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 and 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

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**College of Humanities, Arts, and Social Sciences**

**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. 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.
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.

Botany and Plant Sciences

Faculty Mentor: Dr. David Nelson  
Research Setting: Lab  
Research Project: Plant molecular biology.

Faculty Mentor: Dr. Fedor Karginov  
Research Setting: Lab, library, field, etc.  
Research Project: Molecular and cellular biology of gene regulation by RNA-binding proteins.

Chemistry

Faculty Mentor: Dr. Matthew Conley  
Research Setting: Lab  
Research Project: Synthesis of materials and organometallic compounds for catalytic applications.
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  

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