



RICE NATURAL SCIENCES

Department of Chemistry

GRADUATE STUDIES AT RICE UNIVERSITY

Graduate students in the Rice University Department of Chemistry have established an extraordinary record of achievement. A 2013 study by the Max Planck Society ranked Rice Chemistry at No. 1 in the world, based on the citation records of student publications. Coupled with a prolific publication rate (seven publications and nearly three first authorships), a typical student in the program publishes multiple papers cited in the top 10% worldwide.

Underlying the development of Rice chemists is a strong, dynamic, interdisciplinary faculty which included Nobel Laureates, six members of the National Academy of Sciences, and two members of the National Academy of Engineering. The low student to faculty ratio (3:1) ensures that students have ample access to faculty time, instrumentation, and other resources.



The doctoral program at Rice is built around a close-knit community that promotes student achievement. This collaborative environment was critical to the development of nanotechnology, having facilitated the work of two Nobel laureates in the discovery of buckminsterfullerene.

Rice's culture of collaboration has minimized barriers between research areas for decades. Chemistry faculty members hold appointments in four of the seven departments in the School of Natural Sciences at Rice and in six of the nine engineering departments (most Chemistry faculty members also hold appointments in an engineering department).

Rice chemists do not take a prescribed set of courses, but construct an individualized curriculum consisting of six courses in any area of science or engineering. This flexibility to customize courses is ideal for chemists who want to branch out into other areas and for people who want to move into chemistry from another discipline.

Rice University Department of Chemistry
P.O. Box 1892, MS-60
Houston, TX 77251-1892
Phone: 713-348-5820
Fax: 713-348-5155

Rice Chemistry website: chemistry.rice.edu/

Graduate recruiting email: gradchem@rice.edu

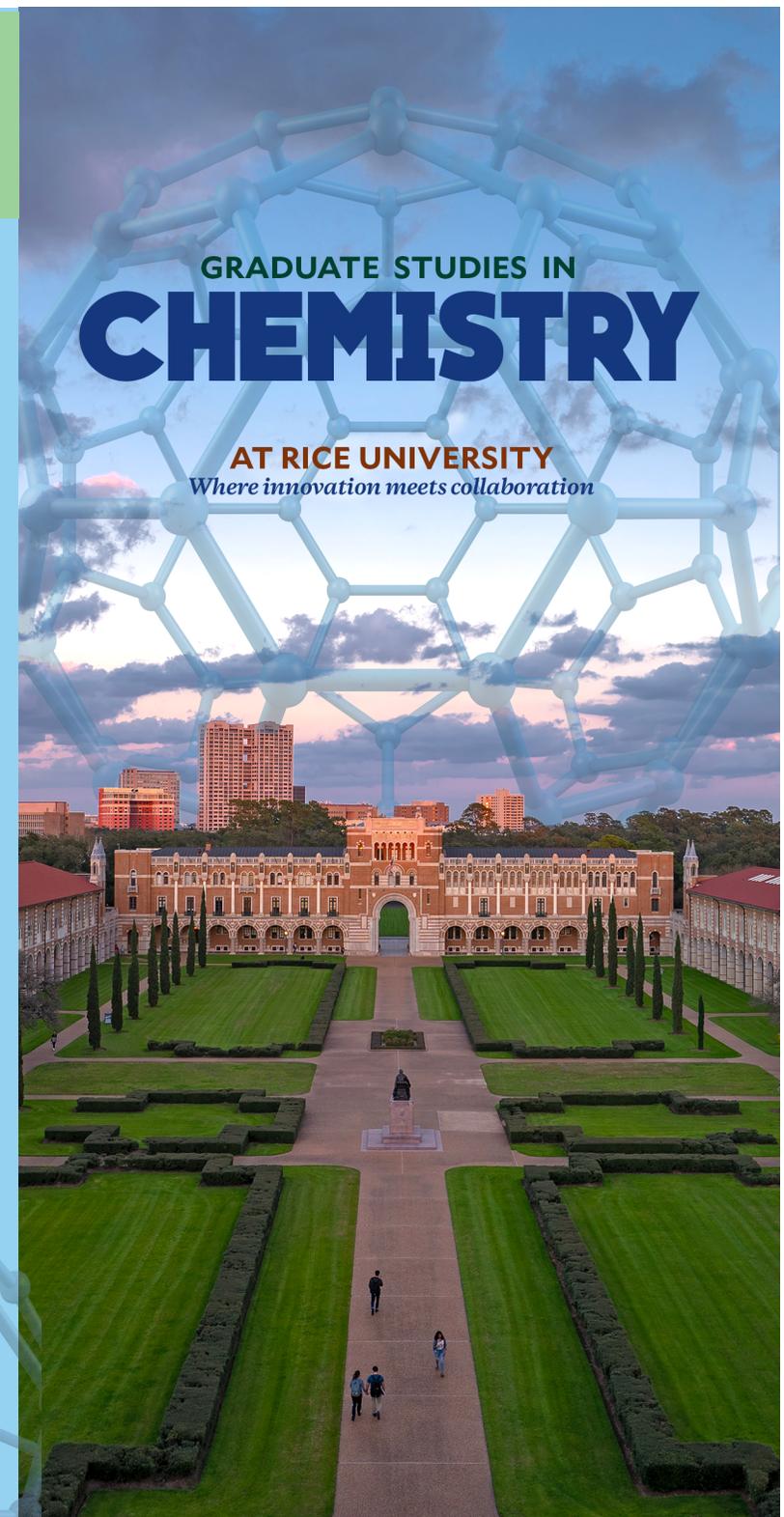
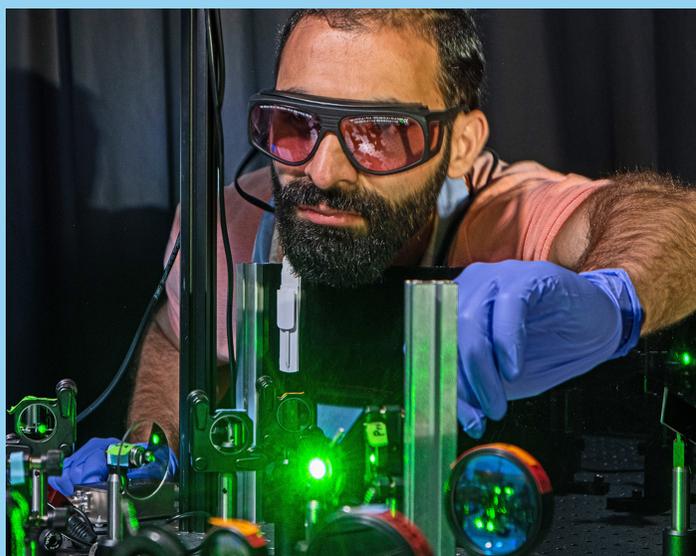
Facebook: facebook.com/ricechemistry/

