*Welcome to Graduate Seminar II BSC662*

*Introduction:*

Scientific presentations are essentially arguments. A written manuscript, an oral presentation, a conference poster or even informal discussions of the primary scientific literature are evidence-based cases being constructed to support particular positions or at least some logical exploration that is supposed to lead to support of a particular position. This course is about constructing compelling, evidence-based arguments and communicating those arguments in traditional scientific formats, with an emphasis on oral communication in both formal and informal settings. The course is designed to be like a mock conference and two things occur at scientific conferences: presentations (both posters and oral presentations) and lots of discussion of the literature among your peers. Students who are at different stages of their graduate careers will gain valuable practice at oral presentations and lots of chances to grow more accustomed to reading and discussing the primary literature with your peers. Evaluation in the course will be based on the following:

1. A demonstrated capacity to lead and contribute to discussions of the merits and potential shortcomings of published, peer-reviewed research.
2. A demonstrated knowledge of your subject area.
3. A demonstrated ability in constructing an abstract.
4. A demonstrated capacity to convey information in an oral format including the ability to deliver the spoken component of an oral presentation and the ability to construct efficient and informative slides and figures.
5. A demonstrated ability to participate in the peer-review process through peer evaluation of both abstracts and oral presentations and participation in journal article discussions.

*General Information:*

Course Title/Number: GRADUATE SEMINAR II/BSC662

Semester/Year: FALL/2015-2016

Days/Time: MW/4:00-4:50 pm

Location: Science Building 374

Instructor: Herman L. Mays Jr., PhD

Office: Science Building 390

Phone: (304) 696-6692

Email: maysh@marshall.edu

Office hours: 10:00 am-12:30 pm

Credit: 1 hour

Prerequisites: BSC 660, BSC 661

*University policies:*

By enrolling in this course, you agree to the University Policies listed below. Please

read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/policies>

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

*Catalog course description:*

Oral presentation of individual topics.

*Student learning outcomes:*

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| **Student learning outcomes** | **Student learning outcomes: Practice** | **Student learning outcomes: Assessment** |
| Students will develop the skills in oral communication that will allow them to lead and contribute to discussions of the merits and potential shortcomings of published, peer-reviewed research. | Students will initiate and lead class discussions of the primary literature on specific scientific topics. | Discussion leaders will be assessed on their capacity to guide discussion and foster debate among the other students participating in the discussion as well as their knowledge of the subject. |
| Students will develop their knowledge of their field of study. | Students will be required to read and absorb and disseminate information from selected papers from the primary literature for their presentations, abstract assignments and group discussions. | Abstracts, presentations and group journal article discussions will allow the instructor to evaluate student competence in their field and basic knowledge of their field will be incorporated into their evaluations on these individual assignments. |
| Students will develop the ability to construct and efficient and informative abstract. | Students will be required to construct a draft abstract that will be subject to peer-review from their fellow students. Students will then incorporate reviewer comments into a final abstract submission. | Abstracts will be graded on the degree to which they successfully convey the basic information on a topic in a concise but maximally informative manner. |
| Students will learn to build evidence-based arguments and convey these arguments in the form of an oral presentation.  | Students will be expected to conduct oral presentations to the class based on their existing research or some proposed research. | Student presentations will be evaluated on their success in delivering the spoken component of an oral presentation and the student’s ability to construct efficient and informative slides and figures. Student performance will be evaluated by the instructor and by evaluation forms completed by their peers.  |
| Students will participate in the peer-review process and learn to formulate constructive critiques or their peer’s work. | Students will engage in peer review in verbal informal discussion through evaluating the positions of their classmates during journal article discussions. Students will also peer review student abstracts and oral presentations. | Student ability in peer review will be evaluated by examination of written reviews of both abstracts and oral presentations and by the student’s ability to engage in and guide a discussion. |

*Required texts, additional reading and other materials:*

There is no required text for the course.

Reading materials will be made available on the course Blackboard site.

