The following faculty research projects are organized by colleges, and then alphabetically by department. Students are encouraged to look at related fields, as well as within their major departments for research projects which might be interesting to them. For example, the research project in the Theater department might also be interesting to sociology or education majors.

**Bourns College of Engineering**

**Bioengineering**

Faculty Mentor: Dr. Huinan Liu  
Research Setting: Lab  
Research Project: Dr. Liu’s Lab researches a variety of materials (nanoparticles, degradable polymers, degradable metals, composites, etc.) for medical implant and device applications. Students will be involved in material evaluation in cell culture systems. Students will learn how to grow cells and observe cell functions on a material using biochemical assays, optical microscopy, fluorescence microscopy and analysis of such data.

Faculty Mentor: Dr. Hyle Park  
Research Setting: Lab  
Research Project: Dr. Park’s lab researches structural and functional imaging of nerves using optical tomography: interested students will be involved with acquisition of data in limulus lateral compound eye and rat sciatic nerve animal models, processing and analysis of such data to study the ability of non-destructive optical imaging modalities to assess nerve viability and function.

**Chemical and Environmental Engineering**

Faculty Mentor: Dr. Nosang Myung  
Research Setting: Lab  
Research Project: My research interests include electrochemical nano systems (ENS) and advanced materials and process development for NEMS/MEMS including bio-MEMS. My research objective is to control nanoscale sized features to enhance material properties and device functions beyond those that we currently know. This summer we will be working with the synthesis of nanoengineered materials.

**Computer Science and Engineering**

Faculty Mentor: Dr. Frank Vahid  
Research Setting: Lab  
Research Project: Develop system that uses sensors/webcams to provide at-home monitoring/notification to help the aging (e.g. fall detection), deaf, blind, and others.
College of Humanities, Arts, and Social Sciences

Economics

Faculty Mentor: **Dr. Jorge Aguero**
Research Setting: Student can work anywhere with a computer.
Research Project: Dr. Aguero is conducting two projects about low-income countries. The projects explore the following questions: (1) How do families in low-income countries react to shocks? Can families protect the human capital of their children during crisis? Examples of crises include, but are not limited to, macroeconomic recessions, dramatic changes in prices, droughts, floods, and earthquakes. (2) What is the role of early childhood interventions on later economic outcomes in developing countries. Students for either project should be familiar with statistical analysis including multiple regressions and have a good command of statistical packages such as Stata, SPSS, or SAS.

English

Faculty Mentor: **Dr. Steven Gould Axelrod**
Research Setting: Library, office
Research Project: Dr. Axelrod will be working on research this summer which explores Allen Ginsberg and Cold War Poetics.

Faculty Mentor: **Dr. Rob Latham**
Research Setting: Library
Research Project: Students will work in Rivera Library’s Eaton Collection on professional and fan science fiction magazines, specifically those published during the 1960s and 1970s, looking for material relevant to Dr. Latham’s current book project on science fiction and counterculture.

Philosophy

Faculty Mentor: **Dr. Georgia Warnke**
Research Setting: Library and Office
Research Project: Dr. Warnke researches feminism, gender studies, identity, identity politics, political philosophy, hermeneutics, and critical theory. Students will be assisting in Dr. Warnke’s research project over the summer.
**Psychology**

Faculty Mentor: Dr. Tuppet Yates  
Research Setting: Child Laboratory  
Research Project: We have 2 studies in our lab. The first follows 250 preschool children across the transition into formal school and the second follows 200 foster youth as they age out of foster care. Our research studies explore processes underlying risk and resilience among vulnerable pediatric populations. Students have the opportunity to work directly with high-risk children and families, as well as coding observational data and collecting physiological and cardiac data.

**Sociology**

Faculty Mentor: Dr. Scott Brooks  
Research Setting: Office, Library, and Field (speaking with students)  
Research Project: Students’ duties will consist of two components: (1) Looking at the NBA (National Basketball Association) rosters and the tenure of the top drafted players for the last 15 years and (2) Doing field research in Los Angeles. This will consist of following UCR students home, interviewing them and their families and friends in order to understand home support, values, and networks that support and encourage Black students to succeed at/graduate from UCR.

