



## Vision

To benefit humankind and ensure a sustainable economy.

## Mission

To conduct cutting edge research into key areas of chemistry, and to provide a world-class education to undergraduate and graduate students, targeted at forming future leaders responsible for scientific discovery, application, and policy.

## Department Goals

- To strategically recruit and develop a world-class faculty
- To forge new ties to the energy industry and governmental partners in energy and capitalize on our strengths in nanotechnology
- To provide strong research infrastructure to support faculty and students
- To ensure an educational foundation that supports undergraduate and graduate experiences that generate future leaders



Dell Butcher Hall

## Department of Chemistry

Nobel prizes, dominance in the emergence of nanoscale science and technology, and significant contributions to both bioscience and materials science have propelled Rice University's Department of Chemistry to unparalleled status over the past two decades. How we support and nurture the department will determine its forward trajectory of continued distinction as we move into Rice's second century.

Chemistry is central to many modern scientific disciplines—biochemistry, materials, multiple areas of engineering—and is the leading department within Natural Sciences in its level of research support. Chemistry has been the nucleus of collaboration across departments and schools because of the unique position this field plays in science and technology. This department has also been the leader in establishing shared facilities through the Shared Equipment Authority by providing space and personnel to this endeavor.

Chemistry encompasses faculty that are among the top 10 most-cited researchers, and the department itself is in that echelon. The Chemistry department graduate program is ranked number 28 nationally by U.S. News & World Report in 2008, this department has the potential to move into the top-20 nationally if we move with alacrity and wisdom in rebuilding faculty, creating state-of-the-art space, recruiting post-doctoral and graduate students, and continuing to invest in our undergraduate program. In nanoscale science, Rice ranks in the top-10 in many areas according to a variety of surveys (e.g., Small Times), and our future leadership in this arena requires a strong and entrepreneurial Chemistry faculty. At the same time, biological sciences is exploding with opportunity, and Chemistry has the potential to make fundamental contributions across many domains in this area as well, with potential impact on medicine and health.

Because of its central disciplinary role, Chemistry has a remarkably heavy service teaching load. Laboratory experiences are an integral component of the curriculum, and serving the large number of enrollees in these courses is a major endeavor of the department. Innovations in developing modular projects that closely simulate activity in a research setting have made these laboratories more effective and enjoyable for our students. And, the introduction of computer analysis and result simulation infuses work in the laboratory with information technology that now pervades the scientific enterprise.



## Chemistry Facts

- 20 tenure-track faculty  
32 undergraduate majors
- 111 graduate students
- Two Nobel laureates for the discovery of “buckyballs” have been on our Chemistry faculty—the only two laureates at Rice to date.
- Over \$8 million annually in research expenditures

## Focused Research Areas

- Nanochemistry
- Materials Chemistry
- Biological Chemistry

## Special Activities

- Owlchemy
- Nanotechnology
- ACS Undergraduate Affiliates

### DID YOU KNOW?

- Annually, 2,600 students are taught by the Chemistry department, a number equal to Rice’s entire undergraduate population.
- Historically, Chemistry has been one of the top-ranked and highest-funded departments at Rice.
- The Chemistry department has successfully collaborated with the Museum of Fine Arts-Houston, to recruit a conservation scientist, Aniko Bezur, for an endowed position at the museum. Dr. Bezur has also been appointed as an adjunct faculty member in Chemistry and will participate in department activities and teach analytical chemistry and art courses. As part of this endeavor, a new course was jointly taught by Professor Ken Whitmire and several MFAH conservators in 2006—CHEM 176: The Chemistry of Art. This course was so successful that Rice’s Visual Arts department cross-listed it in its curriculum.

## For More Information



[www.chem.rice.edu](http://www.chem.rice.edu)

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## Wiess School of Natural Sciences

<http://natsci.rice.edu/>

Kathleen S. Matthews, Dean

Chemistry has selected two primary areas for its continuing focus into the future—nanochemistry (and materials chemistry more broadly) and biological chemistry. The contributions from chemistry to these disciplines have been growing in prominence. Other schools have also recognized these important domains for the future of chemistry as an enterprise, demonstrating that this selection was prescient when it was first made over 10 years ago.



With continued strategic choices and excellence in undergraduate and graduate coursework and cutting-edge research, Chemistry can continue its exciting trajectory and provide a foundation for other disciplines as we move into Rice’s Second Century.

## Selected Accomplishments in Chemistry

- Gustavo Scuseria’s paper, “Electronic Structure and Stability of Semiconducting Graphene Nanoribbons,” published in *Nano Letters* in 2006, was among the most-cited papers featured on the American Chemical Society’s “Hot Papers” Web site.
- Vicki Colvin, named American Association for the Advancement of Science Fellow, AAAS (2007-2008), 2007 Best & Brightest Honoree by *Esquire Magazine* and listed in Top Five (no. 2 of 5) for Nanotech Breakthroughs of 2006 in *Forbes/Wolfe Nanotech Report*.
- R. Bruce Weisman, founder of Applied NanoFluorescence, LLC (2004), was ranked as the 26th fastest-growing Houston-based technology company and was winner of the 2007 Paul Frison Accelerator Award.
- Rice University chemist and nanocar inventor James Tour was selected Innovator of the Year in *Small Times* magazine’s Best of Small Tech Research Awards competition and was awarded the Arthur C. Cope Scholar of the American Chemical Society, 2007.
- *Awards and Honors:*
  - Cecilia Clementi - National Science Foundation Career Award, 2004; La Jolla Interfaces in Science Fellowship, 1999-2001
  - Jeffrey Hartgerink - Camille-Dreyfus Teacher Scholar Award, Dreyfus Foundation, 2007; Hamill Innovation Award, Rice University, 2007; Searle Scholar, 2006
  - Anatoly Kolomeisky - Hamill Innovation Award, Institute of Biosciences and Bioengineering, Rice University, 2006; Alfred P. Sloan Foundation Research Fellowship, 2004; National Science Foundation Career Award, 2002
  - Eugene Zubarev - Faculty Early Career Development Program Award from the National Science Foundation, 2006; Sloan Research Fellowship, Alfred P. Sloan Foundation, 2008-2010; the Norman Hackerman-Welch Young Investigator and assistant professor in chemistry, 2005