

DISCOVER INNOVATE CREATE EXPLORE
UCMERCED GRADUATE STUDIES
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UCMERCED | GRADUATE
DIVISION



GRADUATE STUDIES AT UC MERCED

Attending graduate school is an important decision.

Choices about what and where to study are as individual as you are.

When reviewing your options, remember to weigh your career goals, academic interests and financial resources, and consider all that UC Merced has to offer.

At the first American research university of the 21st century, UC Merced's graduate community is bound by learning, discovery and engagement. Small academic programs, close working relationships between students and faculty members and an interdisciplinary approach to learning foster a unique foundation for students to explore the connections between related fields while acquiring mastery in specialized areas.

The UC Merced campus is ideally located in the heart of the San Joaquin Valley, reflecting the poetry of its landscape, history, resources and diverse cultures while capitalizing on and expanding the Valley's connections to the emerging global society. The university recognizes and appreciates the value of a natural laboratory, where research can push the frontiers of the local, national and global intellect.



THE LOWER LEVEL OF THE LEO AND DOTTIE KOLLIGIAN LIBRARY IS A POPULAR GATHERING PLACE FOR STUDENTS.





CULTURE

PASSION AND UNCOMPROMISING HIGH STANDARDS fuel a sense of academic, social and environmental responsibility among UC Merced students, faculty and staff.

The university's values are well represented by the Leo and Dottie Kolligian Library, which houses unrivaled information resources and is certified gold by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. The library balances a sense of community and individual respect, as the upper levels are characterized by peaceful corners where students can tackle their work quietly, while the lower level vibrates with energy. It's the perfect place to meet friends, grab a bite to eat, study or relax.

MODERN TECHNOLOGY is deeply interwoven into all facets of the UC Merced campus. Superior information technology infrastructure enables the UC Merced community to stay connected and productive. It encompasses innovative web technologies, smart classrooms and computer labs, digital storage and displays, video presentations, software licensing, printing and programming.

TAKE IT A STEP FURTHER. Modern technology is invented on the UC Merced campus. From capturing solar energy and increasing the power of lasers to discoveries in energy, communications and computer-generated intelligence, talented researchers

have used the campus's laboratories and classrooms to produce technologies that have the potential to change lives, benefit industries and help improve communities.

GREEN is a culture. UC Merced has energy-efficient buildings and water-wise landscaping, and its purchases are guided by its environmental principals. The campus is the first to achieve environmental certification for every one of its buildings under the U.S. Green Building Council's LEED program. Students participate through recycling, helping compost and reduce food-packaging waste, environmental research and clubs dedicated to helping the Earth.

DIVERSITY matters. Students and scholars from across the world contribute their voices and traditions to the campus and are positioning UC Merced as a leading global institution. The diverse backgrounds, experiences and perspectives of students, scholars and faculty members offer much to communities within the wider Valley, where local issues often mirror those of the global village: environmental and economic challenges; immigration; cultural understanding; and emerging opportunities.

UNIVERSITY ENROLLMENT

| | |
|----------------|--------------|
| Undergraduates | 5,437 |
| Graduates | 340 |
| TOTAL | 5,777 |

GRADUATE ENROLLMENT BY ETHNICITY

| | | | |
|--------------------------------|----|-------------------|-----|
| African American | 7 | White | 133 |
| Asian/Pacific Islander | 37 | Two or More Races | 13 |
| Latino/Hispanic | 41 | Nonresident | 97 |
| Native American/Alaskan Native | 2 | Other | 10 |



TOP: GRADUATE AND UNDERGRADUATE STUDENTS USE THE METTLER-TOLLEDO REACT-IR TO STUDY CATALYTIC REACTION IN REAL-TIME.

BELOW: PROFESSOR PATRICIA LIWANG IS A BIOCHEMIST AND STRUCTURAL BIOLOGIST WHO USES NUCLEAR MAGNETIC RESONANCE (NMR) IN HER WORK ON ANTI-INFLAMMATORY PROTEINS AND HIV INHIBITORS.



