DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

The Department of Chemistry and Biochemistry is committed to excellence in educating our students and conducting high-impact research. The department offers both M.A. and M.S. degree programs. The M.S. degrees are research-based and require a thesis while the M.A. degree is course-based and requires successful completion of a cumulative examination. The curriculum provides opportunities for research and learning in all areas of chemistry and biochemistry and encourages a hands-on approach to the use of a wide variety of modern instrumentation. Many of our graduates have advanced to industrial positions and/or professional and doctoral programs, including the doctoral program in materials science, engineering, and commercialization (MSEC) at Texas State.

Research Areas

The department's graduate faculty conducts research in numerous areas of the six fields of chemistry. Specific research areas include:

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<tr>
<th>Analytical</th>
<th>mass spectrometry, chromatography, electrochemistry, spectral methods</th>
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<tr>
<td>Biochemistry</td>
<td>enzyme isolation, enzyme mechanisms, ion-channel regulation, protein structure-function relationships, molecular genetics; gene delivery; nucleic acid biochemistry; ribonucleoprotein complex function and regulation; genomics; proteomics</td>
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<td>Inorganic</td>
<td>synthesis and structure of high conductivity solid-state electrolyte compounds, boron-nitrogen compounds, bioinorganic chemistry; solid state synthesis; metal complex catalysis; intercalation chemistry; crystallography; synthetic main group organometallic chemistry</td>
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<td>Organic</td>
<td>Synthetic organometallic chemistry; synthesis of stable carbenes and applications in small molecule activation and catalysis; chemistry of &quot;frustrated&quot; Lewis pairs; heterocyclic chemistry</td>
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<td>Physical Polymer</td>
<td>molecular beam methods and laser spectroscopy; polymer synthesis; nanocomposites; thin organic films, structure-property relationships; electronic polymers</td>
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Research Facilities

Research instruments available include 400 MHz NMR, X-ray Diffractometer, UV and IR spectrophotometers, atomic absorption, liquid and gas chromatographs, electrospray ionization/mass spectrometer, high-speed centrifuges, TGA, DSC, DMA, particle size analyzer, GPC, epifluorescent microscope, CO₂ incubators, and multi-well plate readers.

Financial Assistance

Graduate students are encouraged to work as laboratory teaching assistants. Applications can be obtained from the Chemistry and Biochemistry Department office. A limited number of research assistantships are also available at pay similar to that of laboratory teaching assistants. The Graduate College can provide information about the availability of graduate scholarships. In order to be considered for assistantships or scholarships, applicants must have submitted a completed application for review by the priority application deadline.

Master of Arts (M.A.)

- Major in Chemistry (http://mycatalog.txstate.edu/graduate/science-engineering/chemistry-biochemistry/chemistry-ma)

Master of Science (M.S.)

- Major in Biochemistry (http://mycatalog.txstate.edu/graduate/science-engineering/chemistry-biochemistry/biochemistry-ms)
- Major in Chemistry (http://mycatalog.txstate.edu/graduate/science-engineering/chemistry-biochemistry/chemistry-ms)

Minors

- Biochemistry (http://mycatalog.txstate.edu/graduate/science-engineering/chemistry-biochemistry/biochemistry-minor)
- Chemistry (http://mycatalog.txstate.edu/graduate/science-engineering/chemistry-biochemistry/chemistry-minor)

Doctoral Faculty

Beall, Gary W, Associate Dean, College of Science and Engineering and Professor, Chemistry & Biochemistry, Ph.D., Baylor University
Betancourt, Tania, Assistant Professor, Chemistry & Biochemistry, Ph.D., University of Texas at Austin
Brittain, William J, Chair - Professor, Chemistry & Biochemistry, Ph.D., California Inst of Technology
Hudnall, Todd W, Assistant Professor, Chemistry & Biochemistry, Ph.D., Texas A&M University
Irvin, Jennifer A, Associate Professor, Chemistry & Biochemistry, Ph.D., University of Florida
Li, Xiaopeng, Assistant Professor, Chemistry & Biochemistry, Ph.D., Cleveland State University
Martin, Benjamin, Associate Professor, Chemistry & Biochemistry, Ph.D., Penn State University Park
Rhodes, Christopher Peter, Assistant Professor, Chemistry & Biochemistry, Ph.D., Univ of Oklahoma Norman Campus
Graduate Faculty

Beall, Gary W, Associate Dean, College of Science and Engineering and Professor, Chemistry & Biochemistry, Ph.D., Baylor University

Betancourt, Tania, Assistant Professor, Chemistry & Biochemistry, Ph.D., University of Texas at Austin

Booth, Chad, Associate Professor, Chemistry & Biochemistry, Ph.D., Univ of Southern Mississippi

Booth, Rachell, Associate Professor, Chemistry & Biochemistry, Ph.D., Univ of Southern Mississippi

Brittain, William J, Chair - Professor, Chemistry & Biochemistry, Ph.D., California Inst of Technology

David, Wendi M, Senior Lecturer, Chemistry & Biochemistry, Ph.D., University of Texas at Austin

Du, Liqin, Assistant Professor, Chemistry & Biochemistry, Ph.D., University of Kentucky

Easter, David C, Professor, Chemistry & Biochemistry, Ph.D., Univ of California-Los Angeles

Feakes, Debra A, Professor, Chemistry & Biochemistry, Ph.D., Utah State University

Gray, Joel William, Lecturer, Chemistry & Biochemistry, Ph.D., Texas A&M University

Hudnall, Todd W, Assistant Professor, Chemistry & Biochemistry, Ph.D., Texas A&M University

Irvin, Jennifer A, Associate Professor, Chemistry & Biochemistry, Ph.D., University of Florida

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Kerwin, Sean Michael, Associate Professor, Chemistry & Biochemistry, Ph.D., Univ of California-Berkeley

Kornienko, Alexander Vladimir, Associate Professor, Chemistry & Biochemistry, Ph.D., Tufts University

Lewis, Lysle, Professor, Chemistry & Biochemistry, Ph.D., University of Arizona

Lewis, Karen A, Assistant Professor, Chemistry & Biochemistry, Ph.D., Univ of Texas Southwestern Med Ct

Li, Xiaopeng, Assistant Professor, Chemistry & Biochemistry, Ph.D., Cleveland State University

Luxford, Cynthia J, Assistant Professor, Chemistry & Biochemistry, Ph.D., Miami University

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Rhodes, Christopher Peter, Assistant Professor, Chemistry & Biochemistry, Ph.D., Univ of Oklahoma Norman Campus

Walter, Ronald B, Professor - Endowed Chair, Chemistry & Biochemistry, Ph.D., Florida State University

Whitten, Steven T, Associate Professor, Chemistry & Biochemistry, Ph.D., Johns Hopkins University