

Psy 495S

SEX AND THE BRAIN

Winter 2022

Dr. G. Einstein

Email via Quercus Course Email

LECTURES **Tuesdays 1-2:30 PM EST (Live)**
Thursdays 1-2:30 PM EST (Live)

OFFICE HOURS:

FRIDAYS: 9-30-11:00 AM EST

and by appointment

TA: Liza Igoshina

Email via Quercus Course Email

COURSE DESCRIPTION

This course explores the scientific literature underlying the concept that female/male, gay/straight, and transgendered behaviors are based on brain differences. Original scientific papers will be read in close detail for design and interpretation of the experiments. The goal is to gain an understanding of the science underlying sex/gender differences, popular conceptions of sex, and the identification of the sexual brain. Topics include:

- Sexual differentiation
- Estrogens and androgens
- Connection of the brain with the rest of the body (HPG Axis)
- Relationship between brain and sexual behaviors
- Sex differences and cognition
- Sex and sexuality/gender identification

LEARNING OUTCOMES

By the end of this course, you will be able to:

- a. Read and understand original research papers in the field of Sex Differences in Brain and Behaviour;
- b. Articulate the purpose, methods, and interpretation of experiments as conveyed in original research papers;
- c. Employ an understanding of sexual differentiation to the development of sex differences in brain and behavior;
- d. Identify central nervous system (hypothalamic, cortical, and spinal cord) differences between males, females, gay, straight, transgendered and sexes in between;
- e. Be familiar with ways in which science is knowledge-in-the-making;

- f. Take a position on whether sex differences in brain and behavior exist and, if they do, are they binary, on a continuum, and do they make a difference.

COURSE FORMAT

Sadly, we are beginning the term online. The lectures will be SYNCRANOUS in order to simulate an in-person class. **When you come to our Zoom class, please have your video on so we can have a sense of community.**

This syllabus contains almost all the information you will need to take this course. I am going to assume that all our assignments need to be designed as if we were solely online but make a note by them about what will be the case if we are able to have class in person. For example, the videos, podcasts, and interviews may take place in class with a discussion about how they relate to the course material.

There is another document called, "SCHEDULE" to keep you up to date with readings, assignments, and lectures.

Each week there will be 2 lectures and readings with a video/podcast assigned (ON THE SCHEDULE). Do all the readings before the lectures so you can generate questions to the readings that the lectures will answer. **Please bring your questions to our online class.** That way we can generate a Discussion about important issues in the course.

VIDEOS/PODCASTS: Be sure to watch the videos/podcasts. They are from famous people in the field—some of whose work you will be reading. Even if they seem dull at the start, they all pack a punch and get very juicy as they progress. They will bring real world issues into the course and often provide another perspective on the week's topic. **We will discuss them in class.**

As long as the course is online, videos of the lecture (URLs) will be posted under ASSIGNMENTS twice a week after the lectures. **PLEASE ATTEND THE ZOOM 'CLASS' IF YOU CAN! It will be a lot more fun than watching the lecture in your room!**

NOTE: Once the course is in-person, there will be no recorded lectures and no recorded lectures will be posted.

Office Hours are on Zoom until further notice Fridays from 9:30-11:00 AM EST or by appointment. Office hours are for discussing the course, your career plans, and life in general. **FEEL FREE TO USE THESE AND HELP ME GET TO KNOW YOU.**

Zoom information for both LIVE LECTURE (Thursdays) and OFFICE HOURS

Link: <https://utoronto.zoom.us/j/85654347511>

Meeting ID: 856 5434 7511

Passcode: 974389

The Course Schedule tells you when assignments are due. Follow that rather than anything that Quercus generates.

TEXT: Einstein, G (ed) (2007) *Sex and the Brain*. MIT Press. Available through MIT CogNet

Access directly from the library catalogue and sign-in using your UTORID here:

<http://go.utlib.ca/cat/10558024>

Some Ancillary Readings (Library has many of the Ancillary Readings available in e-format.)

- Bailey, Michael (2003) *The Man Who Would be Queen: The Science of Gender Bending and Transsexualism*. Joseph Henry Press.
- Baron-Cohen, Simon (2003) *The Essential Difference: Men, Women, and the Extreme Male Brain*. Basic Books.
- Baron-Cohen, Simon (2005) *Prenatal Testosterone in Mind*. MIT Press.
- Brizendine, Louann (2006) *The Female Brain*. Broadway Books.
- Colapinto, John (2000) *As Nature Made Him: The Boy Who was Raised as a Girl*. Harper Collins.
- Fausto-Sterling, Anne (1992) *Myths of Gender*. Basic Books
- Fausto-Sterling, Anne (2000) *Sexing the Body*. Basic Books
- Fine, Cordelia (2010) *Delusions of Gender: How Our Minds, Society, and Neurosexism Create Difference*. WW Norton & Co
- Fine, Cordelia (2017) *Testosterone Rex: Myths of Sex, Science, and Society*
- Jordan-Young, Rebecca (2011) *Brian Storms: The Flaws in the Science of Sex Differences*. Harvard University Press
- Laqueur, Thomas (1990) *Making Sex: Body and Gender from the Greeks to Freud*. Harvard University Press.
- LeVay, Simon (1994) *The Sexual Brain*. Bradford Books.
- Pinker, Susan (2009) *The Sexual Paradox: Men, Women, and the Real Gender Gap*. Vintage Canada.
- Stein, Edward (1999) *The Mismeasure of Desire: The Science, Theory, and Ethics of Sexual Orientation*. Oxford University Press.

