PSY 380-02
BNS COURSE-BASED RESEARCH EXPERIENCE

Credits: 3

Class Meetings:

- T/Th 1pm-2:15pm KHS 2225
- Some laboratory work must occur outside class periods. Please select times that fit in your schedule. Laboratory work cannot be made up
- Final Exam: Tuesday 12/9/25 12pm – 1:50pm

Prerequisites:

- Foundations of Behavioral Neuroscience (PSY 330)
- Students must complete regulatory requirements for IACUC and lab safety

Description: In this course-based research experience, students design and conduct research to understand how exposure to various environmental stressors impacts anxiety- and depression-like behavior in mice. In addition to behavioral testing, students will develop skills in animal handling and husbandry, research design and documentation, data analysis, and disseminating results.

Learning Objectives

- Explain the major methods of inquiry and statistical analysis in behavioral neuroscience with animal models.
- Demonstrate the purpose and process of the purpose and process of good laboratory practices (GLP).
- Collect, analyze, and interpret data on rodent behavioral tests.
- Evaluate the strengths and limitations of research strategies in behavioral neuroscience with animal models.
- Demonstrate the correct processes related to animal handling, husbandry, and behavioral testing.
- Explain methods, results and interpretation of the data collected in the context of literature in the field.

Topics

- Lab safety, animal care and use, animal handling and husbandry; purpose and process of protocols and documentation
- Strengths and limitations of animal models in neuroscience research.
- Collaborate with peers to design and conduct a research study in behavioral neuroscience using existing literature to justify specific methods and research questions.
- Collect, analyze, and graph data on rodent behavior.
- Interpret and explain results in the context of relevant literature in the field.
- Disseminate findings to a lay audience through oral presentation, written summary, and / or poster presentation.

Source(s) of information: This course will use only open-access resources such as
Introduction to Neuroscience Open Edition (Valerie Hedges) and other sources as provided in LMS
https://openbooks.lib.msu.edu/intronеuroscience1/

Missed Deadline Policy:

- *In-Class Activities:* There's typically no replacement for in-class work. Students can miss up to 3 classroom meetings (this is inclusive of "excused" and "non-excused" absences). If you must miss more than 3 classroom sessions, please see me.
- *Laboratory Activities:* There's definitely no replacement for laboratory work, though there will usually be some opportunities to schedule times that work best for you. If your schedule changes, you might be able to trade times with a peer. If you must miss a laboratory activity, please see me.
- *Online Assignments* are typically due at 11:59 pm Fridays with a 48 hr grace period; assignments are not considered late until after 11:59pm on Sundays (final exam is the exception). Most assignments are available in advance and can be turned in early. Submissions beyond the 48hr grace period are not guaranteed a grade or feedback. *It's dangerously easy to fall behind! If you're struggling, please meet with me ASAP.*
- *Test:* If you have a planned absence on a test day, you must take the test BEFORE you leave. If you have an unexpected absence on a test day, it may be possible to take it outside of class within the same week.
- *Husbandry responsibilities* are absolutely required, abandoning this obligation may result in a failing grade.

About the Instructor: Elizabeth Flandreau (she/her) (Please call me Dr. or Professor Flandreau.) I have a BA in Biology from Lawrence University in Appleton, WI and PhD in Neuroscience from Emory University in Atlanta. I did my postdoctoral work in La Jolla, CA at the Salk Institute and UCSD. I live in Allendale with my spouse. I have four daughters ages 13, 8.5, and 4, plus my angel baby, Georgia, who passed away at birth 8/12/2019. We also have a cat, Bayern. When I'm not nerding-out about brains, I enjoy podcasts…about brains, listening to music, and reading books. Complete List of Published Work in MyBibliography

Email Policy: Questions relevant to all students must be posted to the discussion board so everyone can benefit from the answer! DEFINITELY EMAIL ME IF… there's a broken link on Bb, something listed on the syllabus is not open on Bb, your question is urgent, or you have a personal matter that can't wait for a 1:1 meeting. I typically respond to emails within 1 business day.

