**BIO/PSY 351**

**Foundations of Neuroscience 2**

**Lecture Instructors**

Dr. Blatchley

[bblatchley@agnesscott.edu](mailto:bblatchley@agnesscott.edu)

404-471-6233

Office Hours: By appointment

Dr. Larimore

jlarimore@agnesscott.edu

404-471-6270

Office Hours: By appointment

**Lecture**

Tuesday & Thursday 11:30-12:45 Hybrid

https://agnesscott.zoom.us/j/92744714374?pwd=alFSL3QxQU8reU1wbGpGRDZRbkhFQT09

Meeting ID: 927 4471 4374

Passcode: 575217

**Required Text and Materials**

Neuroscience. Purves et al. 6th Edition. Oxford Press

Neuroscience Basics. Larimore. 1st Edition. Academic Press

**Course Description**

Students will understand the basic structure, function and organization of the mammalian nervous system and how sets of cells in the CNS and PNS operate in systems to produce both simple and complex behavior. Students will also be able to present their research findings in an oral presentation as well as in a written.

**Course Objectives**

This course is the second in a two-course sequence required for the Neuroscience major.  The first course (Foundations I) introduces students to the structure and function on the cellular elements of the nervous system.  This course (Foundations II) introduces students to the function and properties of neural circuits and systems. In this class, students will explore the organization of the mammalian brain, examine the function of sensory systems, neural regulatory circuits that govern behaviors like sleeping/waking and eating, and the circuits that allow us to learn and remember.

**Skill Objectives**

1. Critical thinking/Problem Solving – through weekly article analysis, students will be able to critically read and evaluate scientific literature. Through designing experiments and inquiry-driven laboratory experiences, students will sharpen their ability to think critically about neuroscience.
2. Oral Communication – through article presentations and lab poster presentations, students will demonstrate their abilities to present scientific findings to a broad audience.
3. Written Communication – through weekly assignments and the Grant pre-proposal, students will demonstrate their ability to write scientifically.
4. Teamwork/Collaboration – working with a lab team as well as a team for presentations will enable the students to practice real-world teamwork competencies that are taught as a part of SUMMIT.
5. Digital Technology – students will learn how to navigate various online resources to complete assignments and collaborate with peers. Students will actively use CITI, Canvas, PubMed, Google Drive and Power point.
6. Research Skills – as a result of this course, students can design an experiment, analyze the results, draw conclusions, and report on the research both with scientific writing and an oral presentation. The laboratory portion of this course is designed to enhance the learning in the lecture as well as progress the career of each student as a scientist.
7. Career Management – at the end of this course, there is a day to add the relevant skills gained from this course to a student’s CV or resume. Additionally, there will be time to work on personal statements and discuss cover letters.

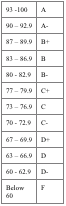
**Example CV Entry for this class**

*Agnes Scott College, Decatur, Georgia*

Spring 2021

Student Researcher, Lab Instructor’s Name, Ph.D., mentor

Based on current literature and knowledge, I designed a line of questioning to explore the role XXX in anxiety and depressive like behaviors in a mouse model. After completing CITI training, I worked with a diverse lab group to run the forced swim test and an open field test with 5 control and 5 variable mice. I analyzed the data using standard statistics. This data resulted in a poster presentation at a campus research day.



**LECTURE Final Grade**

Class Final Project (LOI) 100 points

Project Outline 15 points

Project Draft 20 points

Article Presentations 20 points

Weekly Assignment 270 points (30 points each x 9 assignments)

\*additional points or assignments may be added by the instructors

**General Course information**

\*\*\*To preserve the integrity of the classroom experience and to protect students’ privacy, which we are legally required to do, only students registered in the course may attend a Zoom class meeting.

**ONLINE AND HYBRID EXPECTATIONS**

Online and hybrid classes allow for flexibility and convenience. But online and hybrid classes require certain learning traits from you, the student.

1. Persistence and independence – You need to work daily on every class and persist through challenges. When you run into a challenge, make sure you seek help! Remember this is your education and only yours. What you put into it is what you get out of it.
2. Effective Time-Management. Because you need to spend time daily on this class, make sure you schedule that time to make sure you manage your time well! Develop a daily to do and a long term plan for completing the major assignments.
3. Remember that your professors want to help – but as we are wearing masks or on zoom, we may not pick on the usual non-verbal cues students give us. In a typical classroom, we pick up on confused looks or blank stares. As we don’t have those cues, reach out! Email or talk to your group or a learning assistant. Engage with the online discussions!
4. Be aware of the software needs and make sure you know how to navigate those programs required for the course. Reach out to ITS or a friend or a YouTube how to video for the software/programs for the class.
5. When you are engaging in course material, find a good study space. Turn off your cell phone, be in a comfortable space, minimize any distractions, no TV or games, etc.

**Academic Honesty for your work as a scientist:**

**You are responsible**. Review each course syllabus for the professor’s expectations regarding course work and class attendance. Violations of the honor code results in failure of the assignment, failure of the course, to expulsion from the college. You should speak with your professors if you need clarification about any of these policies.

By placing your name on ANY assignment, you are stating that you completed that assignment with academic honesty. Cheating in this class may keep your grade where you want it, but it will not help your career long term – you cannot cheat the GRE or the MCAT. You have to. Learn this material in order to succeed in science. Additionally, academic dishonesty is reported to medical schools and graduate schools as per their request. Finally, anyone caught cheating relinquishes the privilege of asking for a letter of recommendation from the professor and will receive a 0 on the assignment. Acts of academic dishonesty will be turned over to Honor Court.

