

Senior Seminar BSC 4931

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Office - OE 240 Office Hours: Mon. and Wed., 5:00 - 6:00pm and Tues and Thurs afternoons

Class Web Site: on FIU Blackboard

Course Description: A one-credit seminar course designed to help senior biology majors integrate the skills learned during their undergraduate studies by teaching or refining skills used in conducting scientific research and public speaking, and in preparing for advancement either to graduate school or in job seeking.

Course Objectives: To write a *clear* and *articulate* research paper, starting with choosing a topic to writing a *properly cited paper*. You will then share these results with the class in the form of an oral presentation *worthy of a scientific meeting or job talk*. In addition, you will write a *Curriculum Vita* or resume and a personal statement, as well as sharpen your interviewing skills.

Textbook: None required, however it is suggested that you use Jan Pechenik's, A Short Guide to Writing About Biology, 6th ed., from Pearson-Longman as a reference.

Also, *The Elements of Style (1918)*, by William Strunk, Jr. and E. B. White is a valuable resource.

Grade Scheme: A: 90-100

B+: 87-89

B: 80-86

C+: 77-79

C: 70-76

D: 60-69

F: <59

Distribution:

- I. Attendance - 15%
- II. Curriculum Vitae - 5%
- III. Presentation - 30%
- IV. Research Paper - 45%
- V. ETS Major Field Test in Biology - 5%

I. Attendance (15%): Attendance is mandatory since this is a seminar course and both your presence and in-class contributions are important (5% deduction per class with one excused absence permitted).

II. Curriculum Vitae (5%): Write your CV given the guidelines we outline in class. If you want to prepare your CV in a different format (i.e., specific to your field), you must get

that format approved prior to submitting your final CV. Late submissions lose 1% per day it is late.

III. Presentation (30%): This will be a 10-12minute oral presentation of your research paper. Your peers will complete anonymous evaluations of your presentation and will assess areas such as content, effectiveness of delivery, visual aids, *etc.* These evaluations, in addition to my own, will comprise your grade. Failure to present on your previously agreed to date will result in an F for the presentation.

IV. Research Paper (45%): Write a 8-10 page research paper using scientific literature (using primary literature and no more than one or two review papers) and a minimum of ten citations. Your final submission will include an abstract, the paper (properly referenced) and a list of references.

- topic (5%).....due...see below
- general outline of paper (1 page; 5%).....due...see below
- detailed outline of paper (2-3 pages) and
list of references (3rd or 4th page; 5%)....due....see below
- final paper (30%).....due....see below

Format references as follows:

Salmena L, Poliseno L, Tay Y, Kats L, Pandolfi PP. 2011. A *ceRNA* Hypothesis: The Rosetta Stone of a Hidden RNA Language? *Cell*. 146: 353-358.
(NB: References are single spaced within the reference, double spaced between references.)

Within the text, cite as: (Salmena *et al.* 2010).

If it is two authors only, both last names are used: Balcazar and Douge, 2011.

12pt font, double spaced, stapled, hard copy handed in at the beginning of class on the due date and on-line submission to Turnitin.com (**no Turnitin = no grade**). Late submissions lose 1% per day it is late. ***You are by no means allowed to “recycle” a paper you wrote for another class. If you do this it will count as a zero. This is to be an original piece or work.***

V. ETS Major Field Test in Biology (5%): State mandated Biology majors exit exam. 2-hr, multiple choice, on-line test graded by the Educational Testing Service. I will try to provide sample test questions on the Blackboard website.

Cell phone use - there is none. No calls, no texting, nothing. If you have some kind of emergency situation talk with me before class. Otherwise, no excuses. Turn it off.

Plagiarism - don't do it. I will check, and I am not forgiving. The University is also unforgiving. University policy states that the proper consequence for plagiarism is failure of the course. A complaint will be placed in your file and has the power to follow you. No graduate school, medical school, etc will accept an applicant who waives on their

integrity. Why should they? And by the way, if someone cheats off of your paper you are implicated as well. If you need the specifics, please read the Academic Misconduct procedures and sanctions as outlined in the *Student Handbook*.

Be respectful - There are 18 of us in this room. Everyone deserves (and is encouraged) to participate in our discussions. Please do not have side conversations - if you have something important to say, I would like everyone to benefit from your wisdom or question. If it is not important, save it for when you are out of class. When tempted, imagine how you would feel if I sat there having a conversation with your neighbor during your presentation.