Students are required to have access to Microsoft Office (Word and Powerpoint). If you prefer to use Apple Keynote software for presentations this is acceptable given you have access to an OSX laptop with an adapter compatible with the projector in room 374 of the science building. Adobe Illustrator is not required but may be helpful in constructing figures for presentations.

*Assessment:*

Grading Policy: Grading scale for the course will be as follows:

90-100% = A 80-89% = B 70-79% = C 60-69% = D ≤ 59% = F

Seminar Abstract 10%

Abstract peer review 5%

Journal discussion 20%

Seminar Presentation 50%

Seminar presentation peer reviews 5%

Participation/attendance 10%

Each assignment will be graded from 0-100 and then be scaled proportionately in the total grade (for example, receiving a 90% on your seminar presentation will count for 45% of your overall grade)

1. Seminar Abstracts: Seminar abstracts must be prepared by all MA and MS students. The title of the abstract should be concise and accurately reflect the content of the abstract. The body of the abstract should accurately summarize the content of the presentation. Abstracts should include an opening statement that indicates the importance of the research, and a brief summary of methods, results and conclusions. The body of the abstract (excluding the title) should not exceed 300 words. Draft abstracts are due on *September 9, 2015.* Final abstracts are due for all students on *September 21, 2015*. Seminar abstracts may be submitted electronically.
2. Seminar abstract reviews: Each student is expected to review all other student’s abstracts and submit there reviews as a single Microsoft Word file in addition to providing each student with a review of their abstract. Use the ‘Track Changes’ feature in Microsoft Word to conduct your review. Seminar abstract reviews may be submitted electronically.
3. Journal discussion: Each student in the course is expected to choose a topic and select 1-2 articles from the peer reviewed scientific literature for discussion. Students will be evaluated on their ability to foster discussion among the other students in the class as well as on their grasp of the material under discussion.
4. Seminar Presentations: Each student will present a seminar to the class. The type of seminar to be given depends upon whether the presenter is an MA or MS student and on how long he or she has been enrolled in the BSC program. In addition to delivery of the presentation students will electronically submit a pdf file of their presentation slides. Evaluation of the quality of the slides and figures will be part of the overall presentation grade. The following brief descriptions should be used as guidelines for preparing seminar presentations.
5. MA Seminar Presentations: Each MA student will present one seminar during the course of the semester. The seminar must be approximately 15 minutes in length (plus 5 minutes for discussion/questions). The student is required to present a research proposal in which they identify a clearly defined question for study and outline an approach for tackling this question. Proposal talks should synthesize recent (within last five years) research articles from high-impact, peer-reviewed journals directly related to the student’s area of interest, define some unanswered question derived from this synthesis of the recent research and propose a brief outline of how to answer this question. The topic for discussion should be chosen *via* discussion with the student’s MA advisor, other Biology faculty and peers in the graduate program.

MS Seminar Presentations: Each MS student will present one seminar during the course of the semester. The seminar must be approximately 15 minutes in length (plus 5 minutes for discussion/questions), and must reflect the student’s thesis progress. The content of the seminar is to be determined by the student in consultation with the student's advisor, and other committee members.

1. Third semester students (and more senior MS students who are not graduating in the current semester) must present a research progress seminar. The student should provide some background relevant to the question at hand and describe their approach, including the methods used to collect and analyze his or her data. The student should present the data collected and analyzed during the course of his or her thesis research to date, and discuss how the preliminary data address their specific research question. The student should discuss how their data and analyses compare with the findings of previous studies. Critical elements here are: a clear articulation of the discussion of methods and experimental design; data gathered to date; bearing of data on study hypotheses and relation to earlier work.
2. MS students who are graduating in the current semester may present a final thesis defense seminar. Students should present a summary of previous research in the field in order to provide a context for the importance of their work. The student should discuss the methods used to collect and analyze the data, and present the data collected and analyzed during the course of his or her thesis research. The student should discuss how the final data answer a specific research question or address a specific hypothesis (or not), and must discuss how their data and analyses compare with the findings of previous studies. Thesis defense seminars may be up to 40 minutes in length with 10 minutes for questions.
3. Seminar presentation peer reviews: Each student is expected to attend the seminar presentations for the other students and submit a review sheet for each student presentation. Comments should be constructive, professional and carefully designed to improve the presentation.
4. Participation/attendance: Attendance is absolutely essential if you are to derive maximal benefit from the course. This course is all about communicating science in both formal and informal settings and you cannot gain experience in communicating science if you are not present and contributing to the group. There will be a sign in sheet for each class session. Up to three absences may occur without penalty, however the fourth absence and each and every absence following will result in a 3% penalty to your final grade.

**FAQ**

**What paper should I choose for journal article discussion?**

Try to think about big questions that could have broad applicability across disciplines. Understanding the nature of species in biology, for example, is fundamental not just in ecology or systematics, but also for epidemiologists understanding biological pathogens or microbiologists surveying the human microbiome. Don’t choose papers that are entirely descriptive and narrowly focused. A survey of the macrofungi of a montane site in Southern West Virginia may be interesting but it does not foster all that much discussion outside of a group of mycologists. Try to choose papers that are not only broadly relevant across disciplines but also identify topics where there may be some ambiguity or controversy. It’s much more interesting to discuss what we don’t know than those areas where there is little disagreement. Often finding two papers that present opposing points of view on a subject is an excellent way to foster discussion.

**I’m shy and don’t like speaking in front of a group. What should I do?**

Relax. Your peers in graduate school should be both your best friends and your harshest critics. If ever there were a safe place to not be 100% on it is in a graduate seminar. This is a testing ground to allow you to build your confidence as a professional scientist. Think of it like learning how to be a trapeze artist. First you will need the net because later in your career there may be no net. Your peers in graduate school are that net. The goal is to leave the course with more confidence in your ability to communicate science than what you had coming into the course. You also have a role to play in developing the confidence of your peers and you don’t always do this by holding back. It’s OK to be critical of your peers as long as it is constructive.

**May I read my presentation off of a script?**

No. There was a time in academia when reading a paper in a presentation format mean just that, reading the paper to an audience. The best talks are those that are well crafted and rehearsed but don’t appear so. The slides should guide your presentation and there are ways to have prompts and notes on the computer screen that will be hidden to the audience but you should try to avoid verbatim recitation of a scripted talk.

**How do I make figures?**

A picture says a thousand words. Well-crafted figures in a presentation are much more valuable than miles of text, but a good figure, especially for a complex concept, is difficult to create. Try to be visual and graphical whenever possible. Data visualization is an entire field unto itself for good reason. Tools such as Adobe Illustrator can help in crafting effective figures. I’m available to help so please consult me if you are having problems making good figures.

Schedule (subject to change if circumstances deem necessary)

Fall 2015

August 24 M First day of class, Introduction

August 26 W Instructor Presentation

August 31 M Instructor-led journal article discussion: What is a species?

September 2 W Instructor-led journal article discussion: Are the *Geospiza* Ground Finches good examples of speciation?

September 7 M Labor Day – NO CLASS –

September 9 W Instructor-led journal article discussion: What is kin selection?

September 14 M Student-led journal article discussion

September 16 W Student-led journal article discussion

September 21 M Student-led journal article discussion

September 23 W Student Presentations

September 28 M Student-led journal article discussion

September 30 W Student Presentations

October 5 M Student-led journal article discussion

October 7 W Student Presentations

October 12 M Student-led journal article discussion

October 14 W Student Presentations

October 19 M Student-led journal article discussion

October 21 W Student Presentations

October 26 M Student-led journal article discussion

October 28 W Student Presentations

November 2 M Student-led journal article discussion

November 4 W Student Presentations

November 9 M Student-led journal article discussion

November 11 W Student Presentations

November 16 M Student-led journal article discussion

November 18 W Student Presentations

November 23 M Thanksgiving Break – NO CLASS –

November 25 W Thanksgiving Break – NO CLASS –

November 30 M Student-led journal article discussion

December 2 W Wrap-up discussion

December 7 FINALS WEEK – NO FINAL EXAM –