

BCH4905 Science for Life Research Course
Fall 2016

<https://www.cpet.ufl.edu/students/science-for-life-research-course/>

Open to all students

Classes will be held in the New Physics Building Lecture Hall, Room NPB 1001
Thursday, 8th period, 3:00 pm to 3:50 pm
1 credit
Course Director: Dr. Mary Jo Koroly sfl.koroly@cpet.ufl.edu

Science for Life Research Course Overview

This course is intended for students who are

- interested in gaining insight into how fundamental science and engineering concepts are used in discoveries in the life sciences;
- interested in learning about cutting-edge research at UF; and
- interested in exploring the possibility of a research experience.

This weekly seminar course will give students insight and appreciation of how fundamental science and engineering concepts are used in emerging research and discoveries, especially in the life sciences. Students will be introduced to the kinds of opportunities available in faculty bench, field and computer laboratories in departments, colleges, centers and institutes on all parts of campus. During each session, three professors from different UF colleges will speak on current topics in interdisciplinary science and engineering fields; the primary –but not exclusive- emphasis will be on the biological and health sciences. The faculty members will present brief summaries of their laboratory philosophy and research interests; their presentations are designed to give students a deeper awareness and understanding of the types of research ongoing at UF (and globally), and to inspire/encourage student interest in exploring the many opportunities to do research available to students at this world-class research university.

Students majoring in science, technology, engineering and mathematics (STEM fields) will find this course to be engaging and valuable. However, non-STEM majors with a strong background in high school science and a passion for research will also benefit from the multi-disciplinary research and guidance offered by the presenters in this course.

Instructors

The course director is **Mary Jo Koroly, Ph.D.** Research Associate Professor of Biochemistry and Molecular Biology, College of Medicine and Director, Center for Precollegiate Education and Training, Academic Affairs; her email is

sfl.koroly@cpet.ufl.edu. I plan to always be available outside the Physics lecture hall after each class, but please feel welcome to contact me if you wish to arrange another time to meet.

Lecturers are active research faculty members and administrators from across campus who are pleased to introduce you to the interdisciplinary research they do and how and why they do it, and to encourage you to explore research opportunities throughout your college careers and beyond.

Make sure to visit the course canvas page on <http://elearning.ufl.edu/>

Course Structure

Students will use the canvas page to access the syllabus, the weekly schedule of presenters, and other resources. Students will be expected to **conduct a web search for each speaker** prior to class to prepare themselves to get the most out of each presentation. During the semester, students will **submit well-thought questions** about research presentations via the lecture question assignment on canvas, **interview at least one UF professor** to learn more about his/her research, and **prepare a report** that will be due on Friday, November 18. This report, along with good questions, **attendance**, and a **pre- and post-survey** will constitute the grading for the class.

Note: Joining a research lab is NOT a requirement for the BCH4905 Research Course, but the presentations and assignments provide you with encouragement, skills, opportunities, confidence, and resources to make informed decisions if you choose to seek mentors and undergraduate research experiences.

Student responsibilities and grading

There are four (4) components of the course that will determine your grade.

1. **Well-thought questions about the research presented (20 points):** Each good question submitted on the canvas page **within 24 hours after class** will be worth 3 points (a total of **18** points may be earned). Only one question per speaker will be graded, although you are encouraged to ask many more than 6 questions! In addition, **2** points will be gained for a total of 10 questions asked throughout the course.

A “**good**” question (3) is one that:

- a. shows understanding of the topic presented and its potential applications;
- b. contributes an original perspective; and/or
- c. uses content from the lecture to seek further relevant information.

For example: “What are you going to do next” is not considered to be a well-thought question, but “given the findings [specify] you just described, would your next step be to [specify]?” would be the kind of question that would earn 3 points.

This assignment is to help you to hone your active listening skills and to think more deeply and critically about the material presented in class and on the speaker’s website.

Note: Since the time for each speaker is limited to 15 minutes, there may be little or no time for questions during class. However, the speakers will stay for a few minutes at the end of class to speak with you informally... just join them at the front of the lecture hall.

2. Narrative report on an interview (24 points): Each student will write a 2-3 page report during the semester, **due on Friday, November 18**. This required report is based on an interview you conduct, in person, with a UF professor in any research area of interest to you. The researcher you choose to interview can be a presenter during this course OR any faculty member doing exciting STEM or health-related research at UF. Since the UF Center for Undergraduate Research lists hundreds of professors who mentor undergraduates in an online data base (see <http://cur.aa.ufl.edu/>) and only ~42 who speak in this course, it is anticipated that most students will interview professors other than those presenting this semester.