RESEARCH | research.ucmerced.edu

RESEARCH IS THE CORNERSTONE of the UC Merced campus. Innovative faculty members and students conduct cross-disciplinary research that brings answers to complex problems affecting our region, the state and beyond. Research strengths cover an array of fields, including climate change, solar and renewable energy, water quality and resources, artificial intelligence, cognitive science and biomedical topics.

THE CENTER FOR COMPUTATIONAL BIOLOGY (UCM-CCB) is a new research and education center at UC Merced. The center sponsors multidisciplinary scientific projects in which biological understanding is guided by computational modeling. The center also facilitates the development and dissemination of graduate course materials based on the latest research in computational biology.

THE UC MERCED ENERGY RESEARCH INSTITUTE (UCMERI) focuses on renewable energy supply systems. UC Merced is developing novel solutions for a reliable, cost-competitive and environmentally-friendly energy system. As part of an international community of energy experts, UC Merced is positioned to develop new technologies that challenge the status quo of the current energy economic system.

THE HEALTH SCIENCES RESEARCH INSTITUTE (HSRI) applies knowledge from advanced research to create solutions for complex health issues. Research themes include the biomolecular basis of health and disease, prevention and control of chronic disease, health disparities, immunology and infectious disease and stem cell biology.

THE ROY FAMILY GENOME CENTER was founded in 2007 to promote and develop the use of molecular biology in research programs at UC Merced.

THE SIERRA NEVADA RESEARCH INSTITUTE (SNRI) has experts in the natural sciences, engineering and policy sciences working together to address resource-related questions for the Sierra Nevada and the Valley, exploring fields like hydrology, fire science, ecology and climate change.

THE STEM CELL INSTRUMENTATION FOUNDRY (SCIF) provides stem cell researchers at UC Merced and throughout California access to advanced instruments, techniques and collaborators for single cell analysis. The foundry will enable innovations in biotechnologies that will lead to new discoveries about stem cells; discoveries that will enable researchers to increase our understanding about the molecular signals that influence the properties and behavior of stem cells.

PARTNERSHIPS with other UC campuses and with entities such as Lawrence Livermore National Laboratory, Sequoia-Kings Canyon and Yosemite national parks enhance education and research at UC Merced.

ACADEMICS

CUTTING-EDGE DISCOVERY is complex. UC Merced faculty members are dedicated to nurturing an academic culture and institutions that foster interdisciplinary and multidisciplinary research and education.

This commitment acknowledges that some of the greatest challenges confronting our civilization, as well as some of the greatest intellectual opportunities of our time, require cross-disciplinary approaches.

STRONG FOUNDATIONS in core areas and methodologies are necessary to all academic inquiry. Through rigorous classroom experience, UC Merced graduate students receive a world-class education in these core subjects. This technical and conceptual “tool box” can be readily adapted to societal needs and research themes.

FINANCIAL SUPPORT at UC Merced is impressive and competitive. Approximately 95 percent of graduate students receive funding. Going forward, UC Merced expects to expand its financial resources through endowments and community donors.

GRADUATE CLASS LEVEL

| | |
|----------------------------|-----|
| Master's degree candidates | 41 |
| Doctoral degree candidates | 299 |

