

BSC 4931 | Senior Seminar | Fall 2017 | U07

Instructor: Prof. Saldana-Caboverde, Ph.D.

Class Meeting Time: Tu 2:00 – 3:15pm.

Class Location: PC 449

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Office Hours: Tu 11:00am – 12:30pm & Th 11:00am – 1:00pm or by appointment.

Course Description

Senior Seminar is designed to help Biology and Marine Biology seniors to incorporate the knowledge and skills they have obtained throughout their undergraduate studies. The goal of this course is to provide you with the skills necessary to research primary scientific literature and to effectively integrate and communicate research findings.

Course Objectives

To write a clear and articulate **review paper** that synthesizes current scientific findings, starting with choosing a topic to completing a properly cited paper. You will then share your findings with the class in the form of an **oral presentation** worthy of a scientific meeting or job talk. In addition, you will write, or improve upon, your **Curriculum Vitae** (CV).

Pre-requisites

PCB 3043, PCB 3063, PCB 4023, and PCB 4674.

Learning Outcomes

By the end of this seminar course, you will be able to:

- Effectively research the scientific literature.
- Distinguish between primary literature and review papers.
- Integrate the findings from various primary literature sources into a cohesive and thoughtful review.
- Deliver a professional presentation of your research topic, and address questions from the audience.
- Provide constructive criticism of a science talk.
- Write an effective CV, and understand the differences between it and a resume
- Understand the importance of ethical conduct in research and professional settings.

Course Themes

This semester you will have the choice of one of two themes for your review and presentation (the review and presentation must be on the same topic). These themes are "*The Microbiome*" or "*Fact or Fiction? Discussing the Validity of a Biology Related Claim*". Please see a short description of each theme below:

The Microbiome

Microorganisms, which include prokaryotes and some eukaryotes¹, can be found in almost any habitat. Although invisible to the naked eye, these organisms greatly impact human, animal, plant, and environmental health. The microbiome, which is defined as the collection of microorganisms living in a habitat, makes important contributions to the system and changes to the microbiome have been associated with pathological conditions. For this reason, it is important to understand the relationships between microbiomes and their environments and the factors that can impact these relationships. In this senior seminar course, you have the option of conducting a literature review and formal oral presentation on the microbiome of a given habitat (organ, organism (animal or plant), or ecosystem). You will describe the major species of the given microbiome, their contributions to the system, and the environmental factors that impact the composition of the microbiome and/or its relationship with the host.

Fact or Fiction?

Have you ever come across a biology-related claim and wondered whether there was any scientific evidence to support this claim? Scientific studies are often the topic of discussion in the news, social media, and even during family dinners. This semester, you have the option of researching the validity of a biology-related headline or sound bite you have come across in the past.

Course Materials

- No textbook is required for this course; however, I encourage you to invest in a writing manual. It will become a very useful resource not only for this course but also throughout your professional career.
 - **Suggested writing manuals**
 - Jan Pechenik, *A Short Guide to Writing About Biology*, 7th ed., Pearson-Longman
 - William Strunk, Jr. *The Elements of Style* (originally published in 1920, last published 2006)
 - Diane Hacker and Nancy Sommers, *The Bedford Handbook*, 9th ed, Macmillan
 - Kurt Schick and Laura Schubert, *So What? The Writer's Argument*, Oxford University Press
 - **Free online resources (online resources are linked to webpages):**
 - [Bates College \(2011\). How to write a paper in journal style and format.](#)
 - [Griffies, S., Perrie, W., & Hull, G. \(2013\). Elements of style for writing scientific journal articles.](#)
 - [Marek, P. \(2014\). The basics of writing in APA style.](#)
 - [Tischler, M. \(2014\). Scientific writing booklet.](#)
 - In addition to these resources, the FIU Center for Excellence in Writing (<http://writingcenter.fiu.edu>) offers free, personalized help and writing workshops.
- Assignments and their associated instructions, rubrics, checklists, and/or templates will be posted on Blackboard under "Assignments."

¹ Although viruses are often considered microbes, these are not included in the description above because they are classified as noncellular entities; nevertheless, the effect of the microbiome on the susceptibility to viral infection and the potential effect of viruses on the microbiome of a system are suitable subtopics for discussion as long as these are within the scope of your review.