Outline Example

Title

- Should inform the reader of what the paper is about.
- When constructing a title, choose informative over cute.

I. Introduction: Topic sentence that states the basic idea/premise of your paper. For example, if you are examining the role of neuropeptides in parental behavior, your first sentence might introduce parental behavior and its significance in species survival (Reference).

- a. Introduce your system and explain why it is important
 - i. Define the system, its function, types present, etc. (Reference)
 - ii. If you are comparing organisms, briefly introduce the organisms (Reference)
 - iii. Provide the scientific reasoning as to why this is interesting
- b. State the main focus of the paper (e.g.: In this article I will review/explore/examine/investigate/etc the role of various neuropeptides involved in parental behavior)
- c. Be brief and concise

II. Main Body. Topic sentence focusing on your major points (Reference).

- a. You may choose to devote one section to describe the behavior/ medical condition / brain region or problem that you are focusing on.
 - i. Background information
 1. Different types of parental behavior
 2. Adaptive value of a given behavior
 3. Brain correlates of the behavior
 4. Etc. (Reference)
 5. Include as many sections as you deem necessary to cover your main ideas.

III. Conclusion

- a. Summary
- b. Significance

IV. References (see below)

Should include at least 10 references. All from peer-reviewed publications.

Draft and final Paper format

- **8-10 pages** (not including bibliography, tables or figures)
 - Outline with my comments (for draft version)
 - Draft with my comments (for final version)
 - Cover page with your name and title
 - Please do not use fancy plastic covers or folders
 - Body of the paper - In text citations are required
 - Abstract (150-200 words)
 - Introduction
 - Content sections
 - Conclusions
 - Bibliography/reference page with **at least 15 references from peer-reviewed** publications, 10 of which must be primary source literature (See the section entitled “Citing References”)
- Times New Roman 12pt font, double spaced, 1 inch margins

Grading criteria:

Title (5%): Clear connection to the main focus expressed in body of the paper.

Abstract (10%): Expresses the significance of the topic, indicates what the main focus of the article is. Summarizes all main points of the article. Articulates the overall conclusion of the article.

Introduction (15%): Articulates the significance of problem/question to be addressed in the body. Clearly states what the main focus of the article will be (*In this article I will...*). Provides sufficient background to understand the relevance of the question/problem.

Main Body (25%): Good quality of information. Information is all relevant and directly related to the problem/question stated in the introduction. Main focus of the paper is clearly stated. Appropriate content depth. Ideas are well organized, good flow.

Conclusions (15%): Main ideas in the body expressed in the body are well summarized. No new information is introduced in the conclusions. Main questions in the field are addressed.

Language/Grammar (10%): Clarity. Keep wordiness to a minimum. Minimum use of passive voice. Good transition between paragraphs. Only one idea expressed per paragraph. Good paragraph structure. Proper grammar and spelling.

In-text citations (5%): No quotes. All ideas and facts that are not your own are paraphrased and cited. Followed instructions for in-text citation format.

References (5%): Followed instructions for formatting references. References are listed in alphabetical order with no numerals or bullets. Every reference listed in-text is listed here. Correct reference number: 15 peer-review minimum (journal articles)

Which literature sources are acceptable?

Most scientific literature can be broken down into two categories: primary and secondary. Primary literature includes articles that focus on a particular set of experiments and present data collected to address a hypothesis. The data in these articles are novel, have not been presented anywhere before and provide a new perspective on a particular field of study. All primary literature journals are peer-reviewed, meaning that before an article is accepted for publication, it is reviewed by fellow scientists who are knowledgeable in the field of study relevant to the article.

Secondary literature, on the other hand, often provides alternative interpretations of primary literature in the form of review papers, textbook chapters, and opinion pieces by other researchers in the field and simplified explanations in popular science magazines. Not all secondary sources are peer reviewed. In fact, excluding review articles and book chapters, most other forms of secondary literature (e.g. popular science articles) are not peer-reviewed. For your review, you may include secondary articles but only from peer-reviewed sources.

While performing literature searches for your review paper, keep in mind that primary and secondary literature is sometimes published in the same journals. The journals that publish primary, novel research often publish review papers highlighting progress in a particular field.

