

## RESEARCH AT UNIVERSITY OF CALIFORNIA, MERCED

Research is the pioneering work of the intellect, an adventure at the frontiers of knowledge in which faculty engage both their undergraduate and graduate students. It reflects mankind's indomitable spirit of optimism that we can and must do better. Every human pursuit benefits from the ongoing process of evaluation and discovery. As the first research university to be built in the 21st century, UC Merced is positioned for new approaches to research in support of the educational mission. As the 10th campus of the University of California, UC Merced joins in the University's unparalleled history of accomplishment. That history also sets the high standards that UC Merced must live up to.

As an undergraduate student at UC Merced, you will find faculty research enriching your education and your ability to analyze and critique information objectively. Exposure to research approaches will help you to begin to define solutions to the weighty problems with which humankind will wrestle during your lifetime. A highlight of your first year will be a freshman seminar in which a faculty member will introduce you to his or her current explorations. In addition, your undergraduate courses will be continually enriched and invigorated by faculty discoveries, which reflect an ever-evolving curriculum. You will also have formal opportunities to participate in ongoing faculty projects, joining graduate students and postdoctoral fellows in labs, field work and other research settings.

As a graduate student you will plumb the depths of some of the world's most challenging problems through your research and scholarly work. Graduate students work with faculty as apprentice scholars, building the skills needed to create and communicate discoveries in their field. The distinguishing feature of UC Merced's graduate programs is their interdisciplinary nature, which provides a breadth of knowledge that helps put studies into a wider context. You will join a community of scholars and set your course for a career. Part of your research experience will include working closely with your faculty mentor and advisory committee as you build professional expertise and prepare for future.

To foster discovery that brings faculty insights from many disciplines together, UC Merced is structuring many of its research and graduate educational activities around research institutes composed of faculty from multiple schools. At the outset two initial research organizations have been established to catalyze interdisciplinary research and scholarship: The Sierra Nevada Research Institute and the World Cultures Institute.

### THE SIERRA NEVADA RESEARCH INSTITUTE (SNRI)

The mission of the Sierra Nevada Research Institute is to discover and disseminate new knowledge that contributes to sustaining natural resources and promoting social well being in the San Joaquin Valley and Sierra Nevada regions of California. These regions are legendary for their scenic beauty, vast natural resources, physical and biological diversity, and cultural heritage. The San Joaquin Valley and the Sierra Nevada lead the nation in agricultural production and in several natural resource and recreation industries. However, rapid population growth; competition for natural resources; air, water and soil pollution; and competing land uses pose serious threats to the sustainability of these regions. Solving these problems requires the combined perspectives of a number of disciplines and multidisciplinary research efforts at the interface of traditional disciplines.

The mission of the Sierra Nevada Research Institute is accomplished through:

- Collaborative, multidisciplinary, fundamental research conducted by faculty, students, staff and affiliated scientists in natural sciences, engineering and social sciences
- Strong interactions with related research units within the UC system and close collaborative relations with scientists and managers at National Laboratories; local, state and federal agencies; and the National Park Service
- Extensive sharing of Sierra Nevada Research Institute data and information with public and private stake- holders

The Sierra Nevada Research Institute is organized around an Earth Systems Science model. This model combines the earth sciences (soils, geology, water and atmospheric sciences) with biological sciences (ecology and molecular biology) as well as environmental science, environ- mental engineering and social science in integrated studies of complex problems at the systems level. Through these balanced research efforts, the Sierra Nevada Research Institute serves as a source of objective scientific information as California faces the growing challenge of sustaining the integrity and quality of its human and natural resources into the future.

Through the Sierra Nevada Research Institute our students and faculty will have access to a variety of biological field stations in the Sierra Nevada, located in Yosemite, Sequoia and Kings Canyon National Parks.

In addition, the Virginia Smith Trust Reserve adjacent to the UC Merced cam- pus provides additional sites for research.

## THE WORLD CULTURES INSTITUTE

Merced and the San Joaquin Valley are historically and today a crossroads for rich mixes of peoples from throughout the world. For millennia before the arrival of Europeans, Native Americans developed an interdependent relationship with the Valley, foothills and mountain ecosystems. Today, the Valley is also part of a dynamic global economy, calling for a broad and deep understanding of many cultures and traditions. As a rap- idly growing agricultural region, the Valley is a place for understanding the ways in which different cultures think about stewardship of the environment.

California's location and immigrant heritage have situated it within the Pacific Rim region as one of the greatest centers of trade, commerce and cultural exchange the world has ever known. The Pacific Region is defined by mobility and migration that have resulted in new cultural practices and knowledge. The region is an unparalleled arena for the study of the changes rung in by sophisticated technologies and of the cultural effects of those changes.

People have come from around the world to make the San Joaquin Valley, California and the United States what they are today. The World Cultures Institute will be a place to understand better what has shaped and is shaping our modern cultural identities. As the World Cultures Institute grows, its faculty and staff will address several themes:

- Migration and displacement

- Histories and cultures of California, and particularly in the San Joaquin Valley
- Local, regional and national identities and boundaries, and their crossings
- Economics, religion, the arts and ethnic identity in the formation of the individual and society
- Nature and culture; and the relation of wilderness to the manmade landscape, with the role of technological invention in affecting both
- Agriculture and society
- Evolving and competing images (artistic, literary, cinematic, architectural) of California

Students are invited to participate in research with historians, anthropologists, artists, political scientists and policy specialists, economists, scholars of literature and languages, and others – even scientists. Internships with a cultural resources emphasis are anticipated with museums, arts centers, historical societies, community groups, libraries, public education organizations and National Parks.

## FUTURE INSTITUTES

UC Merced is committed to developing stellar research programs that will make a major impact in understanding the basis of and proposed solutions to complex problems facing society today. Understanding these problems and developing strategies to solve them requires input and expertise from multiple arenas. The institutes provide a framework for faculty, students and visiting scientists from multiple disciplines to come together to provide disciplinary and interdisciplinary expertise to solve complex problems.

- Health of the environment (SNRI)
- Helping people live together (World Cultures Institute)
- Sustainable and renewable energy (Energy Institute--proposed)
- Human health (SysBio Inst--proposed)

The WCI and SNRI were developed during conception of the campus and are present at its inception. The SysBio and Energy Institute are planned institutes that the faculty and administration are jointly developing.