Students must arrange to meet the professor of their choice, read at least one of their published journal articles, ask questions about their work in a face-to-face interview, tour their worksite, and report on that experience.

Content of report: Each report must contain:

- a. Biographical information on the professor (where born, where educated, current title); how did the professor become interested in science?
- b. A description of the research site (location, numbers of undergraduate and graduate students currently in the professor's lab, types of equipment, etc.). You are welcome to briefly describe conversations you have with identified members of the lab team during your tour.
- c. Several paragraphs on the question(s) the lab is trying to answer, why this question(s) is important, and what major experimental approaches are used in the research. Please use both your interview and your background reading to respond.
- d. A paragraph that describes at least one research project that potentially could be available for undergraduates.
- e. Names and affiliations of major collaborators of the professor from outside of UF.
- f. Three recent publications from the professor's laboratory, with full citation including authors, title, year, journal (or book), volume, and page numbers. This is the bibliography for the report. Of course, your report will be enhanced if you show that you carefully read at least one of these articles.

Format of report: The report should be no less than 2 full pages nor longer than 3 pages, single-spaced, with one inch margins and 12 point font. The bibliography should follow the text of the report as an additional page. The student's name and UFID should be on the top right corner of the report; and the interviewed researcher, department, and email contact should be on the top left corner. The report should be saved on the student's computer with a filename that includes the student's last name and initial, e.g., SmithA_Report would be the filename for Adam Smith's report. Reports submitted with non-standard filenames will not be scored and the student will lose credit.

Instructions for submission of the report: Reports in MS Word for Windows format must be submitted electronically by uploading a file to the canvas page on or before 5 pm on **Friday, November 18**. No other form of submission will be accepted. Reports submitted later than 5 pm on **November 18** will have 5 points deducted for each

24 hours past the deadline. Mac users should be sure to save their files in Windows format before uploading.

Grading of report: The report will be graded on the clarity and completeness of each of the content components, as described above. This assignment is to help you develop/improve the skills, confidence and persistence needed to actively seek and obtain research experiences. It will also help you to identify and use resources, including student research organizations, UF informational websites, journal articles, etc.

3. Attendance (48 points): Since the major goal of this course is to learn about different types of research from the researchers themselves, students are expected to attend class, to be punctual, and to remain in the classroom until the class is over (3:00 pm through 3:50 pm). Forty-eight (48) of the 100 total points are based on attendance. To record attendance, students will be required to answer a quiz question on the canvas portal during class. The correct answer will be given to students who are in class. Students should bring either a laptop or download the Canvas App on their smartphone or tablet device. If absent (due to serious illness or death in the family), it is the student's responsibility to inform Dr. Koroly in advance and to get information missed from one's peers. One unexcused absence will be allowed. Other absences will lead to deductions in points (4 points/day) on the class grade. Note: attendance will not be taken during the first class on August 25.

4. Thoughtful completion of pre and post surveys (8 points): Surveys and directions for submitting them will be posted on the canvas page near the beginning and at the end of the course. This assignment will ask you to give a short profile of your background, and to offer your expectations of this course. At the end, you will be asked to reflect on the usefulness of this course as it pertains to your interest in or ability to pursue undergraduate research, and to give feedback to help improve the content/format of the course for future semesters.

There are 100 total points available, with the grade cutoffs as shown in the table at right. These grades are “guaranteed”, i.e., 92% or above will always be an “A”.

No exams will be given.

Grade	Percentage cutoff
A	92%
A ⁻	90-91%
B ⁺	86-89%
B	82-85%
B ⁻	80-81%
C ⁺	76-79%
C	72-75%
C ⁻	70-71%
D	60%
E	59% or less

Special Needs - Students with documented special needs should notify the instructor (Dr. Koroly) as soon as possible so that necessary arrangements can be made.

Class environment - We wish to have an environment conducive to learning. Disruptive behavior may result in lowering of grade or dismissal from class. Even quiet talking disturbs your classmates AND the lecturers. Beeping devices, such as cell phones, are particularly offensive. Please turn off all beeping or buzzing devices upon entering the classroom. Use computers only for taking notes and recording attendance; students using laptops or other devices to search websites, send emails/messages, etc. will be dismissed from the class. **NOTE:** Except for bottled water, no food or drinks are allowed in the classroom.

Academic Integrity - All work in the class must be your own. Copying from any source (e.g., classmates, past students, published sources, internet), without appropriate citations, for any assignment is plagiarism. This is a serious offense and can result in a grade of 'E' for the course as well as disciplinary action from the university. **NOTE:** Students may NOT copy information from a professor's website to put into their reports. All reports must be written in the student's own words.

Let's all work together to have a superb semester!