How I communicate: *Thanks to nature and nurture, my style of communication is more direct than what might be expected in the local culture. I recognize this miss-match and work hard to add pleasantries and positive feedback to my written and verbal interactions with other humans. Indirect communication comes less naturally to me; I sometimes forget and jump straight into content. I promise to assume you all have the best of intentions in your communications with me and I hope you will likewise understand that I absolutely have the best of intentions in my interactions with you.*

Teaching Philosophy: This CURE is a high-impact opportunity to engage in mentored-research in a low-stakes environment. What do I mean by low-stakes? The data we collect do not have to be publication-quality. It's OK to make mistakes and essential to learn from them. Students will have autonomy in many of the decisions of the project plan and timeline. Other elements of the project require strict adherence to safety, regulatory, and scientific protocols. After completing this course, students will be better prepared for jobs as laboratory technicians, graduate programs in research, and more.

Office Hours: One of the most important resources for any class is the instructor! I am invested in your success and, whether it's 30 seconds or 30 minutes, I enjoy chatting with students outside of class. Please fill out this form to find a time that works for everyone. Office hours meetings are typically held on zoom. Grade-related questions must be addressed in office hours.

UNIVERSITY & COURSE POLICIES

GVSU Expectations of Inclusion and Integrity GVSU Policies*: https://www.gvsu.edu/catalog/navigation/academic-policies-and-regulations.htm*

The purpose of this course is to learn. Please treat classmates and instructors with respect in face-to-face and online interactions as well as conversations about others. If you have any concerns, please contact me or GVSU (616-331-3296). Earning a degree from GVSU means you achieved knowledge, skills, and abilities worthy of that degree. Please do not short-change your education or compromise your integrity. Instructors are required to report academic integrity violations. Most violations are not malicious but result from inattention to expectations.

To meet standards of integrity and authenticity…

1. *Know which resources you're allowed to use:* Resources you can (and should!) use for assignments: Your teammates, classmates, instructor, and readings.
2. *Use resources to **support** your learning, not to avoid learning.* The process of learning IS the purpose.
3. Not sure if you can use a resource? Ask!
4. *ALWAYS cite your sources:* In-text and end of text citations should be used when you've gained ideas, understanding, words, or definitions from a source (including your teammates!)

Authenticity and the *Own Voice* Standard: This class requires integrating content across topics and demonstrating knowledge through application. *Everything* you produce and submit must be authentically yours and in your own voice. Direct quotations and paraphrasing are incompatible with this standard. Submissions that do not meet this standard cannot be considered for credit.

How to generate authentic content in your own voice:

STEP 1: Understand the assignment and the content

- Many integrity violations occur because students don't understand the material at a deep enough level to explain it without using terms or definitions directly from a source.
- Are you unsure what a question is asking? Unclear about how to approach the topic? Use the discussion board, meet with classmates, meet with Dr. Flandreau.
- *Use reliable resources to build your knowledge*– starting with resources that are created and curated by the instructor for this course.
- Take careful notes on a page with the name of the source at the top; do not copy down words or phrases directly

STEP 2: Generate and evaluate content

- Avoid using notes while crafting your text. Ability to speak from memory is a great way to demonstrate that you've mastered the content and are using your own voice.
- Read your answers aloud. Does it sound like something you would say? Do you understand every word you've written? If not, take a step back, revise, and ask questions.
- As always, be sure to cite the sources that helped you develop the knowledge used in crafting your response.

Definition of "your own notes"

- Handwritten / drawn by you
- Words and phrases are authentically your own crafted based on your understanding of content from course resources.

Generative AI Policy: Written assignments must be *authentically yours*. *Disclosed* use of generative AI / large language models (LLM) in support of understanding content can be compatible with course and university policies. Using AI to avoid learning is not an acceptable use. Written answers that appear inauthentic will not earn full credit. Answers obviously not written by the student cannot earn credit.

***AI Use Disclosure*: include an appendix at the end of your assignment with the following info**

- Specific prompt you gave AI & Output from AI
- How this output was used.
- You may use this google form as a template. Please download your answers as well.