LinkedIn: linkedin.com/in/rice-chemistry/

Twitter: twitter.com/ricechemistry



How to apply



GRADUATE STUDIES IN
CHEMISTRY

AT RICE UNIVERSITY
Where innovation meets collaboration



RICE NATURAL SCIENCES
Department of Chemistry

CORE FACULTY

Zachary T. Ball, Ph.D. (Stanford, 2004)
Reaction discovery, biomimetic catalysis, and organometallics for biology and medicine.

Anna-Karin Gustavsson, Ph.D.
(U Gothenburg, 2015) Development and application of 3D single-molecule, super-resolution microscopy with the goal of answering questions in physical chemistry, biophysics, and biomedicine related to cancer and other diseases.

***Naomi J. Halas, Ph.D.** (Bryn Mawr, 1987)
Synthesis and characterization of nanoparticles that interact with light; earth-abundant metallic and dielectric nanoparticle synthesis and properties; plasmonic photocatalysis, environmental applications; and applications in bioimaging and biomedical therapies.

Jeffrey D. Hartgerink, Ph.D. (Scripps, 1999)
Self-assembly of nanostructured materials with focus on molecular structures of proteins and peptide based biomaterials for tissue regeneration, drug delivery, and other biomedical applications.

Raúl Hernández Sánchez, Ph.D.
(Harvard, 2015) Synthetic organic/inorganic chemistry towards the development of supramolecular scaffolds for water purification, conjugated molecular nanotubes, and small molecule activation at polynuclear metal catalysts.

John S. Hutchinson, Ph.D. (UT Austin, 1980)
Chemistry education research. Development and assessment of new teaching materials and approaches.

Matthew Jones, Ph.D. (Northwestern, 2014)
Self-assembly of semiconductor and metallic nanocrystals for nanophotonics, complex systems, and dynamic inorganic materials.

Anatoly B. Kolomeisky, Ph.D. (Cornell, 1998)
Theoretical physical chemistry, biophysics and statistical mechanics. Modeling of biological transport systems and protein-DNA interactions and investigation of nanocars and artificial nanoscale devices.

László Kürti, Ph.D. (U Penn, 2006)
Synthetic organic chemistry specializing in the development of new catalytic asymmetric transformations, modes of chirality transfer, methods for the synthesis of bioactive N- and O-hetero cycles, novel aminating agents, and transition metal-free amination reactions.