**Plagiarism:** do attribute all ideas taken from other sources; this shows respect for other scholars. Plagiarism can include portraying another’s work or ideas as your own, buying a paper online and turning it in as if it were your own work, or not citing or improperly citing references on a reference page or within the text of a paper. Passing off someone else’s work as your own represents intellectual fraud theft and violates the core values of our academic community. Plagiarism is passing off any work that is not yours as your own work \*\* EVEN WITH A CITATION\*\*\*. If you are using a source and citing the source, the information from that source STILL must be reworded in your own voice. Putting a citation behind a statement gives ownership to that source, but, if you do not reword that information, it is plagiarism. Do not cut and paste from the slide, your book, your neighbor, Wikipedia, or the internet. To further your science education, you need to be able re-word science in your own voice. If your answers are not your own, you will receive a 0 for the assignment. **All cases of academic dishonesty will be turned into Honor Court.**

**Intellectual Fraud:** do not falsify or create data and resources or alter a graded work without the prior consent of your professor. This includes making up a reference for a works cited page or making up statistics or facts for academic work.

**Cheating:** do not allow another party to do your work/exam or submit the same or similar work in more than one course without permission from the course instructors. Cheating also includes taking an exam for another person, looking on another person’s exam for answers, using exams from previous classes without permission, or bringing and using unauthorized notes or resources (i.e., electronic, written, or otherwise) during an exam. Cheating also includes when you help another student complete a take home exam, give answers to an exam, talk about an exam with a student who has not taken it, or collaborate with others on work that is supposed to be completed independently.

**Lecture Portion of Foundations of Neuroscience 2**

**Lectures**

Class time will be interactive, therefore listening to the lecture AND reading the assigned chapters prior to class arrival is required and will further your understanding of the material and will prove beneficial to your overall experience within the class. Come prepared to participate in class discussions on both the text material and any assigned readings. There will be in class assignments that will be graded.

**Weekly Assignment**

Your answers MUST be in your own words. You cannot quote any sources. Your answers cannot be cut and paste from any sources. If you cut and paste from a source or another student, you will receive a 0 on the assignment without any chance to make it up.

*Directed Reading Questions (DRQs)* These function as review questions for each chapter and can assist you in learning the information covered in the lecture. They highlight what the professor believes is the important information from the assigned reading and the recorded lecture.

*Article Analysis* One peer-reviewed article from primary literature will be assignedeach week and available on Canvas. The idea is to relate the article to the lecture and the chapter reading that is assigned.

*Essay Question* Answer the essay question below in 300-500 words. Your answer should incorporate what you learned from lecture, the reading, the case study, and the article analysis. It is recommended that an outside person proof-read your essay (the CWS is an excellent idea). Because this is open-book, open-note – grammar and spelling count.

**In Class Group Work – Case Studies**

Each Tuesday, you will work with your team to answer questions on the lecture topic assigned. The group will load one document per group to Canvas with the answers. Group members present will receive a grade. If a group member is absent, they can *email* their individual work to the professor to receive points.

**Group Experimental Design Questions**

At the end of article presentations, we will be breaking into the assigned presentation groups. Each group will turn in an experiment at the end of class that takes the article one step further, with a hypothesis, model system, control variables and experimental variables clearly defined. This assignment will be loaded to Canvas after the article presentation.

**Article Presentations**

The presentations should be no *shorter than 15 minutes and no longer than 20 minutes*. For these presentations, you cannot use any notes**.** The rubric is on Canvas.

The group preparing the article presentation will need to create a google slides/keynote/PPT presentation. Because each member of the group will be graded individually, each group member needs to save their own slides as a PDF and load that to Canvas prior to class. Each group member should present at least 1 figure.

The group preparing the article presentation will need to create a PPT or keynote with the following information:

*Introduction section* – give background information to help our class understand your topic. Why is this experiment important? What background information will help us understand what was done (reference the papers cited in the introduction)? State the hypothesis.

*Results* – the graphs, the tables, figures, etc - should include a figure legend and a figure title. Any time you present a piece of data, always explain what the audience is looking at (this is a western blot or images of a cell), what method was used to obtain the data (and explain it if we haven’t covered it in class), and what the data mean (your interpretation), how does that tie back to the hypothesis, and why the data are important to the paper and our understanding. Each person in the group should present at least one figure. If there are not enough figures in a paper, look up figures from either previous research and present those in the introduction or look up figures from studies after the paper and present those in the conclusion.

*Conclusions* – simple statements to describe the key, take-away points from the experiment and their importance in the field of study. How did the study contribute to the hypothesis?

\*\* Each Group Member MUST submit a PDF of THEIR slides (NOT THE WHOLE PRESENTATION) for grading 24 hours prior to the presentation – there is a spot on Canvas. Failure to do so will result in a loss of points

\*\*EACH group MUST submit a recording of the presentation prior to the class day it is due. There is a Google drive link on Canvas. On presentation day, the class will log into Zoom and we will watch the presentation together.

**ANY information on your slide is FAIR GAME for a question. If you put it on a slide, BE ABLE TO EXPLAIN IT!! We will take off points if you cannot explain something on your slide.**

Presentation Tips:

* Less text is better
* diagrams are always helpful
* keep the background information relevant
* keep all additional information relevant
* if it’s boring to you, it’s boring to your audience
* Do not make the presentation “cutesy”. This is a scientific presentation to your colleagues. Keep it professional.
* Make sure the fonts are the same on all slides, as well as all bullets.
* Formatting should be cohesive and look like 1 person made the presentation.
* The sharpest contrast between font and background is black and white. It makes your words more legible from the back of the room.
* In past years, group members have gained insight and bettered their understanding by meeting with the professor a week or two before the presentation.

