

**DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY**  
Supplemental Departmental Application for Graduate Admission

Updated 4/23/2009

Name: \_\_\_\_\_

*Last*

*First*

*Middle Initial*

**Academic Year Address:**

**Summer Address:**

Street: \_\_\_\_\_

City: \_\_\_\_\_

State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

e-mail: \_\_\_\_\_

If you change your address, please notify the graduate secretary by phone (Toll Free, USA only): 888 203 5682 or by e-mail: [gradassist.chembiochem@colorado.edu](mailto:gradassist.chembiochem@colorado.edu)

**Primary & Secondary Interest:**

Please choose a primary and secondary area of chemistry, which most interests you. Please check off as many of the sub-categories under the main areas as you need. (See our website – <http://www.colorado.edu/chemistry/> for information about research areas of our faculty)

**Analytical/Environmental/Atmospheric**

- Aerosols & Clouds
- Environmental Chemistry
- Renewable Energy
- Atmospheric Field Studies
- Instrument Development
- Bioanalytical Chemistry
- Planetary Atmospheres

**Biochemistry**

- Bio-Organic & Bio-Inorganic
- Informatics & Proteomics
- Nucleic Acids
- Cell Signaling
- Membranes
- Proteins & Enzymology
- Chemical Biology/Genetics
- Molecular Biophysics
- Structural Biology

**Materials & Nanoscience**

- Organic
- Energy
- Inorganic
- Physical

**Organic**

- Synthesis
- Chemical Biology
- Physical Organic

**Physical**

- Atmospheric/Astrochemistry
- Kinetics/Thermochemistry
- Reaction Dynamics
- Surface Chemistry
- Biophysics
- Photochemistry
- Physical Organic Chemistry
- Theoretical Chemistry
- Chemical Physics
- Nanotechnology/Materials
- Physical Inorganic Chemistry



# DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

## Overview of Major Research Areas

Inter-Divisional and Inter-Departmental Research Opportunities are also available

<b><u>Analytical/Environmental/Atmospheric</u></b>	
• Environmental Chemistry.....	Bierbaum, JL Jimenez, Kuchta, Sievers, Tolbert, Vaida
• Atmospheric Field Studies.....	JL Jimenez, Ellison, Tolbert
• Instrument Development.....	Hynes, JL Jimenez, Nesbitt, Sievers, Tolbert
• Bioanalytical Chemistry.....	Bierbaum, Feldheim, JL Jimenez, R Jimenez, Kuchta, Nesbitt, Sievers, Tolbert
• Aerosols & Clouds.....	Ellison, JL Jimenez, Ravishankara, Sievers, Tolbert, Vaida
• Planetary Atmospheres.....	Bierbaum, Hynes, JL Jimenez, Ravishankara, Tolbert
• Renewable Energy.....	Feldheim, Koval
• Trace Gases & Radicals.....	Bierbaum, Fall, Hynes, JL Jimenez, Ravishankara, Tolbert, Vaida, Volkamer
• Remote Sensing.....	JL Jimenez, Tolbert, Volkamer
<b><u>Biochemistry</u></b>	
• Bio-Organic & Bio-Inorganic.....	Caruthers, Eaton, Koch, Yin, *Anseth, *Bowan
• Cell Signaling.....	Ahn, Falke, Goodrich, Knight, Liu, Palmer, Taatjes, Yin
• Chemical Biology/Genetics.....	Eaton, Palmer, Wang, Yin
• Informatics & Proteomics.....	Ahn, Knight, *Copley
• Membranes.....	Falke, Koval, Yin
• Molecular Biophysics.....	Ahn, Batey, Falke, Goodrich, R Jimenez, Kugel, Nesbitt, Palmer, Pardi, Sousa, Taatjes, Wuttke
• Nucleic Acids.....	Batey, Caruthers, Cech, Eaton, Feldheim, Goodrich, Knight, Koch, Kuchta, Pardi, Wuttke
• Proteins & Enzymology.....	Falke, Fall, Goodrich, Kugel, Sousa, Wuttke
• Structural Biology.....	Batey, Falke, Knight, Pardi, Sousa, Taatjes, Wuttke
<b><u>Inorganic Chemistry</u></b>	
• Bioinorganic Chemistry.....	Palmer, Pierpont
• Organometallic Chemistry.....	Michl, Damrauer
• Photochemical Reactions & Multi-electron Chemistry.....	Pierpont
• Transition Metal Catalysis.....	Pierpont
<b><u>Materials &amp; Nanoscience</u></b>	
• Organic.....	Gin, Michl, Walba, Wang, Zhang, *Anseth, *Bowan
• Inorganic.....	Damrauer, Dukovic, Michl, Zhang
• Physical.....	Damrauer, Ellison, Michl, Zhang
• Renewable Energy.....	Damrauer, Dukovic, Eaton, Eaves, Ellison, Feldheim, George, Gin, Hynes, R Jimenez, Jonas, Koval, Liu, Pierpont, Rumbles, Skodje, Vaida, Walba, Weber, Zhang
<b><u>Organic Chemistry</u></b>	
• Synthesis.....	Phillips, Sammakia, Wang
• Chemical Biology.....	Caruthers, Eaton, Koch, McHenry, Wang, Yin
• Physical Organic.....	Ellison, Gin, Michl, Peters, Rumbles, Walba, Zhang
<b><u>Physical Chemistry</u></b>	
Atmospheric/Astrochemistry.....	Bierbaum, Hynes, Nesbitt, Ravishankara, Vaida, Volkamer
Biophysics.....	Falke, R Jimenez, Jonas, Nesbitt, Palmer, Pardi, Wuttke
Chemical Physics.....	Nozik, Weber
Kinetics/Thermochemistry.....	Bierbaum, Goodrich, Kugel, Nesbitt, Ravishankara
Photochemistry.....	Damrauer, Michl, Peters, Ravishankara
Nanotechnology/Materials.....	Dukovic, George, Nozik, Rumbles
Reaction Dynamics.....	Bierbaum, Damrauer, R Jimenez, Jonas, Lineberger, Nesbitt, Parson, Skodje, Weber
Physical Organic Chemistry.....	Bierbaum, Ellison, Michl
Physical Inorganic Chemistry.....	Damrauer, Koval
Surface Chemistry.....	George, Michl, Nesbitt, Skodje
Theoretical Chemistry.....	Eaves, Hynes, Michl, Nesbitt, Parson, Skodje

