

MSRIP 2017 Faculty Research Projects

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. Xiaoping Hu**

Research Setting: Lab

Research Project: Development of molecular imaging probes, analysis of neuroimaging data, development of new MRI techniques.

<http://www.engr.ucr.edu/faculty/bio/hu.html>

CHEMICAL & ENVIRONMENTAL ENGINEERING AND MATERIAL SCIENCE

Faculty Mentor: **Dr. Bryan M. Wong**

Research Setting: Lab

Research Project: Computer simulations on materials, environmental environments (water) and light harvesting materials.

<http://www.engr.ucr.edu/faculty/chemenv/bryanmwong.html>

MECHANICAL ENGINEERING

Faculty Mentor: **Dr. Guillermo Aguilar**

Research Setting: Lab

Research Project: Dr. Princevac is interested in fundamental and applied fluid mechanics research—in particular, the application of fundamental turbulence concepts to studies in environmental flows.

<http://www.engr.ucr.edu/faculty/me/guillermoaguilar.html>

Faculty Mentor: **Dr. Marko Princevac**

Research Setting: Lab

Research Project: Dr. Guillermo's research involves biomedical optics and fluid mechanics.

<http://www.engr.ucr.edu/faculty/me/princevac.html>

College of Humanities, Arts, and Social Sciences

MEDIA & CULTURAL STUDIES AND ENGLISH

Faculty Mentor: **Dr. Richard T. Rodriguez**

Research Setting: Lab

Projects include: Chicano/a and Latino/a literature, film history and theory, LGBT studies, visual studies, cultural history.

<http://mcs.ucr.edu/richard-t-rodriguez-associate-professor/>

PSYCHOLOGY

Faculty Mentor: **Dr. Liz Davis**

Research Setting: Lab

Research Project: Children's development of emotion regulation; prosocial development, mindfulness mediation; bilingualism and emotional processes.

<http://www.psychology.ucr.edu/faculty/davis/index.html>

Faculty Mentor: **Dr. Brent Hughes**

Research Setting: Lab, library, field, etc.

Projects include: Psychological and neural basis of self-perception, social cognition, empathy, social influence, and decision-making.

Faculty Mentor: **Dr. Rachel Wu**

Research Setting: Lab/library, etc. in the CALLA (Cognitive Agility across the Lifespan via Learning and Attention) research lab (www.callalab.com).

Projects include: visual search and category learning with children, undergraduates and older adults.

<http://psychology.ucr.edu/faculty/wu/index.html>

Faculty Mentor: **Dr. Edward Zagha**

Research Setting: Lab

Research Project: Behavioral-training mice on various behavioral tasks, designed to study sensory detection and impulse control; histological-brain tissue preparation and microscopy to study the expression patterns of various genetic mouse preparations.

<https://psych.ucr.edu/faculty/zagha/index.html>

Faculty Mentor: **Dr. Weiwi Zhang**

Research Setting: Lab

Research Project: Lab research using multiple cognitive neuroscience methods; functional roles of working memory in higher cognition (fluid intelligence); interaction between emotion and memory.

<http://www.psych.ucr.edu/faculty/zhang/index.html>

SOCIOLOGY AND ETHNIC STUDIES

Faculty Mentor: **Dr. Alfredo Mirande**

Research Setting: Library, Field

Research Project: Chicano sociology, masculinity, constitutional law, civil Rights and the relationship among law, race, class and gender.

<http://ethnicstudies.ucr.edu/people/faculty/mirande/>

College of Natural and Agricultural Sciences

BIOLOGY

Faculty Mentor: **Dr. Chris Clark**

Research Setting: Lab

Research Project: (1) Examination of the aeroacoustic basis of the flight sounds of mosquitoes and flies: (2) wind tunnel experiments on the mechanics of how feathers flutter to produce sound.

Faculty Mentor: **Dr. Morris Maduro**

Research Setting: Lab

Research Project: Genetics of fat storage and metabolism in strains of the nematode *c.elegans*.

<http://www.biology.ucr.edu/people/faculty/Clark.html>

BOTANY AND PLANT SCIENCES

Faculty Mentor: **Dr. David Nelson**

Research Setting: Lab

Research Project: Plant molecular biology.

<http://plantbiology.ucr.edu/people/faculty/nelson.html>

Faculty Mentor: **Dr. Fedor Karginov**

Research Setting: Lab, library, field, etc.

Research Project: Molecular and cellular biology of gene regulation by RNA-binding proteins.

<http://www.psychology.ucr.edu/faculty/davis/index.html>

CHEMISTRY

Faculty Mentor: **Dr. Matthew Conley**

Research Setting: Lab

Research Project: Synthesis of materials and organometallic compounds for catalytic applications.

<http://chem.ucr.edu/faculty.html?id=223>

Faculty Mentor: **Dr. Jingsong Zhang**

Research Setting: Lab

Research Project: Dr. Zhang's research concentrates on atmospheric chemistry, air pollution monitoring, trace gas detection, chemical instrument development, optical spectroscopy and mass spectrometry studies of chemical reactions.

<http://chem.ucr.edu/faculty.html?id=29>

ENVIRONMENTAL SCIENCES

Faculty Mentor: **Dr. Francesca Hopkins**

Research Setting: Lab/Field

Research Project: Measurement of greenhouse gases.

<http://envisci.ucr.edu/faculty/hopkins.html>

PHYSICS AND ASTRONOMY

Faculty Mentor: **Dr. Yongtao Cui**

Research Setting: Lab

Research Project: Image nanomaterials with atomic force microscope. Build electronics to measure resistance at microwave frequencies.

<http://www.physics.ucr.edu/people/faculty/yongtaocui.html>

Division of Biomedical Sciences

Faculty Mentor: **Dr. Sika Zheng**

Research Setting: Lab- School of Medicine

Research Project: Dr. Zheng's lab studies the activity, mechanism, function and dysfunction of gene regulation at the RNA level, coding and noncoding, in the most complex organ—the brain.

https://medschool.ucr.edu/faculty_research/faculty_profiles/bio.html?page=zheng_sika.html

School of Public Policy

Faculty Mentor: **Dr. Julian Emmons Allison**

Research Setting: Lab/library, field

Research Project: (1) “Gender and Renewable Energy” requires updating literature and conducting/assisting with interviews; (2) “Ecological Grief” may require bibliographic research, will certainly require interviews, documentary work.

http://facultyprofiles.ucr.edu/gender_studies_dept/faculty/Juliann_Allison/index.html