</td>
<td></td>
<td></td>
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<tr>
<td>6 credits of Honors course work in the major</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>3 credits of Honors course work in the major or another area</td>
<td>3</td>
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Recognition

Receive a Certificate of Disciplinary Honors in Chemistry and Biochemistry; have that accomplishment, along with the title of the Senior Honors Project, noted on the official transcript; and be recognized at a banquet held at the end of the spring semester.

Honors Advisor

Contact Liam Duffy at liam_duffy@uncg.edu for further information and guidance about Honors in Chemistry and Biochemistry. To apply: http://honorscollege.uncg.edu/forms/disc-application.pdf