

## MCB 181H Research Small Group

Dr. Tanya Renner

**Meetings:** Wednesdays 1pm-2pm on March 27<sup>th</sup>, April 3<sup>rd</sup>, April 10<sup>th</sup>, April 17<sup>th</sup>

**Location of Meetings:** Meder Conference Room (#B207), University of Arizona Campus Health Services Building (Highland Commons 1224 E. Lowell St., Tucson, AZ 85721)

**Email:** [tanyarenner@email.arizona.edu](mailto:tanyarenner@email.arizona.edu)

**Office Hours:** By appointment

*Please read your syllabi carefully.* This is a supplement to your MCB 181 Honors syllabus. You are responsible for all the information in both of these syllabi. Don't hesitate to contact me if you have any questions.

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Welcome to the MCB 181 H small research group!

**For the next four weeks we will be exploring the molecular evolution of chemoreception in terrestrial insects.** We will explore sensory adaptations, investigate a single gene family involved in chemoreception, and learn how genetic changes can result in functional divergence. By the end of our last meeting, you will be able to explain how biologists can infer the processes of evolution by studying genetic variation, in addition to describing how genetics is intertwined with ecology and biodiversity.

Each group will work on only one project/question/topic chosen by you or in consultation with the students in your group. The mentor (Dr. Tanya Renner) will guide students in identifying their specific research topic, help them to develop a hypothesis, and survey the literature to collect scientific data that will help support the hypothesis. It is very important that you attend each meeting in preparation for the **presentation and paper due on April 24th.**

**Format:** Please come to class with questions. Each session consists of Q & A, peer discussion, and activities to clarify the material.

**Location of files:** Papers, slides, and other pertinent information associated with research small group meetings will be posted on GoogleDocs. You will receive a notification in your University of Arizona email inbox prior to our first meeting on March 27<sup>th</sup> inviting you to the MCB 181H GoogleDocs folder. Please check this folder for new documents prior to our meetings.

**Working policy:** Be respectful and fair to your classmates. Scientific research is often very collaborative and since there is only one research topic per group, the students may share the work load in collecting information about the topic. Students may exchange and/or share notes and use the powerpoint presentation to prepare their final written report. However, the students may not discuss or talk about their report with other students, including other MCB 181H research small groups.

**ACADEMIC DISHONESTY is NOT TOLERATED. If caught cheating, you will be turned into the proper authority and you will be dealt with according to the Code of Academic Integrity. It's better to get a 0 for an assignment than to deal with all the trouble of an investigation! See the University of Arizona website for more information: <http://deanofstudents.arizona.edu/codeofacademicintegrity>**

**\*\*\*\*Important due dates:** Each group of 2 or 3 students will present their results using a ppt presentation to their MCB 181 honors classes on **April 24**. The group can decide on how to divide up the presentation but each student should plan on presenting for 10 min. Based on this experience, each student will also prepare a written report (3 pages double spaced) that they will submit in the appropriate D2L Dropbox (**Due April 24**). **\*\*\*\***

**Summary of Activities**

<b>Date</b>	<b>Subject of meeting</b>	<b>Assignment(s) due day of group meeting</b>
3/27	Introduction to insect chemosensory systems, important gene families involved, identify a hypothesis.	Please read the review by Leah (2013) prior to meeting, construct a hypothesis (due at end of class after we discuss).
4/3	Discuss papers posted on GoogleDocs, searching GenBank, creating a multiple sequence alignment, what is genetic variation?	Please read documents posted on GoogleDocs.
4/10	Discuss papers posted on GoogleDocs, how phylogenetics can help test hypotheses, how to build a phylogeny.	Please read documents posted on GoogleDocs.
4/17	Discuss papers posted on GoogleDocs, modeling a protein, functional divergence, how is genetics intertwined with ecology and biodiversity?	Please read documents posted on GoogleDocs.
<b>4/24</b>	<b>Final powerpoint presentation and written report due.</b>	See above. Presentation will take place in class on April 24 <sup>th</sup> . Submit written report to D2L.

