BIOL 4195 – Supervised Practicum in Advanced Biology
Fall 2023

Instructor Information:

Dr. Jason Bruck
Office: 112 Miller Science Building
E-mail: Jason.Bruck@SFASU.edu
Zoom meetings available

Appointments:
→ Please feel free to drop by my office anytime; I don’t have “office hours” per se. If I am in, I should be able to make time to visit with you.
→ You may also schedule an appointment via email if you prefer.

Text and Materials: No required test. Some peer-reviewed articles may be assigned for reading.

Course Requirements:
Lab/field participation: 3 hours per week per credit hour
Research summary due 11 December 2023

Course Description:
Independent investigation into one of four studies: 1) Beluga Bioacoustics, 2) Dolphin Kin Recognition, 3) Marine mammal metanalysis, and/or 4) mouse care and research.

Student Learning Outcomes:
Students who complete Special Problems will be able to (depending on projects chosen):
1. Measure acoustic signals in cetaceans and score behavioral data or engage in a metanalysis of cetacean research.
2. Develop hypotheses regarding mouse behavior, kin recognition or communication, etc (PLO 1, 4).
3. Give oral reports on a weekly basis in lab meetings (PLO 2).
4. Write a summary of the project that includes an introduction, methods, results, conclusions, and literature cited section (PLO 1, 5). Due 11 December 2022.
5. Meet all other deadlines agreed upon by the student and advisor(s) during project planning and execution.

Program Learning Outcomes:
Each of the student learning outcomes listed above address the Biology Department Program Learning Outcomes as follows:
1. Demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of complexity (molecular/cellular through population/communities/ecosystems); biological principles and processes.
2. Clearly articulate scientific information in oral form. Provide clear structure and transitions; demonstrate audience-appropriate purpose, agenda, language and style.
4. Be able to design, carry out and analyze experiments to answer biological questions, including: scientific methods and instrumentation; safe and appropriate use of laboratory equipment; experimental design; data analysis; and familiarity with professional standards in science.
5. Career building, demonstrate preparation for future career and educational goals utilizing the
knowledge and training during their academic program by: awareness of personal competencies (strengths and weaknesses) and an understanding of professional and ethical behavior.

Research
Each student should participate in one or more of the following

- Understand how to categorize and score recorded behavioral data in belugas using PRAAT, Audacity and BORIS software.
  - Summarize research in a report (see next section) due at the end of the semester.
- Develop and test hypotheses about behavior and kin recognition in mice.
  - This includes learning how to care for mice and participating in animal care.
  - Summarize research in a report (see next section) due at the end of the semester.
- Understand how to score and interpret playback response data in kin recognition studies of bottlenose dolphins using BORIS software.
  - Summarize research in a report (see next section) due at the end of the semester.
- Participate in a multi-institutional metanalysis to determine the role captive cetaceans have had on the body of cetacean knowledge.
  - Gain familiarity using bibliography software.
  - Summarize research in a report (see next section) due at the end of the semester.

Research Summary or Review Paper:
The research summary or review paper is due no later than 11 December 2023 at 5:00 p.m. This document should summarize the context and background for the study, the data you collected or the papers you found, the methods that you learned as a result of your experience in the lab and field throughout the semester, and your conclusions. It should also include how this knowledge will apply to your career in the future.

Course Evaluation:
All students are required to complete a course evaluation at the end of the semester.

Important Dates, Course Policies Established by SFA:
Please see the SFA website for questions regarding add, drop, & withdraw dates, final exam overloads, where to go for help, etc.

Academic Integrity Policy (4.1)
The Code of Student Conduct and Academic Integrity (https://www.sfasu.edu/docs/policies/10.4.pdf) outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.
Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades Policy (5.5)**

Please copy and paste the following information regarding Withheld Grades into your syllabus. Add additional information as needed to meet your departmental or course needs.

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to [https://www.sfasu.edu/policies/course-grades-5.5.pdf](https://www.sfasu.edu/policies/course-grades-5.5.pdf).

**Students with Disabilities**

Please copy and paste the following statement and place it in your course syllabus.

To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Student Wellness and Well-Being**

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

**The Dean of Students Office** (Rusk Building, 3rd floor lobby)

[www.sfasu.edu/deanofstudents](http://www.sfasu.edu/deanofstudents)

936.468.7249

dos@sfasu.edu
The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education

Crisis Resources:

- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- johCrisis Text Line: Text HELLO to 741-741

Schedule: This schedule is tentative. Some topics may require more or less time to cover than what is scheduled below so the dates and topics may not match exactly what is shown.

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<td>1</td>
<td>Coordinate Schedule</td>
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<td>2</td>
<td>Overview of Projects</td>
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<td>3</td>
<td>Techniques, Project Setup, and/or Literature Search</td>
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<td>Data Analysis and/or Writing</td>
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About your professor:
Dr. Bruck was born On Long Island and mostly raised in Syracuse, NY (with stints in Ohio and Texas). He received his B.S. in Biology/Psychology from Long Island University (Southampton, NY) in 2002. After working for a year as an Adjunct Professor at LIU, he went to The University of Chicago for his M.A. and Ph.D. in Comparative Human Development specializing in Behavioral Biology, earning those degrees in 2007 and 2013 respectively. He then spent a year serving as an educator in an inner-city public-school system. In 2014 Dr. Bruck was hired as a Visiting Assistant Professor in the Department of Integrative Biology at OKState. After one year teaching in Oklahoma Dr. Bruck received a two-year Marie Curie Fellowship to study dolphins at the Sea Mammal Research Unit of the University of St. Andrews in Scotland (Est. 1410). In 2017 Dr. Bruck took a position as a Teaching Assistant Professor back at OKState where he was awarded a Woodrow Wilson Fellowship for Excellence in Teaching in 2019. He joined SFA last year as an Assistant Professor and is happy to be in TX. Dr. Bruck was named the 2021 recipient of the Four-Year Section Biology Teaching Award from National Association of Biology Teachers (NABT) and the 2022 recipient of the Society for College Science Teachers Outstanding Undergraduate Science Teacher Award. Dr. Bruck is married and has one daughter in Hudson public schools.


[https://www.npr.org/2022/06/14/1104971354/dolphins-recognize-each-other-urine-study-stephen-f-austin](https://www.npr.org/2022/06/14/1104971354/dolphins-recognize-each-other-urine-study-stephen-f-austin)