**Feedback from the professors after the presentation**

The professors will **heavily** critique each presentation. This is done with all the respect of an individual presenting and for the benefit of the individual. This is a safe space to grow and only through this constructive criticism can any scientist grow. While the professor’s critique in this manner may come across as harsh, this is not the intention and should not be taken personally, as our critique does not reflect our opinion of you.

This may be the first time many are presenting scientific data, and we are fully aware and respect that. Our critiques are meant to aid an individual in becoming the best scientist they can. They are hard critiques that put a student on the spot and may point out a lack of preparation or a lack of understanding. That is not easy to swallow and we understand that.

Again, our goal is to further you as a scientist. We do not call names or poke fun or ridicule. We reflect on the presentation given to us and only that. We remove emotional responses from the equation and report on what was presented. In doing so, each student is able to understand how to advance their presentation skills. Each student can better themselves in an environment where the professors are serving as mentors in this process and are deeply concerned about each student’s success. If we did not care about the success, we would not aid students prior to the presentation or have this assignment at all. Feedback in the real world could mean not getting the school or job a student wants. This assignment is meant to improve a student with the goal of reaching their future goals. The feedback given in this assignment is done in a professional manner.

We ask questions about the project. If you met with us before the presentation and we instructed you on a proper way to present some item, if that is not followed through, your grade will be affected. Meeting with the professor before and following through with advice and feedback is the easiest way to prepare for the presentations.

**Grant Pre-proposal – Final Project**

**For the final project in this course, you will be writing a grant pre-proposal.**

This project is only 2 pages (no title page). Within those 2 pages, you must have your grant pre-proposal, citations and any figures. It is single-spaced, Arial Font, Size 11 with 1-inch margins. Use the citation style for Journal of Neuroscience. Your grant pre-proposal Final Draft must be proof-read by the CWS to receive full points for the pre-proposal. This must be turned in as a word document with at least 10 references

An outline of the project will be due part way through the semester. This outline must include some of the information that you will include in each of the following sections. The outline is worth 15 points.

The Grant Pre-proposal should include:

1. The Background– 3-4 paragraphs of background with citations. The challenge here is choosing your background data. There is bound to be a lot of background. The background information should explain why you are making the hypothesis you are making. Somewhere in this section, you should also explain why this project is significant to the field of study and innovative.

2. Hypothesis. The end of the last background paragraph should be your hypothesis. Clear, testable and supported by the background.

3. Specific aims. Transition from the hypothesis to the specific aims “This hypothesis leads me to make the following predictions. 3 specific aims - 3 testable predictions based on your hypothesis. The specific aim is one sentence (below it is bolded). Then describe what techniques (yes, plural) you will use to assess your prediction (shown for specific aim #1). It is generally best to use more than one technique because that will further support any claim you make. Discuss the # of test subjects used and the number of trials needed to obtain clean stats.

4. References. For a grant pre-proposal, after the 2 - 3 aims comes the references. You need at least 8 references for this LOI.

5. Figure of previous data leading to the hypothesis. After the references comes a figure 1. This is your preliminary data that lead you to the hypothesis. Generally, you can talk about it in the background as you near introducing your hypothesis. Use a figure from a primary literature article.

**Grant OUTLINE Grading Rubric**

1 point Overall Impact of the research on the field of study and significance of the research.

1 point Innovation of the project and approach.

2 points Background. Supports the predictions and hypothesis, is clear, flows well, and is correct.

2 points Hypothesis. Solid, testable hypothesis, clearly stated and supported by background information.

6 points Specific Aims (3 of them, 2 points each). Clearly stated, experimental summary and predictions.

1 points Figures. Supports the hypothesis and predictions, is labeled and has a legend

2 points References (have at least 5 solid references)

**Grant Pre-Proposal Grading Rubric**

10 points Overall Impact of the research on the field of study and significance of the research.

4 points Innovation of the project and approach.

30 points Background. Supports the predictions and hypothesis, is clear, flows well, and is correct.

11 points CWS proof-read (final draft + rubric at your appointment).

5 points Hypothesis. Solid, testable hypothesis, clearly stated and supported

30 points Specific Aims (3 of them, 10 points each). Clearly stated, experimental summary and predictions.

5 points Figures. Supports the hypothesis and predictions, is labeled and has a legend

5 points Instructions followed/format requirements followed

**Academic Policies**

**e-mail**

Instructors will make announcements regularly via e-mail. It is your responsibility to check your Agnes Scott email account daily. When responding to a professor over email, take care that your email is professional. Examples here: https://medium.com/@lportwoodstacer/how-to-email-your-professor-without-being-annoying-af-cf64ae0e4087#.jldd3bxes

**Technology**

Cell phones should be in the silence mode prior to entering the classroom or lab. Minimize potential distractions if you are using a laptop or tablet in class to take notes. You will be asked to leave class or lab if you are using your cell phone or laptop to conduct business other than that of the class.

**Plagiarism and Citations**

In your review article at the end of this class, you will need several outside sources. At no point can you copy work from another student. If you do so, you will receive a 0 on the assignment. If you use an outside source, you MUST reword the content from that source in your own words. If you do not reword the content from the outside source, you will receive a 0 on the assignment. If you use an outside source as a reference, make sure you use the first occurrence (first person to describe a mutation/animal model, etc – don’t simply cite a review that mentions the first mutation).

**ADA**

If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please the Office of Academic Advising to register for services. Students that receive accommodation checklists, please meet with the instructors to discuss the provisions of those accommodations as soon as possible.

**Title IX**

For the safety of the entire community, any incidence of or information about sexual misconduct must be reported immediately to Title IX Coordinator Karen Gilbert (kgilbert@agnesscott.edu, 404-471-6435).

