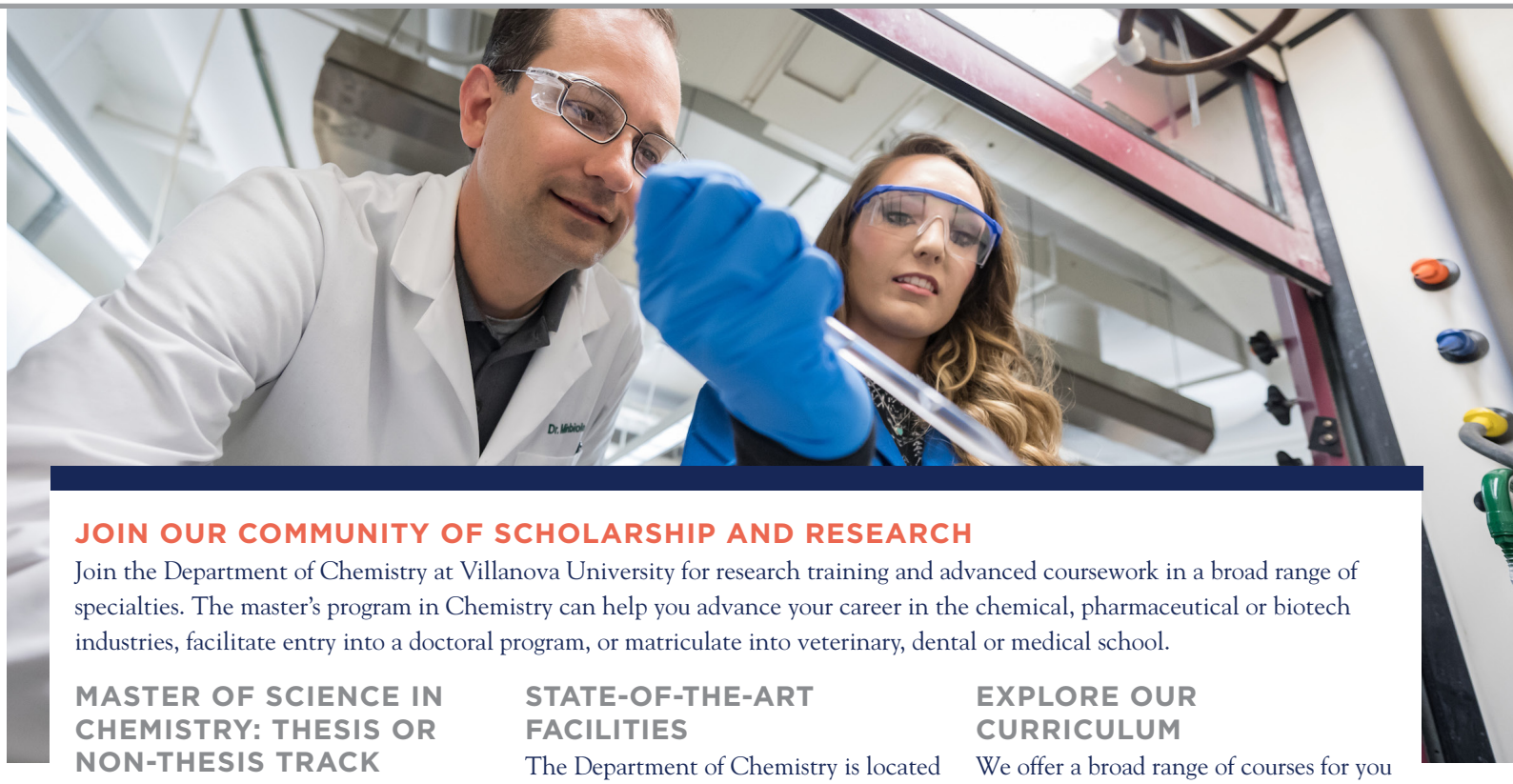
GRADUATE STUDIES

Chemistry

VILLANOVA UNIVERSITY



JOIN OUR COMMUNITY OF SCHOLARSHIP AND RESEARCH

Join the Department of Chemistry at Villanova University for research training and advanced coursework in a broad range of specialties. The master's program in Chemistry can help you advance your career in the chemical, pharmaceutical or biotech industries, facilitate entry into a doctoral program, or matriculate into veterinary, dental or medical school.

MASTER OF SCIENCE IN CHEMISTRY: THESIS OR NON-THESIS TRACK

The master's degree program at Villanova offers both a thesis and a non-thesis track for students based on their individual goals. Students in the full-time program pursue a degree with the thesis option and work under the direction of a faculty mentor. Part-time students may pursue the non-thesis option.

