ALS 4914: Project Team Research: Building Skills in Agrobiology
Spring 2019; 3 Credits
Meeting Times: Mondays: period 8, Wednesdays periods 8-9

INSTRUCTORS
Anna Prizzia, Field and Fork Program, University of Florida, Institute of Food and Agricultural Sciences, College of Agricultural and Life Sciences, 20124 IFAS Research Drive, Gainesville, FL 32611; aprizzia@ufl.edu; 352-294-2208; Office Hours: By appointment.

CO-REQUISITES
Junior Standing or faculty approval

COURSE DESCRIPTION
Hands-on experience in addressing a real-world problem faced by an agricultural industry partner. Production of a detailed plan, project design, and preliminary data for evaluating and solving the problem. Offered every term.

This semester we will be working with Seed Savers Exchange and Working Food's Southern Heritage Seed Collective Program to look at the success of kale varieties for Florida production and the marketability of these varieties with local farmers' market patrons and the farm-to-school program for the Alachua County School system. Students will have the opportunity to plan, implement and evaluate a field trial of approximately 6 kale varieties and work with local stakeholders, including farmers, consumers, institutional food service and nutrition experts to explore the viability of these varieties for our region.

JUSTIFICATION
This course is designed to address the need for broad training in agricultural fields as food production systems become more complex with interdisciplinary challenges. Hands-on experience solving specific problems faced by industry representatives is also critical for employment preparation and competitive standing. This course will emphasize acquiring/refining skills within the following areas: professionalism; project management; working in interdisciplinary teams; effective communication (written and oral) with peers and mentors; tackling complex projects through creative and novel approaches, and formulating, designing, and presenting methodologies to solve problems.

COURSE OBJECTIVES
Upon the completion of this course, students should be able to:

Student Learning Outcomes:

1. Create a statement of focus and justification for a research project
2. Design a plan of action with a prioritized task list, group member responsibilities, and a detailed timeline with project deadlines
3. Apply skills for managing uncertainty and risk, including identifying logistical constraints (time, economic etc.), realistic goal setting, and project organization.
4. Demonstrate effective oral, written, visual communication skills

5. Differentiate between implicit and explicit bias and evaluate the potential ramifications of implicit bias in the workplace.
6. Implement key aspects of professionalism within the group project, such as collaborative approaches to problem solving, working well with team members, proper/appropriate grammar in oral, written, and visual deliverables, and proper citation and acknowledgment of previous research.

CLASS FORMAT
This class meets formally two days per week, with one meeting spanning 2-periods and the second for 1-period. Additional group or sub-group meetings may be added as needed once the project progresses. A one-day meeting at the industry's headquarters in FL may also be scheduled according to the availability of all team members. One 3-hour symposium will be scheduled to allow for presentation of the team's proposed approach, design, and preliminary data to the stakeholders prior to the end of the semester.

ROLE OF INDUSTRY PARTNERS/MENTORS
Industry partners approach the Center for Stress Resilient Agriculture (CSRA) with a real-world problem that their company is facing. Once the partner and the CSRA have clearly outlined the problem statement and the course deliverables, an industry representative is assigned to serve as a mentor for the course. Each industry representative meets with the class 5 to 6 times over the course of the semester, either in person or remotely. The mentors are present to advise the group on the direction of the projects, specific points of interest from their company, feasibility of design/implementation of recommendations, and content of the final paper and presentation.

COURSE SCHEDULE

Week (Dates)	Topic
Week 1 (	Course Overview
Week 2	Smart goals
Week 3	Working in teams
Week 4	Writing effectively
Week 5	Scientific Ethics
Week 6	Project Management
Week 7	Time management
Week 8	Communicating effectively
Week 9	Conflict resolution
Week 10	Humility in Science
Week 11	Scientific Integrity
Week 12	Giving effective oral presentations
Week 13	Professionalism
Week 14	Leadership skills
Week 15	Networking
Week 16/ Last Week of Class	Presentation Overview

ASSIGNMENTS: READINGS AND VIDEOS
You are expected to have viewed or read any materials prior to the class meeting time for the week. The first part of the class will involve the discussion of this material. Part of your participation evaluation will involve your active discussion of the materials.