RESOURCES for SUCCESS

1. **Time:** One credit hour is defined as 1hr in class plus 2-3hr outside of class (or in the lab in this case).
2. **Technology**: Technology Requirements and software through GVSU MS Office, Zoom, Panopto.
3. **Support**: Please use module content, your instructor, classmates, and other resources within and beyond GVSU to support your learning. I design courses for inclusivity with opportunities for each student to meet all learning objectives. I've curated resources and designed assessments that I believe will guide everyone toward that goal. One of the most important resources for this course is me!!
4. **Library**: The GVSU library has additional resources related to understanding and producing scientific writing as well as important information on how to cite sources and avoid plagiarism. https://www.gvsu.edu/library/km/
5. Official **Accommodations**: Please work with DSR (https://www.gvsu.edu/dsr/) and communicate with me to make sure your needs are met in this course.
6. **Health, Safety, & Academic Success:** No one can reach their greatest academic potential if basic needs are not being met Please check out these resources if you are experiencing financial hardship , could benefit from a mental health counseling appointment or wellness appointment. The student academic success center also has excellent resources.

HOW AM I GRADED?.

22% Contribution is measured using self- and peer evaluations, instructor observations, and LMS statistics. In addition to attendance and attention to task, full grade in this category requires…

- *Preparedness:* complete preparation assignments and arrive to class and lab meetings knowing what to expect and having knowledge and skills to contribute to each task
- *Reliability*: show up when and where you're expected. Take ownership of tasks and follow through. Work with integrity and authenticity.
- *Communication*: Provide regular, clear, and constructive criticism. Disclose areas of confusion and ask for help. Acknowledge support received from others.
- *Collaboration*: Meaningfully engage with others and combine knowledge and skills toward the best possible quality work. Successfully follows instructions and provides leadership as appropriate.

20% Laboratory Skills are measured using practical tests (instructor observes students' work) and products for planning research, collecting and organizing data, and analyzing data.

28% Content: Beyond the hands-on activities, students will learn content related to history and ethics of research with animals, stress neurobiology and translational research in psychiatry. Assessments include reading quizzes and two written (closed-note) tests. Content = correct, complete, clear.

30% Scientific Literacy: Students will also learn to find and understand quality resources and learn to communicate research findings for a target audience. Assessments include written abstract, methods, results, a final poster, and poster presentation.

Graded Items

Instructions and grading criteria for specific assessments will be provided in class and / or on Bb LMS

Category	*Item*	*Grading*	*Grading Scale*	*Notes*
Contribution	Reflection and Evaluation Surveys	2.0%	Thoughtful completion	Surveys MUST be completed to receive a grade for the "Overall Contribution" category
	In-Class Debates, Discussions & Workshops	10.0%	Excell / Pass / Fail	Can miss up to 3 total without penalty provided contribution is made up online
	Lab Activities - Contribution	10.0%	Excell / Pass / Fail	Schedule times that work for you; these are required
Skill-Based Assessments	Mouse handling, weighing, behavioral testing	10.0%	Excell / Pass / Fail	*You must pass this skills test to pass the class, but you can have 2 repeat attempts if needed.*
	Record-keeping: project plan, weight records, run-sheets etc.	10.0%	Letter scale	*Your record-keeping must earn at least 70% to pass the class. You can have 2 repeat attempts if needed.*
Content-Based Assessments	Reading Quizzes	10.0%	Excell / Pass / Fail	(lowest 1 dropped)
	Tests 1 & 2	18.0%	Numeric Scale	Grading based on content (correct, complete, clear)
Scientific Literacy	Literature Search, Abstract, Methods, Results	10.0%	Excell / Pass / Fail	Grading based on content, quality, and progress
	Final Poster	10.0%	Numeric Scale	(group / team grade)
	Poster Presentation	10.0%	Numeric Scale	individual grade

Note: Adhering to IACUC regulations (including paperwork and husbandry) is required to pass the class