PCB 7922 JOURNAL COLLOQUIUM:
Plant Gene Editing

SPRING 2018

COURSE REGISTRATION
1 credit, departmentally controlled
Request registration with Eliana Kampf (elianak@ufl.edu)

CLASS SIZE LIMIT
13 (maybe 14) students

MEETING TIME AND PLACE
Wednesdays, from 4:00 to 5:00 pm, beginning January 10, 2316 Fifield Hall.

COURSE SUMMARY
Gene editing with engineered nucleases is advancing rapidly in plant species. The goal of this journal club is to discuss current literature on the myriad of approaches and uses of engineered nucleases in modifying plant genomes and phenotypes. The course will focus on current methods for engineering nucleases to cause mutations, enable homologous recombination, and act as transcriptional or post-transcriptional regulatory factors. Examples where these methods have been applied to diverse plants species will be discussed.

OBJECTIVES
Develop an in-depth understanding of current gene editing approaches in plants.
Develop critical thinking skills in reading primary science literature.
Practice presentation skills.
Learn to engage in scientific discussion with peers.

INSTRUCTOR
A. Mark Settles
settles@ufl.edu
Horticultural Sciences Department
College of Agriculture and Life Sciences
Plant Cell and Molecular Biology Laboratory (Building 885), Rm. 3
Phone: (352) 392-7571

Office hours on an individual basis by appointment
SCHEDULE OF CLASSES

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<thead>
<tr>
<th>Date</th>
<th>Suggested Class Topic</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>1/10</td>
<td>Organizational Meeting</td>
<td>Settles</td>
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<tr>
<td>1/17</td>
<td>CRISPR-Cas9 editing</td>
<td>Student presentation</td>
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<td>1/24</td>
<td>Cpf1 vs. Cas9</td>
<td>Student presentation</td>
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<tr>
<td>1/31</td>
<td>Editing reagent delivery methods</td>
<td>Student presentation</td>
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<tr>
<td>2/7</td>
<td>Transient/Somatic editing</td>
<td>Student presentation</td>
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<tr>
<td>2/14</td>
<td>Crop plant application</td>
<td>Student presentation</td>
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<tr>
<td>2/21</td>
<td>Multiplex targeting of genes</td>
<td>Student presentation</td>
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<tr>
<td>2/28</td>
<td>Cas9 breeding</td>
<td>Student presentation</td>
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<tr>
<td>3/7</td>
<td>No Class - Spring Break</td>
<td>n/a</td>
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<tr>
<td>3/14</td>
<td>Gene deletions/rearrangements</td>
<td>Student presentation</td>
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<tr>
<td>3/21</td>
<td>No Class - Maize Genetics Conference</td>
<td>n/a</td>
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<td>3/28</td>
<td>Homologous recombination</td>
<td>Student presentation</td>
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<td>4/4</td>
<td>Cas9 Artificial Transcription Factors</td>
<td>Student presentation</td>
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<td>4/11</td>
<td>Editing-enabled synthetic biology</td>
<td>Student presentation</td>
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<tr>
<td>4/18</td>
<td>RNA-guided ribonucleases</td>
<td>Student presentation</td>
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<tr>
<td>4/25</td>
<td>Epigenetic editing</td>
<td>Student presentation</td>
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COURSE REQUIREMENTS

Each student will select an individual journal article and lead discussion for the class. The presenter will be expected to introduce the paper and then engage the class in active discussion of the data, methods, and conclusions. Students are expected to have read the assigned papers and participate in class discussion.

Students are expected to attend all scheduled class meetings. If you must miss a class, please inform the instructor in advance. Two or more absences from the class will constitute a failing grade for the course unless there are clear extenuating circumstances.

GRADING

Grades will be assigned based on quality of presentations (50%), attendance and active participation in discussions (50%). Information on current UF grading policies can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

PROFESSIONALISM STATEMENT

Scientists are professionals guided by specific values and behaviors. These values and behaviors include respect, cooperation, active participation, intellectual inquiry, integrity, timeliness, and attendance. In addition to your performance on the graded materials, you will be evaluated on your growth as a professional. Professional characteristics include punctuality, attendance, participation, collegial attitude, and willingness to help others learn. Your attendance at all classes is a firm expectation, but if you are ill or an emergency occurs, contacts your instructor PRIOR TO the scheduled class time.
ACADEMIC HONESTY
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php

SOFTWARE USE
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

CAMPUS HELPING RESOURCES
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc
- Counseling Services
- Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Training Programs
- Community Provider Database

- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu
SERVICES FOR STUDENTS WITH DISABILITIES
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

- Dean of Students, 001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc