

**BIOLOGY 4600: SENIOR SEMINAR
SPRING 2009
When: Thursday 2:00 pm - 3:15 pm
Where: Woodward Hall 155**

Instructor:

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Textbook:(optional) **Knisely K**, “A student handbook for Writing in Biology”, 2nd edition, 2004
Publisher W. H. Freeman

Course goals:

Senior seminar is a course providing Biology majors experience with reading, interpreting, and presenting primary literature in areas of Biology. Specific goals are to:

- Learn to critically read research articles and give a scientific presentation to an audience
- Formulate and present messages orally in such a way that appropriately addresses/assesses both the topic and the audience
- Communicate using proper grammar, syntax and vocabulary
- Communicate using appropriate non-verbal communication cues that enhance the spoken message (including eye contact, hand gestures, and facial expression)

Grading:

Grading will be based on two oral presentations, a written summary, class participation, and the PACAT exam. The 2nd presentation will be on the same article as the 1st and will require the incorporation of the feedbacks received following the 1st presentation. For the presentation, you will be judged on: your understanding of the paper; your ability to communicate effectively the content of the paper (organization, speaking skills, use of visual aids); use of critical thinking skills to analyze the content of the paper; ability to answer questions, proper length. The final grade will take into account the 1st presentation (20%), the 2nd presentation (50%), a written summary (20%), and class participation including questioning and evaluating other presenters (10%). In addition, assignment of your final grade may also be affected by your performance on the PACAT exit exam.

Oral presentations:

Each student will give two presentations on the same article from the primary biological literature. The 1st presentation should provide background to the scientific context and will last up to 20 min plus 5 minutes for questions. The 2nd presentation will be more focus on the results and limited to 12 minutes with an additional 5 minutes for questions. PowerPoint must be used for both presentations.

Choosing an article:

The article should be of interest to you and contains data of appropriate level for the students in the class. The article selected will have been published after June 1st 2007. Presentations will be based on research articles available electronically. Any research paper in the fields of oncology, immunology,

physiology, cell and molecular biology is acceptable. Make sure to obtain the instructor's approval of the article you wish to present a full two weeks prior to your presentation.

One week prior to your presentation, the article will be made available online.

Timeline for presentation:

- 1- Select a few research articles you wish to present, rank by preference (1, 2, 3)
- 2- Submit the list by Email to the instructor, get approval
- 3- Following approval, the article will be available online for all to download
- 4- Presentations will start on week 4 of the semester
- 5- 2-week following your 1st presentation, submit a written summary

Presentation time:

- 1- 1st presentation 20 min + 5 min for questions
- 2- 2nd presentation 12 min + 5 min for questions

Outline of the presentation:

1- introduction / background

Provide sufficient background information on the topic associated with the article chosen to allow students to understand the study rationale, the experimental system and the result significance.

2- Material & Methods

Describe the techniques used to obtain the data

3- Results/Discussion/Conclusion

Present the results and analyze the results based on authors' hypotheses.

What are your conclusions from the presented results?

How do the results further our understanding of the biological field studied?

Did the study meet its goals?

Were there any problem / limitation associated with the study?

What is/are the next steps?

Make sure to associate the hypothesis and aims presented in the introduction and the results and discussion.

Written Summary:

Two weeks following the 1st presentation, you will submit a written summary (3-4 pages) summarizing the paper using the following format:

Background

What were the question(s) to be addressed?

How does this research fit into the literature of the field?

Hypothesis

What is the specific biological hypothesis that was tested in the study?

Experimental design

What was the experimental strategy that was used to test the hypothesis?

Do not just list the procedures! Why were those procedures used?, How do they allow the authors to specifically test the hypothesis?

Statistical analysis

How were the data analyzed?

Were the tests chosen appropriate?

Results

Provide a succinct summary of the findings

Interpretation and conclusions

How did the authors interpret the results?

What conclusions were drawn relevant to the original hypothesis?
Do you agree that the conclusions are valid? Justify your response

References

You **must also include at least 4 references** from the scientific literature. These should be other primary literature articles that either follow-up on the article chosen or provide critical information to the research topic. You should get these articles through a library search. Do not use references that are cited in the article you chose to present.