Grade Distribution

Description	% of Total
Attendance & Participation	10%
Seminar Attendance & Reflection	3%
Review Paper	
• Tentative Title and Short Description	2%
• General Outline (2 pages, double-spaced) & 5 References	5%
• Detailed Outline (4-5 pages, double-spaced) & 10 References	10%
• Final Paper (10-12 pages, double-spaced) & References	25%
Oral Presentation	
• Mini Presentation	4%
• Presentation	25%
• Participation (questions & evaluations during formal presentations)	6%
Curriculum Vitae	5%
ETS Major Field Test in Biology	5%
TOTAL	100%

Attendance (10%)

Given the nature of this course, attendance and participation are important. You will get the most out of Senior Seminar if you are actively engaged in class discussions. Doing this will help you in the process of writing your review and putting together your presentation. Attendance is mandatory and constitutes 10% of your grade. One percentage point (1%) from your final grade will be deducted for each unexcused absence. In order to receive credit for attendance you must arrive on time and remain in class for the duration of the period.

Seminar Attendance & Reflection (3%)

Attend one biology departmental seminar (Mondays, 3:00-4:00 PM in WC-130) or another approved scientific talk. Write a 1-2 page reflection (1.5 spaced) briefly discussing the science, and then focus on the speaker's presentation style, including what engaged you, what did not. Discuss traits or techniques you would like to emulate, and what you would like to avoid. Reflections are due no later than one week after the seminar takes place (submit via Blackboard link **prior to the date of your formal presentation**).

Review Paper

Below you will find general information on each of the assignments associated with your review paper. Checklists/rubrics will be provided for each assignment under the "Assignments" link.

Tentative Title & Short Description (2%):

- Provide a specific and concise tentative title for your review paper
- Include a 150-250 word description of your topic (background information, the focus/aim of your review). **Please note** that in order to receive full credit you must adhere to the minimum word count requirement
- Submit via discussion post (thread: Tentative title and short description) by 11:59 PM of the due date

General Outline & List of 5 Annotated References (5%):

- Please see template provided
- 2 pages, double-spaced, not including references
- 12 pt. font (Times New Roman ONLY)
- Must include 5 references with annotations. Of the 5 references, at least 4 must be primary research papers, 1 can be a review paper
- Format references according to the American Psychology Association (APA), 6th edition style (more information provided under "Final Review Paper" below)
- Submit by 11:59 PM on the due date

Detailed Outline & 10 Formatted References (4 pages) (10%):

- 4-5 pages, double-spaced, not including references
- 12 pt. font (Times New Roman ONLY)
- Use full sentences (template is provided)
- Must include in-text citations
- Must include 10 references. Of the 10 references, at least 7 must be primary research papers, 3 can be review papers
- Format references and citations using the American Psychology Association (APA), 6th edition style (more information provided below)
- Submit by 11:59 PM on the due date

Final Review Paper (10-12 pages) (25%):

A review of the literature on your chosen topic. Your paper should serve as a synthesis of what is currently known about your topic, and what is being investigated. Do not simply summarize each of your primary sources; rather, integrate the information presented, and come up with your own interpretation of the data. If the data on your topic is controversial (i.e. some articles support one view, while others take a different stance) you must address both arguments. Information about how to properly format your paper and references is provided below and in the Assignment link for the review paper. Papers will be graded by rubric. Please take time to review the rubric so that you are aware of the expectations for the review paper.

Format your paper according to the template provided in the assignment link. The general instructions are as follows:

- 10-12 pages, double-spaced, not including figures and references
 - NOTE: Figures are optional
- 12pt font (Times New Roman ONLY)
- Must include in-text citations

- Must include 10 references. Of the 10 references, at least 7 must be primary research papers, 3 can be review papers.
- Of your primary references, at least 3 must be for studies conducted in controlled settings (i.e. using animal models, cell culture, data collection in the field, etc.)
- Include an appendix with the abstract from each paper used in your review.
- Submit by 11:59 PM on the due date
- Format references and citations using the American Psychology Association (APA), 6th edition style.
 - Examples of formatted references are provided below, but will also be provided in the template document for the paper. Please make sure you format your citations and references per APA, 6th guidelines to avoid having points deducted from your final paper. You will be taught how to use freely available citation managers to help you automate this process.

Grichnik, J. M. (2008). Melanoma, Nevogenesis, and Stem Cell Biology. *Journal of Investigative Dermatology*, 128(10), 2365–2380. <https://doi.org/10.1038/jid.2008.166>

Parkitny, L., & Younger, J. (2017). Reduced Pro-Inflammatory Cytokines after Eight Weeks of Low-Dose Naltrexone for Fibromyalgia. *Biomedicines*, 5(2), 16. <https://doi.org/10.3390/biomedicines5020016>

Pedersen, L., Idorn, M., Olofsson, G. H., Lauenborg, B., Nookaew, I., Hansen, R. H., ... Hojman, P. (2016). Voluntary running suppresses tumor growth through epinephrine- and IL-6-dependent NK cell mobilization and redistribution. *Cell Metabolism*, 23(3), 554–562. <https://doi.org/10.1016/j.cmet.2016.01.011>