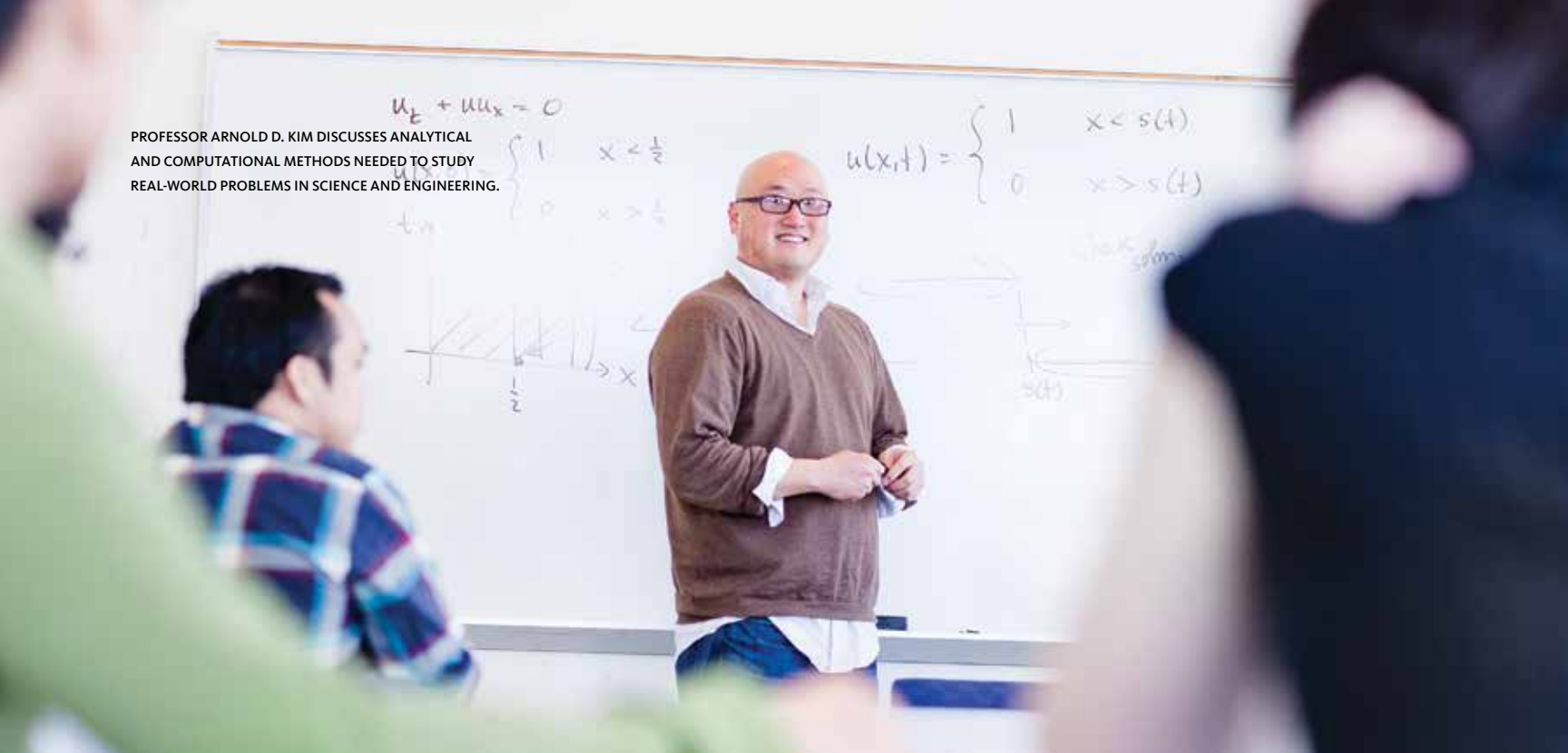
GRADUATE ENROLLMENT BY DISCIPLINE

| | |
|---|----|
| Applied Mathematics | 18 |
| Biological Engineering and Small Scale Technologies | 20 |
| Chemistry and Chemical Biology | 16 |
| Cognitive and Information Sciences | 23 |
| Electrical Engineering and Computer Science | 31 |
| Environmental Systems | 32 |
| Mechanical Engineering | 25 |
| Physics | 34 |
| Psychological Sciences | 33 |
| Political Science | 10 |
| Quantitative and Systems Biology | 56 |
| Social Sciences | 11 |
| Interdisciplinary Humanities | 31 |

Spring 2014 data prepared by Institutional Planning

BELOW: PROFESSOR IGNACIO LÓPEZ-CALVO TEACHES A COURSE ON CARIBBEAN WOMEN'S LITERATURE.