**Inclusion**

This course adheres to the principles of diversity and inclusion integral to the Agnes Scott community.  We respect people from all backgrounds and recognize the differences among our students, including racial and ethnic identities, religious practices, and gender expressions.  We strive for our campus to be a safe space in which all students feel acknowledged and supported.  At the same time, we understand that course content, critical inquiry, and classroom dialogues give us opportunities to examine topics from a variety of perspectives.  Such discourse is a defining feature of a liberal arts education, and can compel debates that challenge beliefs and positions, sometimes causing discomfort, especially around issues related to personal identities.  While we uphold and preserve the tenets of academic freedom, we request and invite your thoughtful and constructive feedback on ways that we can, as a community of learners, respectfully assist and challenge one another in our individual and collective academic work.

**Content Warning**

This course will explore the human brain and behavior, which might raise issues of racism, sexism, classism, heterosexism, cissexism, ableism, and other kinds of privilege. If want more information, reach out to the instructors.  If you feel you will be unable to fully participate in the course requirements, set up a meeting with the course instructor to determine appropriate accommodations.

**Deadlines**

Attendance and participation will be assessed periodically to determine your engagement and commitment to this class. Students are expected to attend all class periods, except in cases of documented illness or emergency. If a missed class cannot be avoided because of illness or emergency, it is STRONGLY recommended that you contact the one of the instructors IN ADVANCE, or within 24 hours of the class period. Should an emergency or crisis arise, such that you miss class, you must provide legitimate documentation in order for the instructor to consider allowing you to make up missed work.

It is your responsibility to keep up with the class material. Thus, if you miss class, it is up to you to find out from a reliable source if you missed an assignment. It is also your responsibility to stay on top of presentation, quiz and exam deadlines. In-class assignments (such as the experimental design projects), presentations, and quizzes will NOT be available to make up later, unless you have a documented excuse, OR you have contacted one of the instructors ahead of time.

**Course Evaluations**

At the end of the semester you will receive an e-mail asking you to submit an evaluation of the course. Please give feedback! Your input is important to the college as a whole and to us as instructors. We take your comments very seriously.

**Academic Honesty**

The Agnes Scott College honor code embodies an ideal of character, conduct, and citizenship, and is an important part of the College’s mission and core identity. This applies especially to academic honesty and integrity. Passing off someone else’s work as your own represents intellectual fraud and theft, and violates the core values of our academic community. To be honorable, you should understand not only what counts as academic dishonesty, but also how to avoid engaging in these practices. You should:

• review each course syllabus for the professor’s expectations regarding course work and class attendance.

• attribute all ideas taken from other sources; this shows respect for other scholars. Plagiarism can include portraying another’s work or ideas as your own, buying a paper online and turning it in as if it were your own work, or not citing or improperly citing references on a reference page or within the text of a paper.

• not falsify or create data and resources or alter a graded work without the prior consent of your professor. This includes making up a reference for a works cited page or making up statistics or facts for academic work.

• not allow another party to do your work/exam, or submit the same or similar work in more than one course without permission from the course instructors. Cheating also includes taking an exam for another person, looking on another person’s exam for answers, using exams from previous classes without permission, or bringing and using unauthorized notes or resources (i.e., electronic, written, or otherwise) during an exam.

• not facilitate cheating, which can happen when you help another student complete a take home exam, give answers to an exam, talk about an exam with a student who has not taken it, or collaborate with others on work that is supposed to be completed independently.

• be truthful about the submission of work, which includes the time of submission and the place of submission (e.g., e-mail, online, in a mailbox, to an office, etc.).

You should understand that penalties result from dishonest conduct, ranging from failure of the assignment to expulsion from the college. You should speak with your professors if you need clarification about any of these policies.

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| **Date** | **Reading Assignment** | **To Complete BEFORE class** | **Class Topic** |
| 1/19 | Syllabus and Sherbin 2018 | Read Syllabus and Article | Syllabus and group meetings |
| 1/21 | Larimore Chap. 1 - 5 | Read Syllabus and Article | Group Agreements/ 1st presentation |
| 1/26 | Chapter 3, 5, and 6 | Neurobiology crash Course Lecture | Case Study |
| 1/28 | Blennow, et al 2012 | Article Analysis | Article Presentation - Dr. Larimore |
| 2/2 | Apx. - Human Anatomy | Neuroanatomy Lecture | Case Study |
| 2/4 | Golz et al 2019 | Article Analysis | Article Presentation - Group 1 |
| 2/5 |  | Test on Larimore chapters 1 - 5 | Test on Larimore chapters 1 - 5 |
| 2/9 | Final Project Outline | Final Project Outline | Final Project Outline |
| 2/11 | Final Project Outline | Final Project Outline | Final Project Outline |
| 2/16 | Chapter 11 and 12 | Vision Lecture | Case Study |
| 2/18 | Costa et. al., 2015 | Article Analysis | Article Presentation - Group 2 |
| 2/23 | Chapter 28 | Sleep Lecture | Case Study |
| 2/25 | Baumann et.al, 2009 | Article Analysis | Article Presentation - Group 3 |
| 3/2 | Final Project Draft | Final Project Draft | Final Project Draft |
| 3/4 | Final Project Draft | Final Project Draft | Final Project Draft |
| **3/9** | PEAK WEEK | PEAK WEEK | PEAK WEEK |
| **3/11** | PEAK WEEK | PEAK WEEK | PEAK WEEK |
| 3/16 | SPRING BREAK | SPRING BREAK | SPRING BREAK |
| 3/18 | SPRING BREAK | SPRING BREAK | SPRING BREAK |
| 3/23 | Chapter 8 and 30 | Learning and Memory Lecture | Case Study |
| 3/25 | Zhu et al 2019 | Article Analysis | Article Presentation - Group 4 |
| 3/30 | Chapter 16 and 17 | Motor Systems Lecture | Case Study |
| 4/1 | Lotze et al 2006 | Article Analysis | Article Presentation - Group 5 |
| 4/6 | Final Project | Final Project | Final Project |
| 4/8 | Final Project | Final Project | Final Project |
| 4/13 | Chapter 31 | Emotions Lecture | Case Study |
| 4/15 | Celeghin et. al, 2019 | Article Analysis | Article Presentation - Group 6 |
| 4/20 | Chapter 33 | Human Communication Lecture | Case Study |
| 4/22 | Watts et.al, 2006 | Article Analysis | Article Presentation - Group 7 |
| 4/27 | *SpARC* | *SpARC* | *SpARC* |
| 4/29 | Final Project | Final Project | Final Project |
| 5/4 | SpARC EC/ CV prep/ personal statement work | SpARC EC/ CV prep/ personal statement work | SpARC EC/ CV prep/ personal statement work |
| *5/5* | *Last Day of Classes* | *Last Day of Classes* | *Last Day of Classes* |

**BIO/PSY 351 LAB 2021**

**Lecture Instructors**

Dr. Kaela S. Singleton

ksingleton@agnesscott.edu

kssingl@emory.edu

Office Hours: by appointment

Dr. Jennifer Larimore

jlarimore@agnesscott.edu

Office Hours: by appointment

**Lab**

[Monday – Dr. Singleton](https://agnesscott.zoom.us/j/98344002514?pwd=RTBSbDZZMklvY1NBaVdia0pBcktKdz09)

Meeting ID: 983 4400 2514 | Passcode: 809502

Tuesday – Dr. Larimore

Meeting ID: 963 1383 6398 Passcode: 443701

**Required Text and Materials**

Neuroscience. Purves et al. 6th Edition. Oxford Press

Neuroscience Basics. Larimore. 1st Edition. Academic Press

**Mouse Behavior Analysis**

For this semester, you are going to work with a lab group to design a test to determine if a high fat diet (HFD) could impact anxiety (open field test) or depression (forced swim) in mice. We will be using C57/Black 6 (C57/B6) mice from Jackson Labs. Your entire lab section will be divided into 2 groups. Each group will receive 4 control mice and 4 mice for the variable testing. One group will test the control and the variable in these 2 behavioral assays with male mice and the other group will use female mice.

These are an inbred strain of mice without any genetic modifications. Look up more about them on the Jackson Lab website. Forced swim test is a behavioral test used to measure depressive like behavior in mice (see Forced Swim section of the lab manual for further explanation). Open field test is a behavioral test used to measure anxiety behavior in mice (see the open field test of the lab manual for further explanation). We have 2 articles that describe the protocols in their entirety. Read these articles BEFORE your group decides on your experimental design.

To do this, you are required to complete animal handling modules on CITI training website (Instructions here: https://www.agnesscott.edu/sponsoredprograms/research-integrity-CITI.html). This is to be completed during the lab time the first week of class. Due date is on the syllabus schedule. Turn in the course completion screen shot or PDF (not the course certificates).

Labs:

CITI Training 15 points

Poster Section Drafts 35 points (5 x 7 drafts)

Poster 25 points

SpARC presentation 40 points

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| --- | --- | --- | --- |
| **Week of:** | **Reading Assignment** | **To Complete BEFORE class** | **Class Topic** |
| **1/18** |  | **No lab** | No lab |
| **1/25** | Larimore Chap. 3-5 |  | **No Lab - READ LARIMORE 1 - 5** |
| **2/1** |  | CITI Training Due on Canvas | **No Lab - READ LARIMORE 1 - 5** |
| 2/5 |  |  | Test on Larimore chapters 1 - 5 |
| **2/8** | JoVE articles on  FST & Open Field |  | Background/Hypothesis |
| **2/15** |  | Review Poster Templates on Canvas and consider your experimental design/question. | Background/hypothesis/Experiment flow chart/Abstract  **Due on Canvas At the end of lab**: Create poster draft and add abstract |
| **2/22** |  |  | Using the JoVE articles, write the Materials and Methods and finalize an experimental flow chart for the poster.  **Due on Canvas At the end of lab**: Add materials & methods plus flow chart to poster draft |
| **3/1** | JOVE ARTICLE | **Analyze FST data** | Create FST figure and caption (no images of live animals), and add it to poster draft.  **Due on Canvas At the end of lab**: Update Poster with result section and FST figure |
| **3/8** | PEAK WEEK | PEAK WEEK | PEAK WEEK |
| 3/15 | SPRING BREAK | SPRING BREAK | SPRING BREAK |
| 3/22 |  |  | Write the introduction and begin analyzing the open field data.  **Due on Canvas At the end of lab**: Introduction and updated poster draft |
| **3/29** |  | **Analyze Open Field data** | Create OF figure and caption add it to poster draft  **Due on Canvas At the end of lab**: Update Poster with result section and OF figure |
| **4/5** |  | Begin to interpret/connect the open field and FST data and draw conclusions to present to your group. | Write the discussion/Conclusion section for the poster  **Due on Canvas At the end of lab**: Update Poster with Discussion/Conclusion section |
| **4/12** |  |  | **Work on the final draft of the poster.** |
| **4/19** |  |  | **Final Poster due uploaded to Canvas. Present Poster in Lab, then make any changes to prepare for SpARC** |
| **4/26** |  |  | No lab |

**CITI Training**

CITI training for research with rodents is required by federal law in order for you to complete this lab. This training is through Agnes Scott’s membership to the CITI program.

