Seminar: Ecological Genomics  
Biol 491/503 Fall 2012

Instructors:  
Dr. Turk Rhen  
Starcher Hall 307  
777-4667  
turk.rhen@email.und.edu

Dr. Brian Darby  
Starcher Hall 317  
777-4678  
brian.darby@und.edu

Objectives  
You will improve your comprehension of research that integrates Ecology and Genomics. By reading and discussing primary literature, you will gain a deeper understanding of research techniques and tools used in modern biology, as well as the ability to critically assess research results and conclusions. By presenting and discussing papers you will also improve your ability to communicate effectively with professional biologists.

Class Format  
This seminar will be run in the format of a “journal club.” Each week one student will present a paper related to ecological genomics. Electronic copies (pdf files) of the paper will be available through the Content link on Blackboard at least one week before the presentation. You are expected to read the paper before class, even when you are not presenting!

Written Reviews  
One of our jobs as biologists is to evaluate the quality of papers that are submitted to journals and to make a professional recommendation to the editor(s) about whether the paper should be published or not. Each journal has its own guidelines for reviewers, but all reviews should answer some of the same basic questions. You will write a brief review of each paper (one double spaced page) and turn it in to the instructors at the end of class. Your review should answer the following questions, which are taken from the PLoS Biology (http://www.plosbiology.org/static/reviewerGuidelines.action):
“What are the main claims of the paper and how significant are they?”
“Do the data support the claims? If not, what other evidence is required?”
“Is this paper outstanding in its discipline? If yes, what makes it outstanding? If not, why not?”

Presentations  
Each student will present/lead the discussion of one research paper during the semester. One of the instructors will be assigned as your mentor. It is up to you to contact and meet with your mentor before your presentation. He will help you find a suitable paper, answer questions about the paper, and provide guidance in preparing your presentation. You must send an electronic copy of the paper to your mentor at least one week before your presentation so he can post it on Blackboard.

Selection of papers  
Although your mentor will help find a paper, you are ultimately responsible for finding and selecting a paper to present. The paper must be published in a peer-reviewed journal and cannot be a review article. The paper should be recent and must be approved by your mentor. Students are responsible for the content and clarity of their presentation.

Suggestions for presentations.  
1. Start with a general introduction/review, including why the research topic is interesting and background information on the topic.
2. Spend most of your time on the results, particularly the figures. Make sure you can explain how the data was obtained (methods). You do not, however, need to go over every figure.
3. Be prepared to answer questions! To stimulate discussion you can ask questions of the class!
4. You are not required to use PowerPoint for your presentation. However, visual aids make it much easier to present data. A white board and a LCD computer projector will be available for presentations. Please let your mentor know in advance if you will need a computer or special audio-visual equipment for your presentation.

5. This should not be a formal talk, but rather an informal presentation and discussion led by you!

6. Try to complete your presentation within 30-40 min. The last 10-20 minutes will be used to discuss the importance and quality of the paper, and the impact the results have on the field.

Grading

50% Presentation. We will provide a written evaluation of your presentation. The evaluation will be based on your understanding of the paper (i.e., background, hypothesis, methods, and results) as well as your presentation (i.e., length, audio/visual aids, style, success in explaining material).

50% Participation. Participation includes your written review, attendance at seminar, and contributions made in class. Your written review lets us know that you have read and thought about the paper before class. The review should also help you frame your thoughts, questions, or comments about the paper and make it easier to participate in the discussion. Asking questions and making relevant comments is a good thing!