A photograph of Professor Arnold D. Kim, a bald man with glasses wearing a brown sweater, standing in a classroom and smiling. He is positioned in front of a whiteboard. The whiteboard contains mathematical equations and diagrams. To the left, the Burgers' equation $u_t + uu_x = 0$ is written, along with a piecewise function for $u(x,t)$ and a graph of a shock wave. To the right, a similar piecewise function is shown, and a graph of a rarefaction wave is visible. The foreground shows the blurred heads of students in a lecture hall.

PROFESSOR ARNOLD D. KIM DISCUSSES ANALYTICAL AND COMPUTATIONAL METHODS NEEDED TO STUDY REAL-WORLD PROBLEMS IN SCIENCE AND ENGINEERING.

GRADUATE PROGRAMS AND EMPHASES

APPLIED MATHEMATICS | appliedmath.ucmerced.edu

Applied Mathematics at UC Merced seeks to solve real-world problems by exploring the applications of mathematics in the advancement of life sciences, physical sciences, engineering and social sciences.

The interdisciplinary research and training emphasis provides master's and doctoral students with a background in the fundamental tools of applied mathematics, including ordinary and partial differential equations, asymptotics and perturbation methods, numerical analysis and scientific computing. Research projects allow students to explore the promising academic areas of ocean convection, ultrafast optics, coronal mass explosions, atomic physics and optical imaging of tissues. Applications are accepted from a wide variety of undergraduate majors, including, but not limited to, mathematics, engineering, physics and chemistry.

The engineering sciences are undergoing a vast and fundamental metamorphosis from isolated disciplines to more integrative and multidisciplinary topics.

The Biological Engineering and Small-scale Technologies (BEST) emphasis group at UC Merced offers training in synergistic areas of biological engineering and materials engineering. Research projects are available on topics ranging from fundamental characterization of materials to tissue engineering, and coursework provides a background in the tools of biologics and integration of modern materials. The academic group offers opportunities for students interested in interdisciplinary projects at the interface between biological engineering, nanotechnology, bioelectrical engineering, mechanical engineering, computer science, and materials characterization and design.

GRADUATE STUDENT SILIN SA AND PROFESSOR KARA MCCLOSKEY WORK ON COAXING STEM CELLS INTO BEATING HEART CELLS FOR DEVELOPING CARDIAC TISSUE PRODUCTS.



FORMER GRADUATE STUDENT YAZHOU HUANG DEMONSTRATES THE UC MERCED COMPUTER GRAPHICS LAB'S FULL-BODY-MOTION-CAPTURE SYSTEM USED FOR HIS RESEARCH ON MOTION-CAPTURE PROCESSING AND RE-USE FOR VIRTUAL TRAINERS. HUANG IS NOW LEAD RESEARCH AND DEVELOPMENT ENGINEER AT EON REALITY INC., IN IRVINE.





ELECTRICAL ENGINEERING | eecs.ucmerced.edu AND COMPUTER SCIENCE

UC Merced's graduate training in Electrical Engineering and Computer Science offers individualized, strongly research-oriented courses of study leading to master's and doctoral degrees.

The academic group is organized to allow students to pursue cutting-edge research in modern fields of computer science. Current research topics include computational neuroscience, digital information processing and informatics, database design and development, mobile ad-hoc and sensor networks, distributed computation, algorithm design and testing, artificial intelligence and robotics, computer graphics and animation, and image processing and analysis.

Together with UC Berkeley, UC Davis and UC Santa Cruz, UC Merced is part of the Center for Information Technology Research in the Interest of Society (CITRIS). EECS faculty members are involved in various activities and research projects supported by CITRIS. Electrical Engineering and Computer Science is highly cross-disciplinary with connections to faculty members from all three schools at UC Merced.

One of the benefits of our program is that UC Merced is part of the Center for Information Technology and Research in the Interest of Society (CITRIS), which is a four-campus collaboration between UC Merced, UC Berkeley, UC Davis and UC Santa Cruz. It gives faculty members and their graduate students opportunities to collaborate with researchers on other campuses.


The Environmental Systems graduate program strives to equip master's and doctoral students with expertise that will help them to improve scientific understanding of Earth as an integrated system of atmosphere, hydrosphere, lithosphere and biosphere.