You may use all relevant primary research papers and only peer-reviewed secondary sources. Do not use sources that are not peer reviewed. Additionally, while you may use Internet search engines to locate and download research articles (www.scholar.google.com; <http://apps.webofknowledge.com>), you may not cite Internet websites (including Wikipedia).

Below are examples of acceptable and unacceptable journal sources for a lab report. You are not restricted to using only the listed “acceptable sources”, nor avoiding only the sources listed in the “unacceptable sources” column. As you complete your literature searches, be mindful of where your articles come from and who publishes them.

Acceptable sources of primary and secondary sources	Unacceptable sources of primary and secondary sources
Hormones and Behavior Journal	National Geographic
Animal Behavior Journal	New York Times
Science Journal	Wired Magazine
Nature Journal	Times Magazine
Ecology Journal	Wikipedia
Microbiology Journal	Popular Science Magazine
Scientific American Journal	Encyclopedias
Bioscience Journal	Websites of any sort

Formatting a References section

This section lists all articles or books cited in your paper. It is not the same as a bibliography, which simply lists references regardless of whether they were cited in the paper. The listing should be alphabetized by the last names of the authors. Different journals require different formats for citing literature. Below are a few examples of how to format references in your works cited:

I. Article with 1 author:

Last name, Initials (Year of publication) Title of paper. Name of journal
 volume number (issue number if available) : pp-pp

Example

Alves-Gomes, JA (2001) The evolution of electroreception and bioelectrogenesis in teleost fish: a phylogenetic perspective. *Journal of Fish Biology* 58:1489-1511.

II. Article with many (3 or more) authors:

Last name, Initials, Last name, Initials, Last name, Initials. (Year of publication) Title of paper.
 Name of journal in italics volume number (issue number if available) : pp-pp

Example

Bernal XE, Page RA, Rand SA, Ryan MJ (2007) Cues for eavesdroppers: do frog calls indicate prey density and quality? *The American Naturalist* 169:409-415.

III. Book

Last name, Initials (Year of publication) Title of book in italics. City of publication: Name of press.

Example

Maynard-Smith J, Harper D (2003) *Animal Signals*. Oxford: University Press.

1. Chapter/Section in a book

Last name, Initials (Year of publication) Title of chapter. In: Title of Book in italics and each word capitalized (Last name of editors, Initials, eds), pp-pp of chapter. City of publication: Name of Press.

Example

McGregor PK, Dabelsteen T (1996) Communication Networks. In: *Ecology and Evolution of Acoustic Communication in Birds* (Kroodsma DE, Miller EH, eds), pp 401-425. Ithaca: Cornell University Press.

Rules for Citing References in your text

While citing references in the text, do not use footnotes. Refer to articles by the author's last name and year of publication. Follow the examples below for specific instructions.

1. General format:

Once you explained an idea, finish your sentence with a reference (Author's last name, year of publication). Example: Oxytocin has been shown to regulate maternal behavior in multiple organism (Smith & Adams, 2005).

When mentioning the authors in the text, follow this format: Authors (year).

Example: In a study by Smith & Adams (2013), they found...

If multiple authors: Smith and collaborators (2013) found that...

2. Two authors

If your source has two authors, then include both names and the year of publication (Author's last name and Author's last name, year of publication).

For example, you can cite an idea from a textbook by finishing with the following reference (Freeman and Herron, 2007).

3. Three or more authors

If your source has three or more authors, then only include the last name of the first author, followed by *et al.*, and year of publication (Author's last name *et al.*, Year of publication).

Et al is an abbreviation from Latin *et alii* meaning, "and others." Since *alii* is abbreviated, it is followed by a period and a comma. Note, there is no comma or period after the first last name. Therefore, in the case of three or more authors, as in the reference example below, your in-text citation would look as follows (Bernal *et al.*, 2007).

Since *et al.* is an abbreviation in Latin, it goes in italics. Same applies to other words in Latin such as species names (e.g. *Drosophila melanogaster*), words like *in vivo* and *in vitro*, etc.

4. Multiple sources

If you are citing more than one reference, then include each reference in the same citation, but separate them with a semicolon (Last name, Year; Last name et al., Year; Last name and Last name, Year).

So, if I was talking about electric fish and wanted to cite the sources from examples below my in-text citation would look like this (Alves-Gomez, 2001; Bernal et al., 2007; Maynard-Smith and Harper, 2003).