PCB 7922 Journal Colloquium: Frontiers in Plant Biotechnology
Fall 2018

Course Registration:
1 credit, departmentally controlled. Request registration with Eliana Kampf (elianak@ufl.edu)

Meeting Time and Location:
Thursdays, 9:35-10:25 a.m., 2564 Fifield Hall, beginning August 23.

Course materials access:

Course Summary:
This journal colloquium will explore some of the exciting concepts in modern molecular biology that have been recently implicated in the development of novel cutting-edge genetic tools for use in the field of plant biotechnology. Special emphasis will be given to small non-coding RNAs and their role in plant immunity along with RNA interference (RNAi)-based approaches in plant bioengineering, novel systems for targeted gene editing (such as CRISPR/Cas9 and others) and their practical applications.

Objectives:

Through this course, students will:

1. Become familiar with the advanced genetic tools that recently have become available in the field of biotechnology as a result of breakthrough discoveries in fundamental science and with their applications for plant improvement and production of new products in plants.
2. Learn some of the recently developed experimental procedures and methods that are used in the biotechnology research, their theory, applications, and limitations and learn how to properly select appropriate methodology while designing experiments.
3. Improve professional skills, including skills in developing a scientific idea as well as in critical reading of scientific literature and presentation skills.

Instructor:
Svetlana Folimonova, Ph.D.
Plant Pathology Department
2565 Fifield Hall
(352) 273-4655
svetlana@ufl.edu

Office hours TBA on an individual basis by appointment

Proposed Schedule of Classes (Tentative, Subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 23</td>
<td>Course overview</td>
</tr>
<tr>
<td>Aug. 30</td>
<td>Small RNAs as crucial regulators, mechanism and applications – Molnar et al. (2010)</td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Discussion</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>Sept. 6</td>
<td>Discussion 2</td>
</tr>
<tr>
<td>Sept. 13</td>
<td>Discussion 3</td>
</tr>
<tr>
<td>Sept. 20</td>
<td>Discussion 4</td>
</tr>
<tr>
<td>Sept. 27</td>
<td>Discussion 5</td>
</tr>
<tr>
<td>Oct. 4</td>
<td>Discussion 6</td>
</tr>
<tr>
<td>Oct. 11</td>
<td>Discussion 7</td>
</tr>
<tr>
<td>Oct. 18</td>
<td>Discussion 8</td>
</tr>
<tr>
<td>Oct. 25</td>
<td>Discussion 9</td>
</tr>
<tr>
<td>Nov. 1</td>
<td>NO CLASS</td>
</tr>
<tr>
<td>Nov. 8</td>
<td>Discussion 10</td>
</tr>
<tr>
<td>Nov. 15</td>
<td>Discussion 11</td>
</tr>
<tr>
<td>Nov. 22</td>
<td>NO CLASS</td>
</tr>
<tr>
<td>Nov. 29</td>
<td>Discussion 12</td>
</tr>
</tbody>
</table>

**PAPER SUGGESTIONS FOR DISCUSSIONS:**

**Small RNAs as crucial regulators, mechanism and applications**


**New approaches to gene manipulation. Strategies for targeted genome editing, CRISPR/Cas systems**


There is another paper that may be helpful in understanding the experimental approach used in this study: Finkelstein IJ and Greene EC (2011). *Supported Lipid Bilayers and DNA Curtains for High-Throughput Single-Molecule Studies. Methods Mol Biol. 745: 447–461.* This paper could be presented in brief along with the main presentation by another student.


**Course Requirements:**
Attend all scheduled class meetings. If you must miss a class meeting, please inform the instructor in advance that you will be absent. Three or more absences from the class will constitute a failing grade for the course unless there are clear extenuating circumstances.

**Course structure:**
Weekly meetings to discuss specific recent papers assigned by the instructor or selected by students (in the latter case, a paper chosen by a student needs prior approval from the instructor). Papers will be selected from high-impact journals. For each paper, there will be a primary Presenter and an assigned Reader. Each participant will be responsible for one or two presentations, depending on the total number of participants, and for serving as Reader for one or two presentations.
The presenter is responsible for preparing a PowerPoint presentation of the paper that must clearly state the main focus or goal of the study, include relevant background information, a brief explanation of methodology used in the paper, results along with the supporting figures and tables and conclusions. The presenter should be prepared to discuss the methods used along with their limitations and alternatives, how well the obtained results support the conclusions as well as to evaluate the significance of the study.

The Reader is responsible for reading the paper and assisting the Presenter in facilitating discussion.

Every member of the class must participate in every discussion. It is not enough to be present and just listen to the discussion. This is a literature-based class and students are expected to read the scheduled paper prior to the class and be prepared to participate in a critical discussion of all aspects of the paper.

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

**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:

**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.
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