Courses are designed to provide knowledge of the scientific principles underlying the function and sustainability of natural and engineered ecosystems, as well as the policies affecting them.

Participating faculty members are affiliated with the schools of Engineering, Natural Sciences, and Social Sciences, Humanities and Arts. Their research strengths include Earth systems science, ecology and evolutionary biology, spatial analysis, environmental engineering, air quality, geochemistry, solar energy, climatology, hydrology, policy and economics.



MARILYN FOGEL, PROFESSOR OF ECOLOGY, LIFE AND ENVIRONMENTAL SCIENCE, STUDIES THE BIOGEOCHEMISTRY OF PLANTS, MICROBES AND ANIMALS USING STABLE ISOTOPE MASS SPECTROMETRY INSTRUMENTS. SHE IS EXAMINING PLANTS OUTSIDE THE UNIVERSITY'S VERNAL POOL AND GRASSLANDS CAMPUS RESERVE SYSTEM WITH STUDENT JUSTIN SINGH.

A young Black man with glasses and a beard is smiling broadly, looking upwards and to the right. He is wearing a blue t-shirt with yellow patches. He is holding a white model airplane with red and black accents. The background is a blurred outdoor setting with other model airplanes and a building.

UNMANNED AERIAL SYSTEMS, OR DRONES, ARE BEING DEVELOPED FOR AGRICULTURAL AND ENVIRONMENTAL RESEARCH APPLICATIONS. BY EQUIPPING THESE FLYING ROBOTS WITH CAMERAS AND SENSORS, HIGH RESOLUTION MULTI-SPECTRAL IMAGERY CAN BE OBTAINED FOR LAND SURVEYING, INVASIVE SPECIES MONITORING, CROP YIELD ESTIMATIONS AND MANY OTHER APPLICATIONS THAT CAN DIRECTLY BENEFIT THE CENTRAL VALLEY.

MECHANICAL ENGINEERING | meam.ucmerced.edu

The Mechanical Engineering academic group at UC Merced provides master's and doctoral students with solid foundations in mechanical and thermal-fluid sciences and a comprehensive training of modern research techniques.

Course instruction is based on mathematical and scientific principles that underlie the foundations of mechanical engineering, emphasizing engineering applications and research innovations in diverse topics such as mechanical sciences (advanced dynamics, control systems, continuum mechanics, tribology) and thermal-fluid sciences (viscous flows, rheology, heat transfer, mass transfer) and interdisciplinary sciences (energy and biological systems, mechatronics).

Applications of the fundamental principles of mechanical and thermal-fluid sciences allow us to affect virtually all fields of science and technology from macro- to atomic scale.

Students have opportunities to conduct research in both field and lab environments where the most modern techniques and methodologies are employed to solve some of the most challenging problems of our time. The goal of this program is to provide the students with a modern, comprehensive and interdisciplinary educational experience that will prepare them for successful careers in the current and dynamically changing professional environment.



Explore

(FROM LEFT TO RIGHT) MICHAEL TENNENBAUM, CORRINE GRAY, CHRISTOPHER FERRI, PROFESSOR SAI GHOSH AND GEORGIY SHCHERBATYUK SET UP AN EXPERIMENT TO STUDY DYNAMIC BEHAVIOR OF QUANTUM DOTS AS THEY STUDY ULTRAFAST OPTICS FOR NANOMATERIALS.

PHYSICS | physics.ucmerced.edu

Physics faculty members at UC Merced are committed to excellence in research and offer a variety of fundamental and applied research opportunities for graduate students in projects that are at the forefront of experimental and theoretical physics.

Our research program is strongly focused on interdisciplinary collaborations, allowing us to work in both traditional research areas such as condensed matter, atomic, molecular and optical (AMO), statistical physics and nanoscience, while pursuing emerging fields including soft matter, metamaterials, quantum information, solar energy and biological physics.

Researchers in our group have access to major facilities, such as vanguard laser systems, an electron microscopy facility, a nanofabrication facility and NMR on campus. Other large facilities, such as synchrotron light sources at Livermore and Berkeley labs, are within close driving distance and are routinely used by both students and faculty.


“A small group of graduate students is an advantage. You really feel like you are hitting the milestones of graduate school together.”

KATHERINE HARRIS,
Quantitative and Systems Biology
doctoral student

The life science field is shifting from a discipline based on qualitative observation and description into a quantitative science based on comprehensive data sets and predictive models. Coursework in this graduate program provides master's and doctoral students with foundations in modern biology, including computational biology, genomics and advanced instrumentation. Students engage in interdisciplinary projects at the interface of biology, computer science and bioengineering. Examples of research interests include biomolecular interactions, genomics and proteomics, cellular interactions and signal transduction, organ systems and whole animals (both vertebrate and invertebrate), comparative ecology, evolution and organismal biology and computational biology.



FIRST-YEAR QUANTITATIVE AND SYSTEMS BIOLOGY GRADUATE STUDENT BRIDGET MARTINEZ PERFORMS HER GRADUATE RESEARCH IN THE LABORATORY OF PROFESSOR RUDY M. ORTIZ.



STUDENTS AND FACULTY MEMBERS WORK CLOSELY IN THE LAB TO DESIGN NEW CATALYSTS AND DEVELOP NEW MATERIALS.

CHEMISTRY AND CHEMICAL BIOLOGY | chemistry.ucmerced.edu

Research in chemistry and chemical biology at UC Merced is cutting edge and highly interdisciplinary, occurring at the ever-blurring interface between chemistry, biology, physics and engineering. Our collaborative environment, coupled with strong research ties inside UC Merced and across the country, provides students with the opportunity to become excellent scientists while answering difficult, topical questions.

Graduate students have opportunities to work with highly motivated and active research faculty members on a diverse range of problems in

physical chemistry, theoretical and computational chemistry, organic chemistry, biological chemistry, chemical biology, materials chemistry, nanoscience and energy science. All doctoral students in good standing are eligible for year-round financial support, including payment of fees and tuition.

We invite applications from students with strong backgrounds in chemistry, physics, biochemistry, or closely related disciplines who are interested in pursuing doctoral degrees.

SOCIAL SCIENCES | ss.ucmerced.edu

Social Sciences' doctoral-degree emphasis is organized into two tracks: sociology and public health.

SOCIOLOGY provides training in three primary areas of specialization: inequality (race, class, gender and sexuality); political sociology and social movements; and organizations and institutions.

PUBLIC HEALTH utilizes a multidisciplinary approach to assess the health needs of vulnerable populations, understanding the causes and determinants of health challenges and problems, and identifying ways to improve the public health system and the health of the population.

