Botany & Plant Sciences

One of the best plant biology programs in the US featuring a wide range of research areas

Contact:

**Plant Biology Undergraduate Program**
Undergraduate Faculty Advisors:
Dr. Thomas Eulgem ([thomas.eulgem@ucr.edu](mailto:thomas.eulgem@ucr.edu))
Dr. Darrel Jenerette ([darrel.jenerette@ucr.edu](mailto:darrel.jenerette@ucr.edu))

**Plant Biology Graduate Program**
Graduate Staff Advisor:
Laura McGeehan ([laura.mcgeehan@ucr.edu](mailto:laura.mcgeehan@ucr.edu))

Graduate Advisor for Recruitment:
Dr. Sean Cutler ([sean.cutler@ucr.edu](mailto:sean.cutler@ucr.edu))

**Department Chair**
Dr. Patricia Springer ([bpschair@ucr.edu](mailto:bpschair@ucr.edu))
Research in Xuemei Chen’s lab aims at uncovering mechanisms underlying the metabolism, activities, and cell-to-cell movement of microRNAs using Arabidopsis as a model.

PI: Xuemei Chen - xuemei.chen@ucr.edu
Unravel the function of conserved stress signaling molecules in plants and human pathogens

Dehesh lab

Plastid  Apicoplast

Conserved Stress Signaling Molecules

PI: Katie Dehesh - katayoon.dehesh@ucr.edu
Eulgem Lab: Plant Immunity/Defense Gene Regulation

Main research areas:

- Epigenetic mechanisms of plant immune receptor gene expression
- Synthetic elicitors as innovative pesticide alternatives

Polyadenylation machinery

-333 pCaBP22 GUS

Synthetic elicitor DCA

untreated treated

PI: Thomas Eulgem
thomas.eulgem@ucr.edu
How do plants in a city affect human well-being? What controls distributions of urban plants?

Remote Sensing – Environmental Sensors – Field Surveys – Modeling

PI: Darrel Jenerette - darrel.jenerette@ucr.edu
Li Lab: Modeling Ecological Complexity
---Integration from genomes to ecosystems

Belowground Nitrogen metabolic pathways

Bistable switch-like control has emerged through a positive feedback connection between N-source and N-sink systems that underlie the observed biphasic response of the nitrogen biochemical network.

http://dx.doi.org/10.1098/rsos.160768
https://doi.org/10.1016/j.isci.2018.03.007

PI: Bai-Lian (Larry) Li - bai-lian.li@ucr.edu
Comparative and functional genetics of insect effector proteins

- Model and Non-model Organisms (Arabidopsis, grape, woody plants)
- Bioinformatics of Next Generation Sequencing
- Functional and Molecular Genetics (protein interactions, CRISPR)
- Interdisciplinary (entomology, plant biology, evolutionary biology)

[Diagram of gall formation with salivary gland and plant defense]

[Chart of effector targeting plant ubiquitination]

www.nabitylab.org
PI: Paul Nabity
pauln@ucr.edu
Plant cell division – Rasmussen Lab at UC Riverside

Maize

Arabidopsis

Mathematical modeling and division plane prediction

Timelapse imaging

Quantitative Biochemical Analysis

PI: Carolyn Rassmussen
carolyn.rasmussen@ucr.edu
How do soil bacteria promote plant growth?
How can we harness these benefits to help humanity?
Zhenbiao Yang, Professor of Cell Biology

Zhenbiao Yang’s laboratory aims to understand how long distance signals (signals diffused over the length of a tissue/organ), local signals (from neighboring cells), and intracellular signals (e.g., kinase, GTPase, calcium) control polar and directional cell growth and shape formation using pollen tubes (A) and leaf epidermal pavement cells (B) as model systems.

Pollen tubes (stained white, left) penetrate the stigma and style, and are guided to ovules by diffusible long distance signals. Mathematical modeling (right top) is integrated with experimentation to investigate how these signals regulate the spatiotemporal changes in the ROP1 GTPase activity (right bottom) to attract pollen tube growth.

Leaf epidermal pavement cells form the puzzle-piece shape. This process is activated by the plant hormone auxin. The Yang’s lab is investigating how auxin activates this process and how neighboring cells coordinate with each other to generate the interlocking lobes and indentations.

PI: Zhenbiao Yang - zhenbiao.yang@ucr.edu
For information about additional Plant Biology faculty members participating in our program, please go to https://plantbiology.ucr.edu/people/faculty.html

Or google for “UCR BPSC faculty”

For specific information on our international Plant Biology program contact

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