BIOL211 – Seafood Forensics

COURSE DESCRIPTION: Primarily this is a course about how to do science. How to develop scientific hypothesis, perform experiments, analyze data, write manuscripts, and publish results in a peer-reviewed journal. Along the way students will develop laboratory and general science skills and learn about fisheries and seafood sciences. This is meant to be an Introduction to research: students are not expected to have any prior research experience. The science will be focused on using forensics sciences (primarily DNA barcoding) to quantify seafood mislabeling (e.g., farm raised Talapia being sold as wild caught Salmon). Additional topics covered include seafood supply chains and markets, fisheries management, over-fishing and its impact on marine ecosystems, and the importance of food labeling in human health.

COURSE MEETINGS: FRIDAY 10:10AM-1PM Coker 214 – 3 contact hours per week

INSTRUCTOR: Dr. John Bruno, 340 Wilson Hall, jbruno@unc.edu
Office hours: Friday 9-10AM and TBA in Wilson 340

INSTRUCTOR: Dr. Blaire Steinwand, Coker 212, blairejs@live.unc.edu
Office hours: Monday 10:00AM-12:00PM and Wednesday 1:00PM-3:00PM in Coker 212

We are also available by appointment.

Please contact us if you cannot meet us during the times listed here. We would love to meet with you!

SAKAI SITE: You need an onyen to log on. Everything except the discussion board will be on the Sakai site. The syllabus, schedule, readings, links to training videos, updates and announcements, etc. It is your responsibility to check it regularly. At least daily.

TEXT: There is no textbook required for this course. Instead, reading assignments will come from the primary literature, news articles, and the instructor.

ADDITIONAL REQUIREMENTS: Basic knowledge of biology as demonstrated by a B or above in BIOL 101.

LAB EXERCISES: We will collect in-class assignments from time to time. These will often be based on the discussions we have about scientific literature in the field but could also relate directly to your research project. In addition, you will receive 5 points for actively participating each week in discussions and lab work as well as points for maintaining a lab notebook.

FINAL PAPER AND PRESENTATION: You will write up your results in a manuscript/paper at the end of the semester. This final paper will take the place of a final exam in the course. In addition, you will give a scientific talk on your findings to the group at our luncheon on April 15th where we will cook our seafood and feast on our results (location TBA)!
PIAZZA: There are many of you and your questions are important to us. However, it is often difficult for your instructors with so many students to address all of the e-mails that are received throughout the course of the semester. Unfortunately, as a result, sometimes your e-mails even fall to the bottom of our inboxes and go unanswered. Therefore, in order to address your questions and concerns more efficiently, we will be using an online platform called “Piazza.” You may post any questions that you have about the course to this site at any time and they will be answered by a fellow student or your instructors. Your questions may be more general and may relate to the course itself or they may be more specific and instead relate directly to content and/or material from class. In any case, Piazza will help you get them answered ASAP. You will receive a welcome e-mail from your instructors granting you access to the course within the first week of the semester and can start using Piazza right away.

WHAT YOU SHOULD BRING TO CLASS EVERY DAY:

1. Your lab notebook
2. Computer
3. Writing utensil
4. Enthusiasm and creativity!

COURSE GOALS

To introduce you to the process of science.

The lecture and the reading material will provide the basic content. You will gain hands on experience with techniques in molecular biology, learn how to formulate testable hypothesis, and design experiments to test them. You will read scientific literature and learn to write like a scientist. After this class, you will be prepared to do research in a lab on campus and to build upon this content with Biol202, Biol201, Biol205 and upper level courses in the Department of Biology.

When you Do the Science you will acquire basic laboratory techniques and skills needed to use genetic identification to determine the frequency of seafood mislabeling. You will develop a novel, hypothesis driven question, design an experiment that allows you to answer it, collect data, and interpret your findings.

When you Share the science you will write a paper / manuscript and give a talk with your lab partners to the class and members of the local community about your science.

You will Understand and communicate the relevance of the science. For example, you will read and discuss journal articles on seafood mislabeling and marine conservation to understand the application of the science you are doing.

EXAM: There will be one mid-term given during the session. For this exam you will need your PID number as identification on your exam sheet. Additionally, you may be asked to verify your identity, so it is required that you bring your one-card to each exam. Failure to produce a one-card or other picture ID if asked may result in a zero on that exam. Test material to study: lab note book, lab exercises, reading, homework, power point slides, learning objectives, and problem sets. To succeed in this class, it behooves you to take each reading/homework seriously and actively engage in all class discussions.
GRADING

Lab: Your final average is calculated:

Total for the semester = (0.35 lab exercises*) + (0.20 x mid-term) + (0.20 x final paper) + (0.15 final presentation) + (.10 quizzes)

*participation, in-class assignments, written proposals, lab notebook checks, etc.

In general, the scale for each letter grade comes very close to a 10 point scale. However we reserve the right to change that scale since it is impossible to predict the difficulty level of any particular test. We will keep you updated about the estimated scale as the course moves along.

COPYRIGHT POLICY

All course materials including your class notes and in-class assignments are covered by University Copyright Policy, @http://www.unc.edu/campus/policies/copyright%20policy%2000008319.pdf. This means it is illegal and an honor code offense to share your notes or any other course materials with anyone not directly affiliated with this particular class, i.e., no uploading materials to non-class sharing sites.

CLASS MEETINGS

The class will meet from 10:10 AM to 2:00 PM on Fridays in 214 Coker Hall. The laboratory and non-laboratory portions of the course will occur back to back and will often intermingle (there will not be a distinct break between the two; students might start a lab experiment, move on to another activity, like as a short lecture or paper discussion or group project, then go back to the laboratory work to complete the task).