POLITICAL SCIENCE | polisci.ucmerced.edu

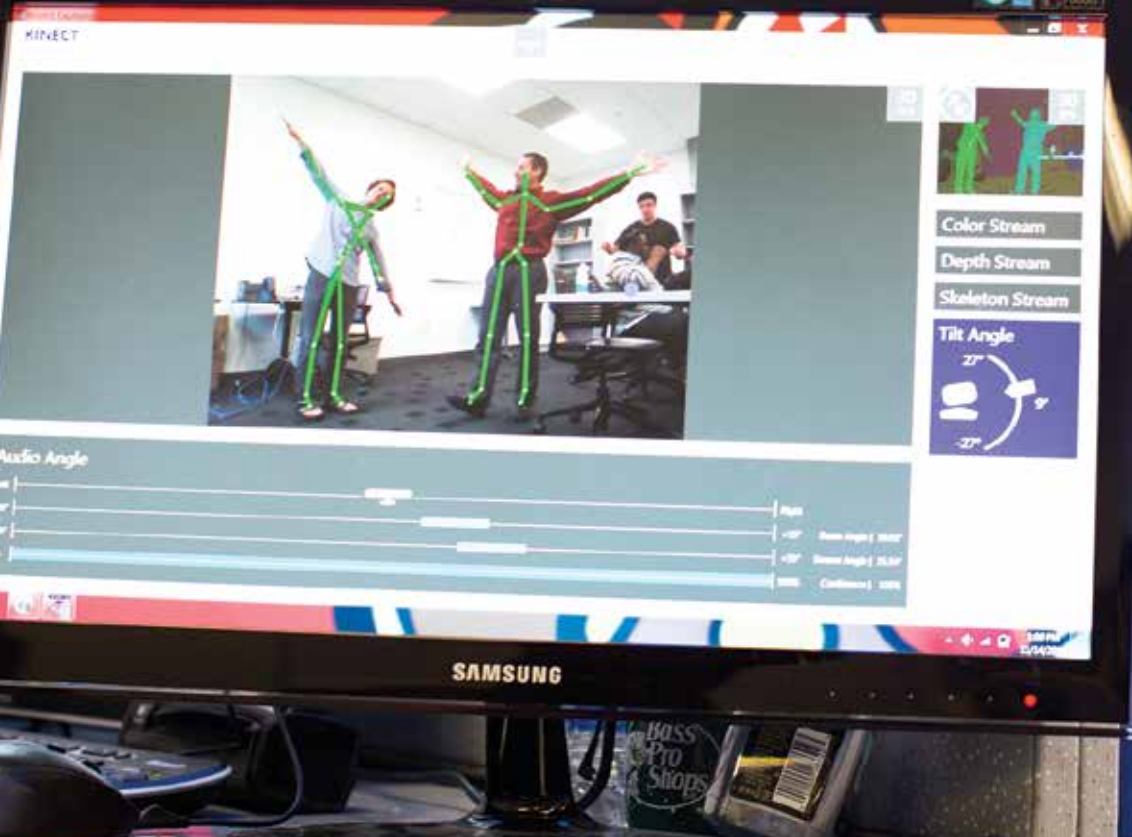
The graduate program in Political Science at UC Merced offers quantitatively focused graduate training culminating in the doctoral degree. Students are trained in two broad areas: Political Cognition and Behavior (CAB) and Political Institutions and Political Economy (PIPE).

All students take a common, core-research-methods sequence in addition to substantive coursework. The program is research intensive, innovative and tailored to students' individual interests within the field of political science.

The graduate program is small, enabling one-on-one faculty mentoring, and the structure of the program encourages students to work toward publishable research early in their graduate careers. The lack of traditional subfield boundaries allows students to ask and answer cutting-edge and interdisciplinary questions.



ABOVE: SHOWING OFF HIS COLLECTION OF CAMPAIGN BUTTONS, PROFESSOR NATHAN MONROE EXPLAINS THAT POLITICAL SCIENCE STUDENTS AT UC MERCED FOCUS THEIR STUDIES ON POLITICAL INSTITUTIONS AND BEHAVIOR.



STUDENTS USE STATE-OF-THE-ART TECHNOLOGIES TO ADVANCE
OUR KNOWLEDGE OF HUMAN BEHAVIOR AND COGNITION.

COGNITIVE AND INFORMATION SCIENCES | cogsci.ucmerced.edu

This academic program offers collaborative and interdisciplinary research training in cognitive science with an emphasis on computation, technology and applications.

The coursework in this graduate program integrates methods and approaches from neuroscience, linguistics, psychology, philosophy and computer science to study thought and behavior. The word “information” in Cognitive and Information Sciences denotes the program’s multiscale perspective on cognition and emphasizes on computational approaches and applications toward developing technologies that foster, and even aspire to emulate, intelligent behavior.

Research specialties include categorization, cognitive engineering, computational cognitive neuroscience, complex systems, neural networks, reasoning, perception and action, phenomenology, philosophy of cognitive science and psycholinguistics. Students who graduate from this Ph.D. program will have computational, technological, and application-oriented skills suitable for career opportunities in both academia and industry.

UC Merced offers graduate training in Psychological Sciences, culminating in a doctoral degree.

Faculty members specialize in three areas of psychology: developmental psychology, health psychology and quantitative psychology. Graduate training emphasizes a strong base of coursework, including methods, statistics and a one-year professional seminar covering the breadth of psychology. This base is supplemented by specialized work in one or more of the three tracks.