- Format in-text citations as follows:
- For one author: (Grichnik, 2008, p. 2366).
- For two authors, both last names are used: (Parkitny & Younger, 2017, p. 3).
- For 3 or more authors: (Pedersen et al., 2016, p. 558)
- **Extra Credit:** Take your review paper to [The Center For Excellence in Writing](#) and email a receipt of your visit (provided by the Center for Excellence in Writing) provide a receipt with your submission to receive **5% extra credit toward the grade of your final paper.**
- Note that 5% will be deducted from your raw score (i.e. out of 100 points) for each day an assignment is late (See more information on late assignments below).
- Papers will be checked for plagiarism through Turnitin integration via Canvas. **Plagiarism will NOT be tolerated and will result in a failing grade for the course. Please refer to the Academic Honesty section below for more information on plagiarism.**

Oral Presentation

Mini Presentation (4%):

A 4-5 minute presentation of 4 slides from your presentation which present key concepts of your chosen topic. You are to present:

- One Background Slide
- Your Question or Hypothesis slide
- Two data slides (NOTE: Do not title the slides “Data Slide”, write a title that is descriptive of the information shown on the slide). These 2 slides **MUST contain a figure, graph, or table** from two of your primary sources and include a citation.

Formal Presentation (25%):

- A 10 – 12-minute presentation of your research topic, with a 3 – 5-minute Q&A.
- Your presentation must contain data from at least 4 of the primary sources you used for your review paper (figures and graphs are preferred over tables).
- The presentation must be uploaded to Blackboard on the date you are scheduled to present prior to class time. Additionally, please bring your presentation on a memory stick.
- Presentation dates and times will be chosen during on September 12th. Please check your calendar and come prepared with a first and second choice of when you would like to present.
- **PLEASE NOTE: Audio will be recorded for ALL presentations.**
- Your presentation will be graded using the [Southern Association of Colleges and Schools \(SACS\) Rubric for Oral Communications](#)
- **Professional attire is required for your presentation**

Participation (6%):

In addition to presenting you will also be required to ask at least 4 thoughtful questions throughout the course of the formal presentations and to complete a short (anonymous) evaluation for 2 classmates.

Curriculum Vitae (CV) (5%)

A professional-looking, well organized 1-2 page CV. Instructions and samples will be provided on Blackboard. Please make sure to save this document as a pdf file to avoid loss of formatting.

ETS Major Field Test in Biology (5%)

The ETS Major Field Test in Biology is a nationally scored exit exam for Biology and Marine Biology majors. It is a two-hour, multiple choice (150 questions), online test graded by the Educational Testing Service that allows you to see how you rank nationally against your peers (this exam is a graduation requirement). For the purposes of this class, scoring is as follows:

- 1-29 percentile: 3pts
- > 30 percentile: 5pts

Links for more information: [Detailed description](#) and [sample test questions](#)

Grading Scale

Final grades will be assigned according to the following grading scale:

Letter Grade	Range
A	90 - 100
B+	< 90 - 85
B	< 85 - 80
C+	< 80 - 75
C	< 75 - 70
D	< 70 - 60
F	< 60

There is no curving and no rounding-up.

Make-Ups/Late Assignments

- Formal Presentation: You will not be allowed to make-up your oral presentation unless you can provide official documentation (For example: doctor's note, court summons, police report) that your inability to be present was the result of an emergency (**see what constitutes an emergency below**)
- Other assignments: Although late assignments will be accepted, 5% will be deducted from your raw score for each day your assignment is late. **Please note** that the maximum number of days an assignment may be submitted late will be indicated for each individual assignment; late assignments will not be accepted after the "last day to submit late assignment date".

Emergencies

Emergencies are unforeseeable and unavoidable events that preclude you from being able to submit an assignment in a timely manner or to attend a required on-campus exam or presentation.

Emergencies include:

- Serious illness/hospitalization
- Death of an immediate family member
- Car accident

You will be required to provide documentation (i.e., doctor's note, certified copy of death certificate, or police report) in order to receive an extension or make-up in case of an emergency. It is your responsibility to contact the professor as soon as possible. Examples of unacceptable excuses: common cold, family problems, transportation problems, etc.

Incomplete (IN) Grades

In the case of extreme circumstances arising from reasons beyond the student's control (examples include: accident, death of an immediate family member, serious illness), an incomplete (IN) grade may be given at the instructor's discretion (official documentation will be required).

Please note:

- IN grades will not be given prior to the Drop date (i.e. last day to drop with a DR).
- In order to receive an IN grade, a student must have completed at least half of the assigned course work and have a passing grade.
- The course must be completed within two terms; otherwise, the student will receive the grade he/she would have earned without being given credit for any incomplete assignments (this will likely be a failing grade).