Faculty Mentor: Dr. Vanesa Estrada  
Research Setting: Library and Possibly Field Work  
Research Project: Dr. Estrada will be working on three possible projects. One will be examining the impact of the foreclosure crisis on neighborhoods, primarily through analysis of 200 vs. 2010 census. This project is well suited for a student who has taken undergraduate level statistics. The second is an analysis of housing policy through Clinton and Bush administrations. The third option for a more qualitative/ethnographic oriented student would be a community study of neighborhoods which have experienced foreclosure crisis.

**Theatre**

Faculty Mentor: Dr. Tiffany Ann Lopez  
Research Setting: Library and Field work  
Research Project: This summer Dr. Lopez will be working on her research project entitled *Feeding the Pipeline: The Role of the Arts in Fostering Advancement Amongst Underrepresented Minorities in Higher Education*. This research project will be tailored to address the interests of students selected to work with this professor. Her goal will be to use the topic to mentor students in gaining research skills as well as skills for surviving the challenges faced by URMs as they advance in the pipeline toward graduate school and the profession.
College of Natural and Agricultural Sciences

Biology

Faculty Mentor: Dr. Theodore Garland, Jr.
Research Setting: Laboratory
Research Project: Behavior, physiology, and neurobiology of lines of mice that have been selectively bred for high voluntary wheel running. Publications on these mice can be found at http://biology.ucr.edu/people/faculty/Garland/Experimental_Evolution_Publications_by_Ted_Garland.html. Students will gather behavioral data and analyze how this data relates to the physiology of the mouse and to the mammal as a species.

Cell Biology and Neuroscience

Faculty Mentor: Dr. Margarita Curras-Collazo
Research Setting: Lab
Research Project: The research would involve the investigation of possible effects of environmental toxicants such as bisphenol A on the nervous system and characterization of PACAP knockout induced deficits in social behavior and physiological function.

Faculty Mentor: Dr. Prudence Talbot
Research Setting: Lab
Research Project: Project will involve working with lab teams on projects that involve stem cells and analysis of data from stem cell experiments.

Chemistry

Faculty Mentor: Dr. Guy Bertrand
Research Setting: Lab
Research Project: Dr. Bertrand’s lab works with synthesis of novel molecules (carbenes) and catalysis.

Faculty Mentor: Dr. Cindy Larive
Research Setting: Lab
Research Project: Dr. Larive’s lab is relating the structure of herapin to its biological function.

Faculty Mentor: Dr. Yadong Yin
Research Setting: Lab (Chemistry Laboratory for Materials Science)
Research Project: The lab works with magnetically tunable photonic materials; synthesis and characterization of nanostructured materials; and bioseparation by using nanomaterials.
Earth Sciences

Faculty Mentor: **Dr. Mary L. Droser**  
Research Setting: Field  
Research Project: Student will be accompanying primarily PhD students as a field assistant in NV and UT. Student needs no training in Earth Sciences but will learn a great deal about projects on Early life and climate change. Student will need to be prepared to camp and be without cell coverage and internet in remote settings. We will gain a huge experience in field geology.

Entomology

Faculty Mentor: **Dr. Thomas Miller**  
Research Setting: Lab  
Research Project: Students will work primarily with Dr. Miller’s Postdoctoral Fellow to research control of katydid pests by candidate fungal insecticides.

Environmental Science

Faculty Mentor: **Dr. James Sickman**  
Research Setting: Field research in Sequoia National Park; Sierra Nevada Lakes  
Research Project: Two possible projects: Students will work with Dr. Sickman in his investigations of effects of air pollution on alpine lake ecosystems. Dr. Sickman is also looking for students interested in biology and ecology to assist him and his students on investigations of Sierra Nevada lakes.

Mathematics

Faculty Mentor: **Dr. Julia Bergner**  
Research Setting: Office and Library  
Research Project: Dr. Bergner is currently working with combinatorial constructions in topology; she also works with groupoids and Egyptian fractions, but she will offer other options for study based on student interest.

Nematology

Faculty Mentor: **Dr. Isgouhi Kaloshian**  
Research Setting: Lab  
Research Project: Students will assist in a project studying insect effectors delivered insight the plant cells that compromises plant host immunity.