Students are actively engaged in research from the start of their graduate training through to the end of their doctoral work. Doctoral students engage in research that emphasizes close work with faculty mentors, with increasing independence over the years of training.

PROFESSOR ANNA SONG'S
RESEARCH PROGRAM FOCUSES
ON HEALTH RISK BEHAVIORS,
INCLUDING TOBACCO USE.





INTERDISCIPLINARY HUMANITIES | ih.ucmerced.edu

The Interdisciplinary Humanities Graduate Group (IHGG) is an innovative M.A. and Ph.D. program that incorporates anthropology, the arts, history, and language and literature. An IHGG education may include disciplinary specialization along with training in concepts that enrich all cultural research. The program exposes students to many humanities professions and trains students to engage the public.

Interdisciplinarity is the hallmark of the IHGG. Our faculty and graduate students read work from every one of our disciplines, and all of us utilize each other's frames of understanding. We share the task of explaining and expressing cultural complexity and contingency. IHGG students may work with social and cognitive scientists, natural scientists, and engineers as well as humanists.

PROSPECTIVE APPLICANTS | How and when to apply

Additional information on UC Merced graduate studies and the online graduate admissions application are available at graduatedivision.ucmerced.edu.

Prospective students are encouraged to begin the admissions process as early as possible during the prior academic year. Check our website for the most current domestic and international application fee requirements. The application deadline for all academic programs is Jan. 15; however, some programs may have earlier deadlines.

UC Merced offers extensive financial support for our graduate students. For more information on financial support please visit graduatedivision.ucmerced.edu/financial-support



LEFT AND ABOVE: UC MERCED'S INTERDISCIPLINARY APPROACH TO THE HUMANITIES ALLOWS EMERGING SCHOLARS TO CONSIDER A SUBJECT LIKE PERFORMANCE AS LITERARY, HISTORICAL, CULTURAL AND ARTISTIC ARTIFACT.



INTERNATIONAL STUDENTS

Students with credentials from universities outside the United States should begin the application process well in advance of the deadline. Applicants whose native language or language of instruction is not English must show evidence of having recently taken the Test Of English as a Foreign Language (TOEFL) or the International English Language Testing Service (IELTS) examination.

Please visit the Graduate Division website at graduatedivision.ucmerced.edu and the International Students and Scholars Office website at iss.ucmerced.edu for additional information.

HOUSING

Students are able to choose from a wide variety of housing options in the Merced community, including condos, houses, room rentals and apartments. For information on off-campus housing, please visit housing.ucmerced.edu.

PLANNING A VISIT?

Campus visits can be scheduled online, by phone and by email. Call us at 209-228-6316, email us at tours@ucmerced.edu or visit our website at tours.ucmerced.edu to make reservations using our online calendar.

PHONE: 209-228-4723
FAX: 209-228-6906
EMAIL: grad@ucmerced.edu
WEBSITE: graduatedivision.ucmerced.edu
FACEBOOK: [facebook.com/ucmgraddiv](https://www.facebook.com/ucmgraddiv)
TWITTER: twitter.com/ucmgraddiv

PROFESSOR MICHAEL J. SPIVEY'S EYETRACKING LAB ALLOWS RESEARCHERS TO UNDERSTAND HOW PEOPLE INTEGRATE LANGUAGE, VISION AND ACTION WITH MILLISECOND PRECISION.



GRADUATE DEGREES OFFERED

APPLIED MATHEMATICS

BIOLOGICAL ENGINEERING AND SMALL SCALE TECHNOLOGIES

CHEMISTRY AND CHEMICAL BIOLOGY

COGNITIVE AND INFORMATION SCIENCES

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

ENVIRONMENTAL SYSTEMS

MECHANICAL ENGINEERING

PHYSICS

POLITICAL SCIENCE

PSYCHOLOGICAL SCIENCES

QUANTITATIVE AND SYSTEMS BIOLOGY

SOCIAL SCIENCES

INTERDISCIPLINARY HUMANITIES