Angel Marti, Ph.D. (U Puerto Rico, 2004)
Development of molecules to diagnose and treat disorders like Alzheimer's that involve protein aggregates and development of supramolecular materials based on nanoscale building blocks.

Seiichi P. T. Matsuda, Ph.D. (Harvard, 1994)
Bioorganic and organic chemistry, terpenoid biosynthesis, enzyme evolution, redesign of enzymes to have new activities, and genomic approaches to find biologically active molecules.

K.C. Nicolaou, Ph.D. (U London, 1972)
Specializing in organic chemistry with a focus on the synthesis of natural and designed molecules of biological and medical importance to cancer research.

***Matteo Pasquali, Ph.D.** (Minnesota, 1999)
Interaction of flow and liquid micro- and nanostructure in complex fluids, with application to the manufacturing of engineered materials.

Hans Renata, Ph.D. (Scripps, 2013)
Development of new biocatalytic reactions for organic synthesis and novel chemoenzymatic approaches to complex molecules of medicinal importance.

Peter Rossky, Ph.D. (Harvard, 1978)
The elucidation of the fundamental molecular-level origins of chemical behavior in condensed phases and clusters using theory and computation.

Gustavo E. Scuseria, Ph.D. (U Buenos Aires, 1983)
Development of theoretical and computational quantum chemistry techniques. Application of quantum mechanics to predict the structure and properties of molecules, materials and nanostructures.

James Shee, Ph.D. (Columbia, 2019)
Electronic structure theory with stochastic and quantum algorithms for d- and f- block chemistry.

James M. Tour, Ph.D. (Purdue, 1986)
Organic chemistry, materials science, polymer chemistry, nanoscience, and nanotechnology.

R. Bruce Weisman, Ph.D. (U Chicago, 1977)
Basic studies of carbon nanotube spectroscopy and photophysics and related analytical, mechanical engineering and biomedical applications.

Julian G. West, Ph.D. (Princeton, 2017)
Design and development of new catalytic reactions for synthetic organic chemistry and cancer research.

Kenton H. Whitmire, Ph.D. (Northwestern, 1982)
Inorganic and organometallic chemistry; precursor design for advanced nanomaterials; structural and mechanistic chemistry; catalysis; bioactivity of heavy main group elements.

Peter G. Wolynes, Ph.D. (Harvard, 1976)
Theoretical chemical physics; theory of glasses; protein dynamics and folding; Stochastic cell biology.

Han Xiao, Ph.D. (Scripps, 2015)
Development of chemical biology tools to study complex biology system and develop novel therapeutic strategies.

Samantha Yruegas, Ph.D. (Baylor, 2019)
Biocompatible and sustainable main group-based catalyst and method development for synthesis of innovative pharmaceuticals, optoelectronic devices, and polymers.

Eugene R. Zubarev, Ph.D. (Russian Academy of Sciences, 1996)
Organic chemistry and polymer chemistry, synthesis and characterization of self-assembling molecules.

***JOINT FACULTY**

Pulickel Ajayan, Ph.D.
Materials Science and NanoEngineering

Pedro J. Alvarez, Ph.D.
Civil and Environmental Engineering

Gang Bao, Ph.D.
Bioengineering

Mingjie Dai, Ph.D.
Bioengineering

Michael Diehl, Ph.D.
Bioengineering

Xue (Sherry) Gao, Ph.D.
Chemical and Biomolecular Engineering

Jason H. Hafner, Ph.D.
Physics and Astronomy

Yimo Han, Ph.D.
Materials Science and NanoEngineering

Oleg Igoshin, Ph.D.
Bioengineering

Jun Lou, Ph.D.
Materials Science and NanoEngineering

Fred MacKintosh, Ph.D.
Chemical and Biomolecular Engineering

Amanda Marciel, Ph.D.
Chemical and Biomolecular Engineering

Carrie Masiello, Ph.D.
Earth, Environmental and Planetary Sciences

Kevin McHugh, Ph.D.
Bioengineering

Antonios G. Mikos, Ph.D.
Bioengineering

Emilia Morosan, Ph.D.
Physics and Astronomy

Jose Onuchic, Ph.D.
Physics and Astronomy

George N. Phillips, Jr., Ph.D.
BioSciences

Haotian Wang, Ph.D.
Chemical and Biomolecular Engineering

Michael S. Wong, Ph.D.
Chemical and Biomolecular Engineering

Boris I. Yakobson, Ph.D.
Materials Science and NanoEngineering

Laurence Y. Yeung, Ph.D.
Earth, Environmental and Planetary Sciences