\*Faculty whose primary appointment is with other departments on campus.

## Interdisciplinary Programs

**Chemical Physics**: an interdisciplinary degree program requiring that students be accepted to either the Physics Department or the Department of Chemistry & Biochemistry. SEE WEB PAGE: <http://chemphys.colorado.edu>

**Biotechnology Training Program**: an interdisciplinary certificate program requiring that a student be accepted to one of three departments (Chemistry & Biochemistry, Chemical Engineering, and Molecular Cellular & Developmental Biology).

**The Molecular Biophysics Graduate Training Program**: an interdisciplinary program offering specialized training in biochemistry, molecular and cellular biology, and bio-molecular mass spectrometry as applied to cell regulation. Students must be accepted to the Department of Chemistry & Biochemistry or the Molecular, Cellular & Developmental Biology Department. SEE WEB PAGE: <http://spot.colorado.edu/~falke/biophysics/>

**The Signal Transduction and Cell Cycle Regulation Predoctoral Training Program**: an interdisciplinary program offering specialized training in biochemistry, molecular and cellular biology, and bio-molecular mass spectrometry as applied to cell regulation. Students must be accepted to Department of Chemistry & Biochemistry or Molecular, Cellular & Developmental Biology Department.

**Atmospheric and Oceanic Science** (administered by Program in Atmospheric and Oceanic Sciences, <http://paos.colorado.edu>): an interdisciplinary certificate program available to Chemistry graduate students interested in a minor in Atmospheric and Oceanic Sciences & Chemistry. SEE WEB PAGE: <http://paos.colorado.edu/program/certif.html>. See also [http://cires.colorado.edu/jimenez/CU\\_ACAP.html](http://cires.colorado.edu/jimenez/CU_ACAP.html) for research opportunities in atmospheric chemistry and air pollution at CU.

**Certificate Program on Science and Technology Policy** (administered by the CU Center for Science and Technology Policy Research, <http://sciencepolicy.colorado.edu>). An interdisciplinary program on the broad societal context for science and technology as well as an introduction to methodologies of policy analysis that are used in decision settings related to science and technology. SEE WEB PAGE: <http://sciencepolicy.colorado.edu/stcert/>

**Center for Pharmaceutical Biotechnology** (Joint with Chemical and Biological Engineering and the School of Pharmacy at the CU Health Sciences Center) is an interdisciplinary center conducting research on new advances in biotechnology and pharmaceutical sciences. Partners and supporters of the Center, which has research in analytical chemistry, drug delivery, e.g., microparticle and nanoparticle synthesis and coating, drug stability, and molecular biology, include Alza, Amgen, Baxter, Bayer, Biogen, Eli Lilly, Genentech, Merck, Novo Nordisk, RxKinetix, and Zymogenetics. SEE WEB PAGE: <http://www.uchsc.edu/sp/sp/biotech/cpbmain.html>

**Please note that participation in any of these programs requires approval from your research advisor.**