# ENY 2890 Section-339C Insect Research

## Scientific Engagement Through Honey Bee Health Research

Spring 2019 | Course Overview

**Time:** Period 8 (3:00 – 3:55), Tuesday and Thursday
**Location:** Honey Bee Research Facility, Bldg 964 Rm 105
1881 Natural Area Dr., Gainesville, FL, 32611 http://campusmap.ufl.edu/#/index/0970

**INSTRUCTORS:**
All instructors are available to meet with students by appointment.
**Cameron Jack** (cjack@ufl.edu), Lecturer, Honey Bee Research Facility Rm 114
**Dr. Jamie Ellis** (jdellis@ufl.edu), Professor, Honey Bee Research Facility Rm 116
**Dr. Leigh Boardman** (lboardman@ufl.edu), Postdoctoral Associate, Honey Bee Research Facility Rm 108
**Dr. Humberto Boncristiani** (hboncristiani@ufl.edu), Postdoctoral Associate, Honey Bee Research Facility Rm 112
**Dr. Noble Egekwu** (noble.egekwu@ufl.edu), Postdoctoral Associate, Honey Bee Research Facility Rm 108
**TA** – Emily Noordyke (enoordyke@ufl.edu) M.S. student, Honey Bee Research Facility Rm 110

**COURSE PREREQUISTES:** None

**COURSE DESCRIPTION AND LEARNING OBJECTIVES:**
*This is a Classroom Undergraduate Research Experience (CURE) course. During this course students will be introduced to important topics in science and provided with an opportunity to conduct publishable research in the field of honey bee health. We want students to go forth prepared to join other research teams at UF and feel confident in their abilities to contribute in their desired scientific fields. To achieve this goal, this class is organized as a flipped classroom, offering both online and in-classroom learning experiences.*

*Motivated students will be able to:*

1. *Describe how scientists conduct research,*
2. *Identify the challenges associated with conveying scientific findings to general audiences,*
3. *Conduct a thorough literature review from reputable sources,*
4. *Demonstrate proper data collection techniques,*
5. *Summarize the importance of accurate data entry and analysis,*
6. *Interpret the importance and relevance of scientific findings,*
7. *Communicate research findings effectively through oral presentation, and*
8. *Design a simple experiment.*

*Students' successful achievement of these learning objectives will be evaluated via online quizzes, individual and group writings, participation in all classroom activities and a video presentation.*

**REQUIRED MATERIALS:** Access to a laptop or desktop computer for online quizzes and assignments. A computer in a computer lab on campus should be fine for this purpose. There are no required texts for this course as all reading materials and media will be available on Canvas or freely available on the internet.

**COURSE COMMUNICATION:** Please ensure that your Canvas profile is set to receive notifications (i.e. please check the appropriate box to receive all notifications). To do this, click on your name in the upper right corner of the Canvas homepage after logging into Canvas. Next, click "notifications" on the left. This will take you to the Notification Preferences page. Then, click the check symbol for at least the following notifications: Due Date, Course Content, Announcement, and Grading.

**SPECIAL NOTE ON CONTACT VIA EMAIL:** Due to UF privacy laws, you must use your GatorLink account or the Canvas mail system when emailing the Instructors or TA. Emails sent from other accounts (gmail, hotmail, etc.) will not be answered by the Instructors or TA.

## Grading:

| Assignment | Break-down | Points |
|---|---|---|
| Online quizzes | 10 quizzes, 10 pts/each | 100 |
| Critical thinking exercises | 5 assignments, 25 pts/each | 125 |
| Group scientific writing assignments | 4 assignments, 50 pts/each<br>(40 pts group paper, 10 pts individual effort) | 200 |
| Video presentation | 5 students will review, 20 pts each | 100 |
| Video presentation peer review | 5 reviews, 5 pts/each | 25 |
| | **Total Points** | **550** |

**ONLINE QUIZZES:**
*There will be 10 online quizzes throughout the duration of the class (see weekly schedule) to help students prepare for in-class discussions. Each quiz is worth 10 points and will include five questions based on the reading(s). Quizzes are open note. Students are required to watch the lecture(s) and complete the quiz prior to the beginning of each class.* ***Quizzes are due by 3:00 pm the day of the corresponding class.*** *No late quiz submissions will be accepted without a university excused absence.*