Week 1: Class Introduction
1) Review Syllabus
2) Fill out personal introduction on Canvas class site

Week 2: Smart goals
- Tom Wujec: Build a tower, build a team, Ted Talks, Feb. 2010, TED2010.
- https://www.ted.com/talks/tom_wujec_build_a_tower
- New Scientist, "The Smart Way to Manage a Large Research Project", http://www.nextscientist.com/manage-a-large-research-project/

Week 3: Working in Teams
- Quiet – Chapter 3

Week 4: Writing Effectively
- Scitable, Effective Writing, NatureEducation, English Communication for Scientists, Unit 2.2. https://www.nature.com/scitable/topicpage/effective-writing-13815989

- Feliú-Mójer, M. 2015. Effective Communication, Better Science. Scientific American, Guest Blog, February 24. https://blogs.scientificamerican.com/guest-blog/effective-communication-better-science/

- Melissa Marshall, Talk nerdy to me, Ted Talk, June 2012, TEDGlobal 2012. https://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me#t-90573

Week 5: Scientific Ethics
- Ben Goldacre, Battling bad science, Ted Talks, July 2011, TEDGlobal 2011 https://www.ted.com/talks/ben_goldacre_battling_bad_science

Week 6: Project Management
- Hunt, A. 2005. Your research project – How to manage it. Routledge Press, ISBN: 0-415-34408-5 https://www.york.ac.uk/media/biology/documents/careers/managing_research_project.pdf

- Portny, S.E. and J. Austin. 2002. Project Management for Scientists. Science. Jul 12, 2002. http://www.sciencemag.org/careers/2002/07/project-management-scientists

Week 7: Time Management
- Laura Vanderkam, How to gain control of your free time, Ted Talks, Feb. 7, 2017 https://www.ted.com/talks/laura_vanderkam_how_to_gain_control_of_your_free_time

- Rory Vaden, How to multiply your time, Ted Talks, June 1, 2015
  https://m.youtube.com/watch?v=y2X7c9TUQJ8

- Boss, J.M. and Eckert, S.H. 2004. Academic scientists at work: where'd my day go? Science, April 9. http://www.sciencemag.org/careers/2004/04/academic-scientists-work-whered-my-day-go

Week 8: Communicating Effectively
- Julian Treasure, How to speak so people want to listen, Ted Talks, June 2013, TEDGlobal 2013.
  https://www.ted.com/talks/julian_treasure_how_to_speak_so_that_people_want_to_listen

Week 9: Conflict Resolution
- Margaret Heffernan, Dare to disagree, Ted Talks, June 2012, TEDGlobal 2012.
  https://www.ted.com/talks/margaret_heffernan_dare_to_disagree
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- Snippet from "The Office": https://www.nbc.com/the-office/video/conflict-resolution/n21591

- Managing conflict in your lab group http://www.sciencemag.org/careers/2005/09/mind-matters-managing-conflict-lab

- An Introduction to Conflict Resolution https://www.skillsyouneed.com/ips/conflict-resolution.html

Week 10: Humility in Science
- King, A. 2016. Humility in Science: Because Science Always Wins. In-Training. http://in-training.org/humility-science-science-always-wins-11239

- Payne, D. 2017. Lindau: The charge of Nobel lasses (and lads): Be humble. Naturejobs, June 28. http://blogs.nature.com/naturejobs/2017/06/28/lindau-the-charge-of-the-nobel-lasses-and-lads-be-humble#more-53247

- Stirling, A. 2010. Keep it complex. Nature 468: 1029-1031.
  https://www.nature.com/nature/journal/v468/n7327/pdf/4681029a.pdf

Week 11: Scientific Integrity
- View DOI video to 14:15 and review the codes of conduct from the PDF document. We will use the scenarios to discuss in class.
  https://www.doi.gov/ppa/seminar_series/video/whats-all-the-fuss-about-scientific-integrity

- DOI Code of Scientific and Scholarly Conduct
  https://www.doi.gov/sites/doi.gov/files/migrated/scientificintegrity/upload/DOI-Code-of-Scientific-and-Scholarly-Conduct-Poster-December-2014.pdf