Class participation

Attendance is mandatory. Class participation will affect your final grade. Participation will be evaluated using the following 2 criteria:

- 1- Participation in the question and answer period: Pay attention to the presentation so that you can ask questions.
- 2- Peer-review of the presentations: For each presentation, you will be given an evaluation sheet for the presenter. You must critically evaluate the presentation. If student evaluations are shared with the presenter, they will be de-identified (i.e., the presenter will not know who wrote the evaluation). Critical evaluation of the presentation by your peers is an important first step to a more objective analysis of your own performance.

PACAT Exam

A standardized test that assesses your overall general biology knowledge will be administered during Senior Seminar. This exam is used in many universities similar to UNC Charlotte. You must take this exam to receive credit for the course. If you score above the 50th percentile on the PACAT, your grade in seminar will be entirely based on the quality of your presentations, written summary and your participation to class. If your score is below the 50th percentile, the highest possible grade in this class is a B. Over the past several years, the average score for students at UNC Charlotte has been approximately at the 50th percentile. This exam will be given on January 24th and will last one hour (60 min).

Seminar presentation tips

- 1- pick a paper that deals with topics that are of interest to you, and that is of a level that you can understand.
- 2- the sooner you decide on you paper, the easier it will be.
- 3- Start your presentation NOW. The most common problem students have is waiting too long to begin. You need to choose your paper two weeks prior to you talk. Your goal should be to have your talk prepared as if you were giving it one week before you actually do. In that week, you can practice you presentation skills (see below)
- 4- Use visual aids! MS PowerPoint is a very powerful tool. Use some of the features to effectively help your presentation
- 5- Give enough background information and make sure to highlight the relevance of the research. Why should we be interested in this topic? Without sufficient background the audience will not be able to understand either the big picture or the experimental detail of the research presented. The discussion is where the background, hypothesis, data are brought together and you can tell the audience what it means and how it fits into the overall research field studied.
- 6- Practice, practice, practice. You may know the material very well but unless you practice you won't be able to convey that knowledge effectively to the class. Sign of lack of practice are your seminar being too short or too long, losing your place during the presentation, poor speaking skills, and unfamiliarity with the data presented. Practice whenever you have a few minutes.

Common problems that many speakers have include:

- 1- not making it clear why we should be interested in, what they are talking about
- 2- not giving enough background to understand the results themselves, or the significance of the research.
- 3- not putting it together during the presentation
- 4- not having enough time (having too much time) to make the presentation
- 5- Not speaking effectively (clear, loud, facing the audience, using proper diction, grammar)

PowerPoint tutorial

A tutorial on PowerPoint is available online

<http://www.bioweb.uncc.edu/workshops/poerpoint/index.htm>

And instructions on how to use PowerPoint in the podium setting will be provided in class.

Source of articles

You can use any electronically available journal as source of your article. For searching for article use key word use the Pubmed database of National Center for Biotechnology Information website jointly run by the National Library of Medicine and the National Institutes of Health

<http://www.ncbi.nlm.nih.gov/>

Some of these journals are available in the UNC Charlotte Atkins library <http://library.uncc.edu/>

Senior Seminar Schedule

- 01/10 Introduction of the course
- 01/17 CANCELED
- 01/24 PACAT Exam
- 01/31 How to prepare your seminar
- 02/07 3 x 20' min 1st presentations
1- Adeoti, O.; 2- Clifton A., 3- Gerst J.
- 02/14 3 x 20' min 1st presentations
1- Hudson A., 2- Jamison D., 3- Jibran A.
- 02/21 3 x 20' min 1st presentations
1- Moazzami, Y.; 2- Patel N.; 3- Patel R.
- 02/28 3 x 20' min 1st presentations
1- Suttlemyre K., 2- Tran D., 3- Witlock J.
- 03/13 Written summary preparation
- 03/27 Preparation for 2nd presentation
- 04/03 4x 12' min 2st presentations
1- Adeoti, O.; 2- Clifton A., 3- Gerst J.; 4- Hudson A.
- 04/10 4 x 12' min 2st presentations
1- Jamison D., 2- Jibran A.; 3- Moazzami, Y.; 4- Patel N.
- 04/17 4 x 12' min 2st presentations
1- Patel R.; 2- Suttlemyre K., 3- Tran D., 4- Witlock J.