PLEASE NOTE: An unfortunate event, such as the death of a family member, does not automatically guarantee that you will be granted an incomplete for the course. Each case will be carefully evaluated when making a decision.

Policies and Academic Integrity

Policies: Please review the [FIU Policies](#) webpage. The policies webpage contains essential information regarding guidelines relevant to all courses at FIU, as well as additional information about acceptable netiquette for online courses.

Conduct: It is everyone's responsibility to maintain a professional environment that promotes learning, minimizes distractions, and protects students'/instructor's rights. Students who fail to adhere to the

standard code of conduct set forth by the FIU Student Handbook and the FIU Policies webpage may be subject to disciplinary action in accordance with university policies.

Sexual Harassment: Sexual harassment violates student and faculty rights and will not be tolerated. FIU's sexual harassment policy can be found at:

http://hr.fiu.edu/uploads/file/EOP/Sexual_Harassment_Policy_as_of_02-10.pdf

Academic Integrity: Florida International University has a strict, no-tolerance policy against cheating and plagiarism. The purpose of this course, and of a college education in general, is to provide you with the knowledge you will need as a professional, and to empower you to think independently. Cheating and plagiarism are counterproductive to this purpose, disrespectful to your colleagues, and will not be tolerated. How you conduct yourself now is an indication of the kind of professional (physician, dentist, pharmacist, nurse, scientist, etc.) you will be in the future.

- **Plagiarism** is the act of passing another's work, whether or not the work is published, as one's own. Examples of plagiarism include:
 - Paraphrasing someone else's ideas without the use of appropriate citations.
 - Copying quotes verbatim without the use of quotation marks (NOTE: quoting (even when quotation marks and citations are used) is strongly discouraged in scientific writing. In order to demonstrate understanding you must be able to write in your own words (and remember to always cite the author(s)).
 - Changing a few words in a sentence without actually writing the sentence in your own words.
 - Turning in someone else's work as your own (copying your classmates' work).
 - Giving the incorrect citation
 - Turning in work you have already turned in for another class.
 - Please visit <http://www.plagiarism.org/> for more information on what constitutes plagiarism and how to avoid it.

Cheating and plagiarism will not be tolerated. Any instances of cheating or plagiarism will be dealt with according to FIU's plagiarism and academic misconduct policies, which can be found at: <http://academic.fiu.edu/polman/sec2web.htm#two-forty-four>.

Learn more about the university's [resources and policies on academic integrity](#), particularly as it pertains to online courses.

ADA Accommodation Statement

Students with a documented disability as per the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973 (PL 933-112 Section 504) may request accommodations (physical or academic) by contacting the [Disability Resource Center](#) (tel. 305-348-3532, TTY/TDD 305-348-3852). The student is responsible for contacting the instructor as soon as possible so that reasonable accommodations can be made.

Schedule

Date	Topic	What's Due?
Aug 22	Introduction and Theme	
Aug 29	Electronic Databases & Resources Primary vs. Review Papers	Topic Ideas (Bring your laptops)
Sep 5	Reading and Interpreting Scientific Papers Plagiarism & Ethical Conduct in Research	Tentative Title and Short Description (Submit through Blackboard by 11:59 PM)
Sep 12	IRMA	
Sep 19	Preparing and Delivering a Science Talk Writing a Review Paper Death by Power Point (Blackboard)	Select presentation dates (tentative)
Sep 26	Curriculum Vitae vs. Resume Interview Skills	General Outline & 5 Annotated References (Submit through Blackboard by 11:59 PM) Select presentation dates
Oct 3	Interview Hot Seat	Review Common Interview Questions
Oct 10	Discussing Scientific Data	Read Article Posted to Blackboard
Oct 17	Show us Your Data	Discuss one slide with data from one of your sources (submit to BB by class time) Detailed Outline & 10 References (Submit through Blackboard by 11:59 PM)
Oct 24	Mini-Presentations (9)	Mini Presentations (Group 1) (Submit through Blackboard by class time)
Oct 31	Mini-Presentations (9)	Mini Presentations (Group 2) (Submit through Blackboard by class time)
Nov 7	Formal Presentations (4)	Final Review Paper & CV Due 2 Weeks After Presentation
Nov 14	Formal Presentations (4)	Final Review Paper & CV Due 1 Week After Presentation
Nov 21	Formal Presentations (4)	Final Review Paper & CV Due 1 Week After Presentation
Nov 28	Formal Presentations (4)	Final Review Paper & CV Due 1 Week After Presentation
Dec 5	Formal Presentations (2)	Final Review Paper & CV Due 1 Week After Presentation
Dec 12	ETS Major Field Test (OE 309) (Time: TBA)	

*NOTE: The students submitting their paper during the first due date get an extra week because of adjustments to General & Detailed Outline due dates.