- The thesis track option requires successful completion of 30 credits, including two core courses, four electives, three research courses and a thesis preparation course. In addition, full-time students serve as teaching assistants and receive a stipend and tuition remission.
- The non-thesis option requires three core courses and seven electives.
- Students in both tracks may take special topics courses.

STATE-OF-THE-ART FACILITIES

The Department of Chemistry is located in the Mendel Science Center, where research is conducted in state-of-the-art laboratories stocked with all required safety features and equipment. The Department of Chemistry is equipped with a full complement of modern analytical instrumentation, including a brand new 500 MHz NMR spectrometer, an X-ray diffractometer with single crystal and powder capabilities, LC/MS systems, GC/MS systems and multiple GC, LC, FTIR, UV-Vis and fluorescence spectrometers. The Department also has a full suite of biochemical instrumentation, including a Typhoon FLA 9500 laser imager, FPLC, high speed centrifuges, laminar flow hoods for cell culture work, and shaking incubators for bacterial or yeast cell growth.

EXPLORE OUR CURRICULUM

We offer a broad range of courses for you to explore. Courses are taught in the evening to accommodate part-time students with full-time jobs. Courses include topics in organic chemistry, inorganic chemistry, physical chemistry, environmental chemistry, analytical chemistry, biochemistry, solid state and materials chemistry, polymer chemistry, crystallography, metabolism, computational chemistry, chemistry in industry, and a variety of special topics and research courses. You will find a complete list of courses and course descriptions at **gradchem.villanova.edu**.

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STUDY WITH OUR DISTINGUISHED FACULTY

Temer S. Ahmadi, PhD
Associate Professor
Materials/Physical Chemistry: Synthesis, optical and thermal properties of metal and metal oxide nanomaterials

Joseph W. Bausch, PhD
Assistant Professor
Organic and Computational Chemistry: Synthetic and computational studies of electron-deficient clusters, carborane synthesis, structure prediction

Eduard G. Casillas, PhD
Associate Professor
Organic Chemistry: Natural product synthesis, synthesis of antagonists for plant/fungal secondary metabolic pathways, terpene biomimetic synthesis

Aimee L. Eggler, PhD
Assistant Professor
Biochemistry: Oxidative and electrophilic stress, mechanisms of cytoprotective enzyme induction by plant-derived chemicals, synergy, human cell lines

Bryan C. Eigenbrodt, PhD
Assistant Professor
Analytical/Materials Chemistry: Synthesis and electrochemical characterization of fuel cell catalysts; exploring the chemistry of algal biofuel generation

Robert M. Giuliano, PhD
Professor
Organic Chemistry: Synthetic organic and carbohydrate chemistry, synthesis of natural products

Amanda M. Grannas, PhD
Professor
Analytical/Environmental Chemistry: Photochemistry, pollutant fate, snow/ice chemistry, ice core analysis, dissolved organic matter chemistry, climate change

Ryan P. Jorn, PhD
Assistant Professor
Physical/Theoretical Chemistry: Multi-scale modeling of charge transport in electrochemical systems and materials for rechargeable battery technology

W. Scott Kassel, PhD
Professor
Inorganic Chemistry: Solid-base catalysis, X-ray diffraction, synthesis of chiral pyrrolidine transition metal complexes as enantioselective catalysts

Daniel A. Kraut, PhD
Associate Professor
Biochemistry: Mechanism and kinetics of unfolding, degradation and partial degradation of proteins by the proteasome

Anthony F. Lagalante, PhD
Professor
Analytical Chemistry: Mass spec instrumentation and methodology with applications in agricultural insecticides, environmental toxins, art conservation

Kevin P. C. Minbiole, PhD
Professor and Chair
Organic Chemistry: Natural products chemistry, medicinal chemistry, organic synthesis, identification of amphibian defense compounds

Brian K. Ohta, PhD
Associate Professor
Organic Chemistry: NMR spectroscopy, intermediate characterization in photosensitized oxidation reactions, hydrogen bond asymmetry

Jennifer B. Palenchar, PhD
Associate Professor
Biochemistry: Characterization of trypanosome transcription complexes, mechanistic enzymology of trypanosome metabolic enzymes

Jared J. Paul, PhD
Associate Professor
Inorganic Chemistry: Proton coupled electron transfer, synthesis of transition metal catalysts for solar energy conversion, photochemistry, electrochemistry

Barry S. Selinsky, PhD
Professor
Biochemistry: Membrane biophysics, structural analysis of membrane proteins, membrane-active antibiotics

Deanna L. Zubris, PhD
Associate Professor
Organometallics/Polymer Chemistry: Development of metal-ligand complexes as catalysts for polymerization, homogeneous catalysis

FOR MORE INFORMATION OR TO APPLY:
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