Week 12: Giving an Effective Oral Presentation
- Chris Anderson, TED's secret to great public speaking, Ted Talks, March 2016, TED Studio.
  https://www.ted.com/talks/chris_anderson_teds_secret_to_great_public_speaking#t-336004

- Nancy Duarte, The secret structure of great talks, Ted Talks, November 2011, TEDxEast
  https://www.ted.com/talks/nancy_duarte_the_secret_structure_of_great_talks#t-855068

Week 13: Professionalism
- Kathryn Schulz, On being wrong, Ted Talks, March 2011, TED2011.
  https://www.ted.com/talks/kathryn_schulz_on_being_wrong#t-703757

- Korenman, S.G. Professionalism in Science.
  https://ori.hhs.gov/education/products/ucla/chapter1/page03.htm

- Historical perspective on Professionalism in Science: Professionalism and Science. 1931. Nature 127:961-963.
  https://www.nature.com/nature/journal/v127/n3217/pdf/127961a0.pdf

- Dale Atkins, Being a Professional, Tedx Talk, May 4, 2013, TEDxYouth@EHS
  https://www.youtube.com/watch?v=sLv7sdGJWPI&app=desktop

Week 14: Leadership Skills
- Jensen, D.G. 2015. The many faces of leadership. Science, Dec. 16.
  http://www.sciencemag.org/careers/2015/12/many-faces-leadership

- Drew Dudley, Everyday Leadership, Tedx Talks, September 2010, TEDxToronto
  https://www.ted.com/talks/drew_dudley_everyday_leadership

Week 15: Networking
- Pain, E. 2009. Academia or Industry? Finding the Right Fit. Science, May 22.
  http://www.sciencemag.org/careers/2009/05/academia-or-industry-finding-right-fit

SUGGESTED MILESTONE PLAN (changes to be determined by team)

Weeks (Dates)	Milestone
Week 1	Get to know your team; discuss roles and expectations
Week 2	Conduct a team brainstorming session around the problem
Week 3	Create project plan; start Field Work
Week 4	Literature review – identify missing science and novel approaches
Week 5	Literature review – identify missing science and novel approaches
Week 6	Identify solution ideas;

Week 7	Focus and prioritize solutions
Week 8	Presentation of concept solutions to organizational mentor; field visits
Week 9	Refine solutions according to feedback provided by mentor; field data collection
Week 10	Refine solutions according to feedback provided by mentor; field data collection
Week 11 (10/30-11/3)	Draft final written project report
Week 12 (11/6-11/9)	Draft final oral project report
Week 13 (11/13-11/17)	Refinements to written project report
Week 14 (11/20-11/21)	Refinements to oral presentation/practice
Week 15 (11/27-12/1)	Present to company
Week 16 (12/4-12/6)	Project final presentation and final report turned in to instructors

TEXTBOOK
None Required

ASSIGNED READINGS
Readings and videos will be assigned for each week of the course.
Additional readings from literature will be chosen throughout the semester in support of the project question. These will be based on additional information required for the design or implementation of the project. Assigned weekly readings will be posted in Canvas or emailed each week.

READING LIST
- New Scientist, "The Smart Way to Manage a Large Research Project", http://www.nextscientist.com/manage-a-large-research-project/
- Scitable, Effective Writing, NatureEducation, English Communication for Scientists, Unit 2.2. https://www.nature.com/scitable/topicpage/effective-writing-13815989
- Feliú-Mójer, M. 2015. Effective Communication, Better Science. Scientific American, Guest Blog, February 24. https://blogs.scientificamerican.com/guest-blog/effective-communication-better-science/
- Hunt, A. 2005. Your research project – How to manage it. Routledge Press, ISBN: 0-415-34408-5
  https://www.york.ac.uk/media/biology/documents/careers/managing_research_project.pdf
- Portny, S.E. and J. Austin. 2002. Project Management for Scientists. Science. Jul 12, 2002. http://www.sciencemag.org/careers/2002/07/project-management-scientists
- Boss, J.M. and Eckert, S.H. 2004. Academic scientists at work: where'd my day go? Science, April 9. http://www.sciencemag.org/careers/2004/04/academic-scientists-work-whered-my-day-go
- Managing conflict in your lab group http://www.sciencemag.org/careers/2005/09/mind-matters-managing-conflict-lab
- An Introduction to Conflict Resolution https://www.skillsyouneed.com/ips/conflict-resolution.html