After you have completed the required courses, log in to your CITI profile. Click on Records. Save that page as a PDF and load it to Canvas. Be sure when you save the PDF, it shows your name at the top of the screen. It should look something like this:

**A screenshot of a social media post

Description automatically generated**

CITI Registration: <https://www.agnesscott.edu/sponsoredprograms/research-integrity.html>

Access the CITI training modules.

Instructions for registering for the CITI program:

On the CITI home page, in the top, right-hand corner, click "Register."

In the "Search for organization" box, type "Agnes."

Select "Agnes Scott College" from the list that appears below the box.

Click "Continue to Step 2."

Enter the required information using an Agnes Scott email address as the primary email address.

Enter a personal email address that can be used as a back-up address and will be available after leaving Agnes Scott College.

Click "Continue to Step 3."

Create a User Name, Password, and Security Question.

Be sure to remember what you create here, because you will need it again later, and this will be your Log In information even after you leave Agnes Scott College. Students will be able to affiliate with another institution and have their scores transfer when they go to graduate school.

Click "Continue to Step 4."

Answer the demographic questions.

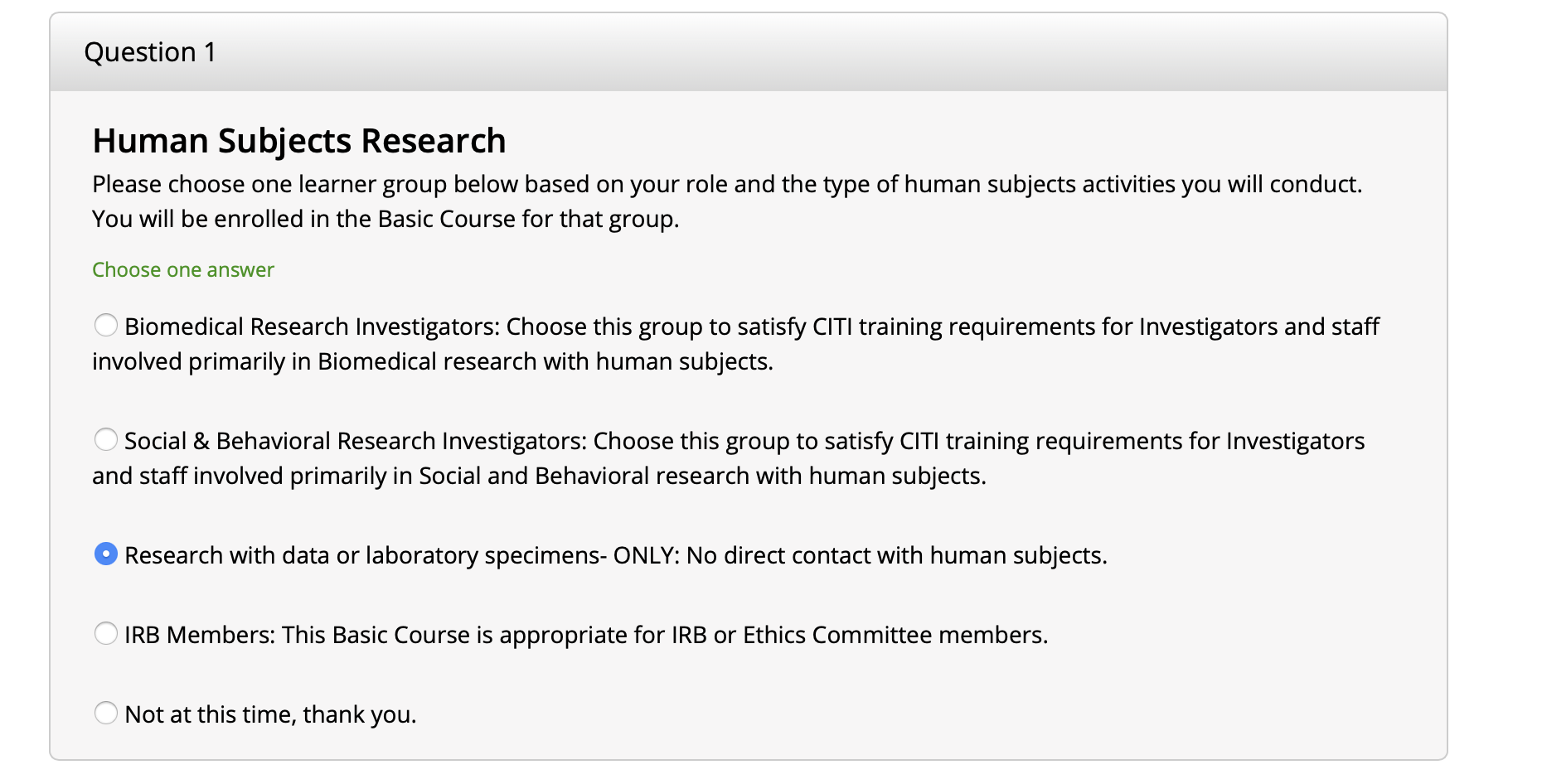
Click "Continue to Step 5."