**CRITICAL THINKING EXERCISES:**
*At various points in the semester, students will be required to complete five critical thinking exercises designed to help students reflect on and/or synthesize subjects covered in this course.*

*Each assignment will be structured differently so students should read the directions carefully before beginning the assignments. Proper terminology, spelling, and grammar are expected in all assignments. A rubric for grading the reflective writing assignments will be provided at the time the assignment is given.* ***The critical thinking exercises will be due by 3:00 pm the day of the corresponding class.***

## GROUP WRITING ASSIGNMENTS:

*As communication via scientific writing is essential for all conducting research, students will gain experience by writing a scientific article together with their classmates. Students will be assigned to groups who will work together to complete four writing assignments, each focusing on a section used in most published scientific articles (introduction, materials and methods, results, discussion). Each group will turn in one written copy and all members of the group will receive the same score from total of 40 points. Additionally, students within each group will anonymously score the other members in their group based on participation, contributions and professionalism, making up the remaining 10 points. Each assignment will be structured differently but all will be about one page in length. Proper terminology, spelling, and grammar are expected in all assignments. A rubric for grading the reflective writing assignments will be provided at the time the assignment is given.* ***The writing assignments will be submitted online via Canvas and are due by 3:00 pm the day of the corresponding class.***

## VIDEO PRESENTATIONS AND PEER REVIEW:

*As oral communication of scientific research is essential, students will be gain experience by presenting the research findings from a scientific article of their choice, but relevant to the focus of the class. Students will record themselves presenting the research contained in the article. Each presentation should contain broken up into sections found in most published scientific articles (introduction, materials and methods, results, discussion). The presentations will be 8-10 minutes long (typical oral presentation time for most conferences). Appearance, organization, timeliness, grammar and clarity of speech are expected in oral presentations. Videos will be uploaded to YouTube and a video link will be turned into Canvas. Each student will review at least 5 other student videos and score them based on a presentation rubric to be provided at the time the assignment is given.*

## GRADING SCALE:

| **FINAL GRADING** | | |
|---|---|---|
| % grade | Letter grade | Points needed to achieve letter grade |
| 100-93 | A | ≥ 511.5 |
| 90-92 | A- | 495.5 – 511.4 |
| 87-89 | B+ | 478.5 – 495.4 |
| 83-86 | B | 456.5 – 478.4 |

| | | |
|---|---|---|
| 80-82 | B- | 440.5 – 456.4 |
| 77-79 | C+ | 423.5 – 440.4 |
| 73-76 | C | 401.5 – 423.4 |
| 70-72 | C- | 385.5 – 401.4 |
| 67-69 | D+ | 368.5 – 385.4 |
| 63-66 | D | 346.5 – 368.4 |
| 60-62 | D- | 330.5 – 346.4 |
| 0-59 | E | 0 – 330.4 |

*For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

**MAKE-UP ASSIGNMENTS:**

Make-up assignments and quizzes are not available without verification of a university excused absence. In the event of a university excused absence, it is the responsibility of the student to contact the instructor(s) in a timely manner and provide any required documentation to support their absence. Requirements for make-up work, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

## Course Schedule:

| Class # | Day/Date | Topic | Assignments Due |
|---|---|---|---|
| 1 | Tuesday 8 Jan. | Class introductions; syllabus review; What is science? | |
| 2 | Thursday 10 Jan. | How do we recognize good science? | Quiz 1 (syllabus) |
| 3 | Tuesday 15 Jan. | The scientific method; structure of a scientific journal article | |
| 4 | Thursday 17 Jan. | What is your question? Why does it matter? | Quiz 2 |
| 5 | Tuesday 22 Jan. | Honey bee biology – Observation hives | CTE 1 |