- King, A. 2016. Humility in Science: Because Science Always Wins. In-Training. http://in-training.org/humility-science-science-always-wins-11239
- Payne, D. 2017. Lindau: The charge of Nobel lasses (and lads): Be humble. Naturejobs, June 28. http://blogs.nature.com/naturejobs/2017/06/28/lindau-the-charge-of-the-nobel-lasses-and-lads-be-humble#more-53247
- Stirling, A. 2010. Keep it complex. Nature 468: 1029-1031. https://www.nature.com/nature/journal/v468/n7327/pdf/4681029a.pdf
- Historical perspective on Professionalism in Science: Professionalism and Science. 1931. Nature 127:961-963. https://www.nature.com/nature/journal/v127/n3217/pdf/127961a0.pdf
- Jensen, D.G. 2015. The many faces of leadership. Science, Dec. 16. http://www.sciencemag.org/careers/2015/12/many-faces-leadership
- Pain, E. 2009. Academia or Industry? Finding the Right Fit. Science, May 22. http://www.sciencemag.org/careers/2009/05/academia-or-industry-finding-right-fit

SPECIAL SOFTWARE
None required

E-LEARNING
E-learning Canvas. The entire course will be managed through e-learning using Canvas. All materials and content will be available fully on-line delivered in **E-Learning Canvas**, the centrally-supported course management system at UF. Canvas is the on-line source for the majority of your learning resources and assignments in this course. For a link to the tutorial regarding E-Learning Canvas functionality, go to the class home page on canvas. Students enrolled in the course should login to Canvas on the first day of the course at: http://lss.at.ufl.edu. You will use your Gatorlink name and password to login to Canvas. Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

GRADING

Task	Description	Points	%
Team Project	Draft report and presentation	200	25%
Team Project	Final Report and presentation	500	50%
Participation	Graded weekly; 15pts/week	200	25%

GRADING SCALE
We will use the following grading for the course:
- A   94.0 – 100%
- A-   90.0 – 93.9%
- B+   87.0 – 89.9%
- B   83.0 – 86.9%
- B-   80.0 – 82.9%

- C+   77.0 – 79.9%
- C   73.0 – 76.9%
- C-   70.0 – 72.9%
- D+   67.0 – 69.9%
- D   63.0 – 66.9%
- D-   60.0 – 62.9%
- E   < 60%

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

PROJECT
Students will work in interdisciplinary teams to evaluate, research, and create solutions for an existing problem facing an industry partner. The research teams will work cooperatively with faculty and industry mentors to create a detailed research plan and design and collect necessary data to identify the most effective solution to the industry problem. The final project will consist of a written report that will be submitted to the faculty instructor and a group presentation to the industry representatives.

PARTICIPATION
Your active participation is critical to your success and the quality of your project and experience in this course. Class participation grades are determined based on class preparation and participation in class discussions with classmates and industry mentors. See rubric below for grading criteria and point distribution.

	7.5pts	**4pts**	**2pt**
Preparation for Class	Fully prepared, notes/ observations on assignments & readings	Minimum preparation, superficial knowledge of assignments & readings	Unprepared, obviously did not complete assignments & readings
Frequency of Participation	Actively participated in discussions with classmates & industry partners	Minimal involvement in discussions with classmates & industry partners	Did not participate in discussions with classmates & industry partners

FINAL EXAM
None

CLASSROOM ETIQUETTE AND DEMEANOR
Students are expected to arrive for class on time. Cell phones must be muted during class. Professional attire required when meeting with Industry Partners.

ABSENCES AND MAKE-UP WORK

Attendance and Make-Up Work Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

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.

MATERIALS AND SUPPLY FEES:
None

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/process/student-conduct-honor-code.

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.

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 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

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
• U Matter We Care, www.umatter.ufl.edu/
• Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

STUDENT COMPLAINTS
• Residential Course: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
• Online Course: http://www.distance.ufl.edu/student-complaint-process