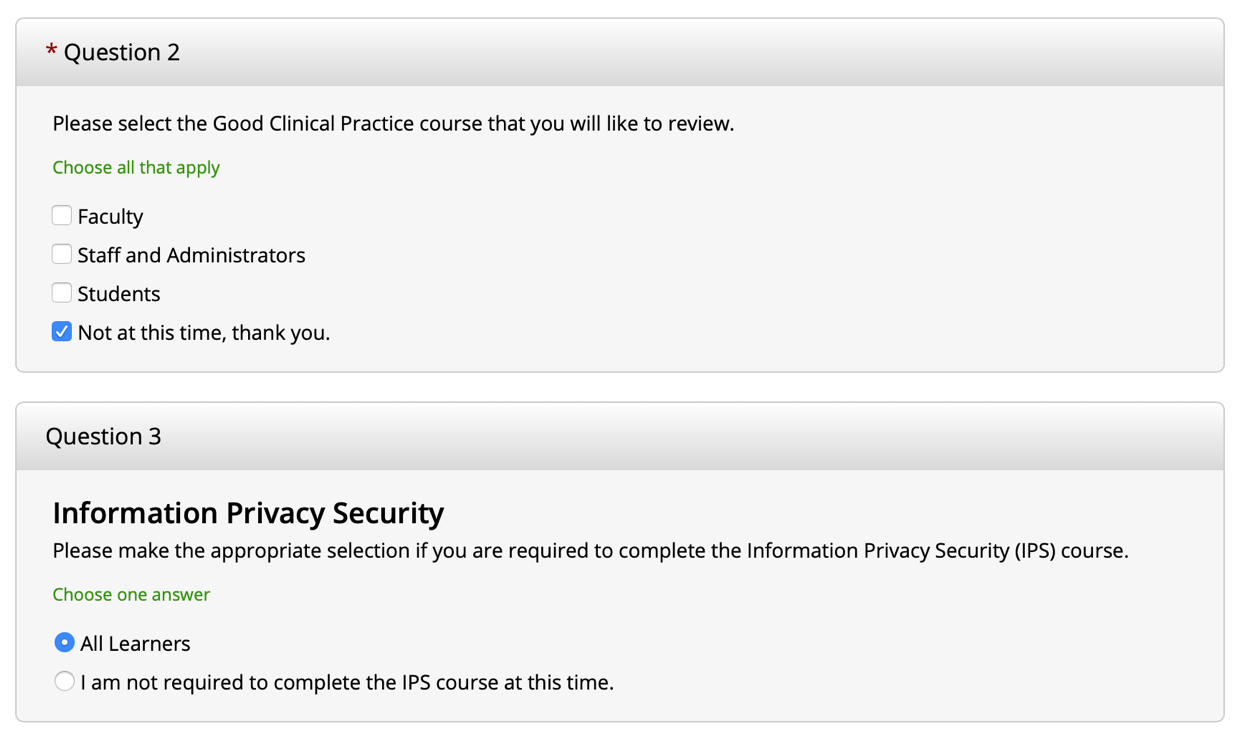
Answer the questions about Continuing Education Unit (CEU) credit. (answer "no.")

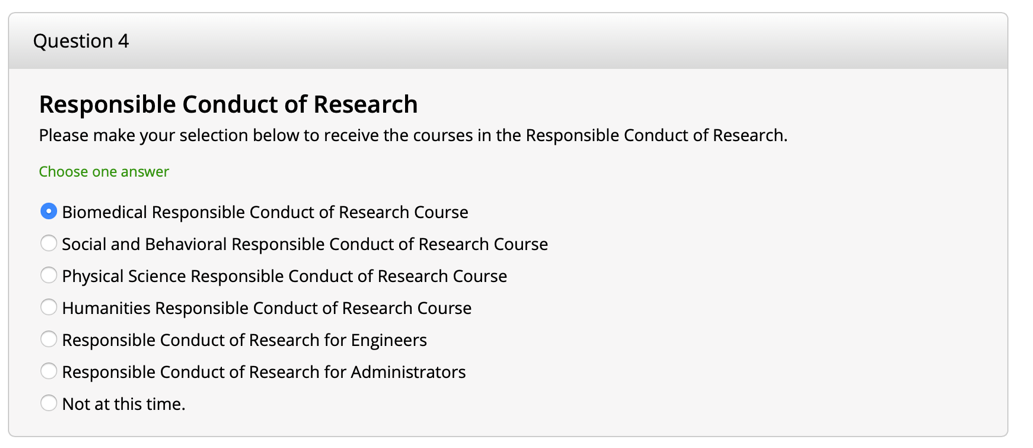
Click "Continue to Step 6."

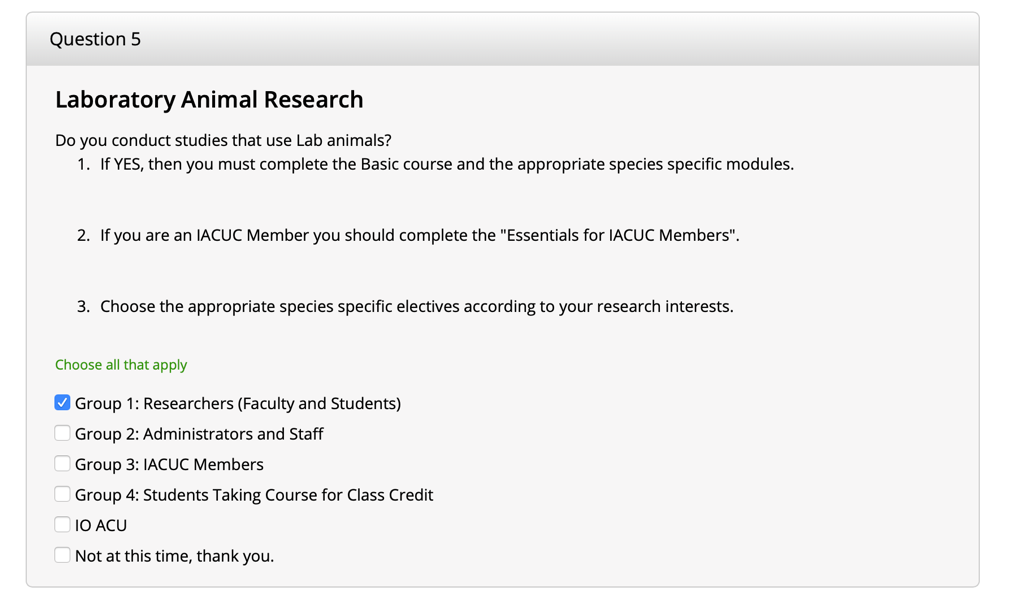
Enter the required fields and any optional fields you would like to complete. The most important field is the "Role in research" field.