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|---|---|---|---|
| 6 | Thursday 24 Jan. | Honey bee health and pesticides | Quiz 3 |
| 7 | Tuesday 29 Jan. | What question will we investigate? | |
| 8 | Thursday 31 Jan. | Reviewing the literature: Finding good sources | Quiz 4 |
| 9 | Tuesday 5 Feb. | Designing an experiment to address your question | |
| 10 | Thursday 7 Feb. | Data collection methods; proper data entry | |
| 11 | Tuesday 12 Feb. | Statistics: the language of science | CTE 2 |
| 12 | Thursday 14 Feb. | Data analysis: practice data set | Quiz 5; Literature review section |
| 13 | Tuesday 19 Feb. | Science ethics; proper data entry | |
| 14 | Thursday 21 Feb. | Public trust and distrust of science | Quiz 6 |
| 15 | Tuesday 26 Feb. | Science and Safety | CTE 3 |
| 16 | Thursday 28 Feb. | Bee marking party | Materials and methods section |
| **Spring Break** | | | |
| 17 | Tuesday 12 March | **Experiment start**: Exposing bees to pesticides in class | |
| 18 | Thursday 14 March | Begin collecting data; Hive observations in class | Quiz 7 |
| 19 | Tuesday 19 March | Importance of oral communication: how to present to a scientific audience | |
| 20 | Thursday 21 March | Graphing and figures; Hive observations in class | Quiz 8 |
| 21 | Tuesday 26 March | Interpretation of results; Hive observations in class | CTE 4 |

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|---|---|---|---|
| 22 | Thursday 28 March | Analyzing our class data: what have we got so far? Hive observations in class | Results section |
| 23 | Tuesday 2 April | How to communicate simply; hive observations in class | Quiz 9 |
| 24 | Thursday 4 April | How to present to a non-scientific audience; Hive observations in class | |
| 25 | Tuesday 9 April | Why conduct international research? Hive observations in class | CTE 5 |
| 26 | Thursday 11 April | Guest speakers; Hive observations in class | Quiz 10 |
| 27 | Tuesday 16 April | Research opportunities at UF; Hive observations in class | |
| 28 | Thursday 18 April | Guest speakers; **Experiment end**: Final hive observation | Discussion section |
| 29 | Tuesday 23 April | Course evaluations; Our research and class wrap up | Video presentation |
| 30 | Tuesday 30 April | Finals week – no class | Peer review video presentation |

**SCHEDULE DISCALIMER:** This schedule represents current plans and objectives. These plans may need to change throughout the semester due to unforeseeable circumstances. Such changes will be communicated though announcements on Canvas.

## UF Policies:

### ONLINE COURSE EVALUATION PROCESS:

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

### UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:

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/process/student-conduct-honor-code.

**PLAGIARISM:**

Plagiarism is a serious problem in academia today, especially with the ease of obtaining information from the World Wide Web. Plagiarism is defined as representing the words or ideas of another person as one's own, without attribution to the source. All words and ideas must be attributed to a source unless they are considered common knowledge (i.e., widely known by many people and found in many different sources). There are many kinds of plagiarism; one of the most common ones is "insufficient paraphrasing", even with correct citation. Please look at the Purdue Online Writing Lab's web site on Avoiding Plagiarism (https://owl.english.purdue.edu/owl/resource/589/01/).

Plagiarism is unethical, unacceptable in science, and prohibited by the UF Student Honor Code (http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php). The consequences for plagiarism while at the University of Florida range from receiving a grade of zero for the plagiarized assignment or a failing grade for the course, to, for repeated offenses, expulsion from the university. Plagiarism after graduate training calls into question one's scientific integrity and can lead to banning of publication in journals and the loss of jobs/careers. In some countries, it is an acceptable practice to write in a manner that faculty members at the University of Florida consider to be plagiarism. Students studying in our university and with plans to publish their research in the English language need to know what plagiarism is and how to avoid it.

Students who plagiarize will be caught and consequences will be applied. I check all written assignments using an anti-plagiarism software called Turnitin® (http://turnitin.com/en_us/products/originalitycheck). Students who plagiarize will receive a grade of zero on the assignment. The second instance of plagiarism in the course will result in an automatic failing grade in the course.

Please understand that our purpose in bringing to your attention the matter of plagiarism is to help train you to be ethical scientists, not to impugn your character.

### 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.

## Getting Help:

### UNIVERSITY POLICY ON ACCOMMODATING 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 (0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/)

### E-LEARNING AND TECHNICAL SUPPORT:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP
- https://lss.at.ufl.edu/help.shtml

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

### CAMPUS HELPING RESOURCES:

Students experiencing crises or personal problems that interfere with their general wellbeing 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
Wellness Coaching

• Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 911.

**STUDENT COMPLAINTS:**

http://www.distance.ufl.edu/student-complaint-process