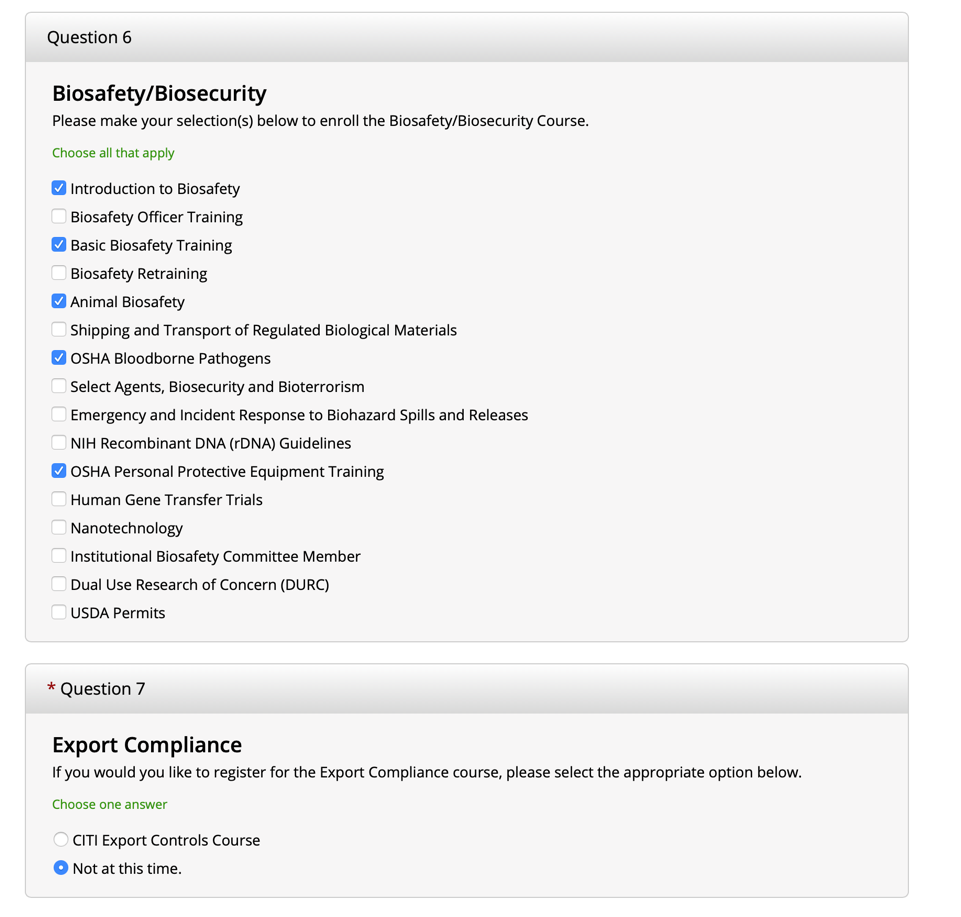
Agnes Scott students will select the "Student Researcher











After you finalize registration, you will be assigned several modules. The modules you need are:

All Learners: Stage 1 – Basic Course – 17 modules

Animal Biosafety: Stage 1 – Biosafety/Biosecurity

Basic Introduction to Biosafety

Biomedical Data or Specimens Only Research – Basic/Refresher

Biomedical Responsible Conduct of Research

Group 1: Researchers (Faculty and Students) – Stage 1 – Lab Animal Research

Initial Biosafety Training

OSHA Blood borne Pathogens

Personal Protective Equipment

Working with Mice in Research

**The SpARC Poster Presentations**

Your entire Lab group will be presenting your results at SpARC. Each group will present for approximately 10 minutes. If you rush through this, people will not understand what you are saying. This is your lab grade. Take your time. Each person in the lab group is expected to do equal parts of the talking.

*Why a poster presentations? Public speaking in a science field will be necessary, whether it’s to get a job or to discuss your findings at a meeting, or to recruit potential donors to a cause, public speaking in science is a skill that is absolutely necessary.*

Your lab group will need to save a PDF version of your poster and upload it to Moodle. All group member names should be in the filename.

For EACH section – make sure you have rehearsed your section at least 4-5 times. Your information should be understandable to someone who DID NOT conduct this research, but someone who is familiar with science. Consider practicing your information with a non-science major friend and see if they understand your presentation. Your information should be well organized, well explained. You need a good balance of text and diagrams for each section!

ANY information on your slide is FAIR GAME for a question. If you put it on a slide, BE ABLE TO EXPLAIN IT!!

Introduction section – give background information to help our class understand your topic. Why is this experiment important? What background information will help us understand what was done? State the hypothesis.

Methods section – highlight the techniques used to gather the data. Explain what we are measuring and what we used for those measurements. You don’t have to give step by step on how to do it, just what these are and why we are using them for our experiment. The underlying concept to cover is why were these techniques used and how will they address the question that is stated in the hypothesis?

Results – the graphs, the tables, etc - should include a figure legend and a figure title. Any time you present a piece of data, always explain what the audience is looking at, what you did to arrive at the data you are seeing (what method you used), and what the data mean (your interpretation) and why they are important.

Conclusion – simple statements to describe the key, take-away points from the experiment and their importance in the field of study. How did the study contribute to the hypothesis? Also, this should include future studies – what would propel this study if there was something more to be added to it.

Your group members will rate you on your effort after the presentations are complete. This rating can impact your grade.

***A screenshot of a cell phone

Description automatically generated***