MARKING SCHEME & ASSIGNMENTS

RATIONALE BEHIND THE ASSIGNMENTS AND GRADE WEIGHTING:

The purpose of this course is to teach you the basic paradigms of sex and gender as well as how to intelligently discuss your view on them. The assignments are geared to give you a chance to practice that.

Different people have different learning strengths and weaknesses. Everyone should have the opportunity to shine at what they do best. The variation of the assignments and the percentage of the grade is designed to give everyone an opportunity to earn significant marks on what they do best whether that be sharing their thoughts and commenting on others', in-class quizzes on the material presented that day, or an in-depth writing assignment. The slightly higher weight given to the writing assignment is because everyone needs to know how to express their thoughts clearly in writing.

Assignments are due at the date and time stated. If you are unable to meet the assignment deadline for any reason (e.g., COVID, cold, flu and other illness or injury, family situation) and you require consideration for missed academic work: 1. **Alert Prof E**; 2. **record your absence through the ACORN online absence declaration**. These are difficult times and will try to make every accommodation possible but your TA and I really need you tell us when your work is going to be late so we can plan our time to be available to grade your work!

If you fail to do both of these and your work is late, your grade will be deducted by 5% for each week day late.

ASSIGNMENT	PERCENTAGE	DUE DATE
1. 5 Discussions & Responses (2.5 discussion/2.5 Response = 5 points for each pair)	25%	Dis. 1: Jan 18/Resp. Jan 20 Dis. 2: Feb 1/Resp. Feb 3 Dis. 3: Feb 17/Resp. Mar 01 Dis. 4: Mar 15/Resp. Mar 17 Dis. 5: Apr 05, Apr 07
2. 5 In-lecture multiple choice/answer quizzes (5 points each)	25%	Jan 20, Feb 3, Feb 8, Feb 15, Mar 1

Online when we cannot meet in person; in class when we meet in person		
3. Grant Proposal	45% TOTAL	
a. Proposal for an experiment delving into sex differences or gender: What it is & why it is important (500 words max)	10%	Feb 10 post by 10:30 AM When we meet in person, turn it in in class
b. Hypotheses & possible outcomes (250 words max) with Annotated bibliography of 10 primary references APA style (review papers do not count in the 10)	15%	Mar 3 post by 10:30 AM When we meet in person, turn it in in class
c. Full Write up of grant proposal with full number of appropriate references in APA style (2,500-5000 words max)	20%	Apr 8 post by midnight on April 8. When we meet in person, turn it in in class
4. Cocktail Napkin Assignment	5%	Mar 31 post on Discussion Board for whole class to read about your grant When we meet in person, to be described in class
5. EXTRA CREDIT a. Self-Introduction & Response to 1 other's Intro b. mid-term course survey	+1 pt. + 5 pt (answer short survey on course)	Jan 13 post your Introduction Jan 20 post responses to 1 other people's Introductions Mar 3 answer midterm course survey

I. DISCUSSIONS & RESPONSES

There will be 5 Discussion and Responses. The purpose of these is to get you to synthesize what you are reading with some of the current controversies as elucidated in the videos/podcasts for each week. It is also to get you to engage with your classmates.

Rules of Discussion Interactions

The Discussion is a space in which we aim to engage with each other in respectful and thoughtful conversations about the relationship between brain, behaviour, and sex differences. Because a significant part of the course will be from your input to the Discussion, a major assignment is keeping up with readings, participating in dialogue in an informed way, and providing thoughtful feedback to other students.

Your responses to other students should not be negative. **Points will be deducted from your grade for harsh or pejorative comments.** As an engaged learner, your job is to enter into conversations about what was read/heard, and your responses to the ideas presented. You are asked to structure your responses with the following in mind:

Guide for the Discussion:

- I. Identify the ideas that engage you

As you read texts or listen to the lectures, presentations, and discussions which ideas caught your attention or captured your imagination? Which ones struck a chord for you?

2. Describe the intentions of the writers or speakers

What values and principles regarding Psychology, people, their health and well-being, and the world more generally do these ideas evoke? What do the ideas suggest to you about the writers' or speakers' purposes and commitments?

3. Situate your responses

What is it about your own life experiences or interests that account for why these ideas caught your attention? Do you have a sense of which aspects of you own experiences resonated with these ideas?

4. Identify gaps and spaces

What are some gaps and spaces that you notice in each reading? What areas do you think need further exploration in this topic area? What remains confusing, unclear, or underdeveloped? What suggestions in the form of other authors and ideas can you offer to help the analysis along?

5. Recognise the growth of your ideas throughout the course

How have you been moved by engaging with these ideas? Where have these ideas taken you? How have your ideas shifted as a result of listening to and participating in the development of these ideas?

Guide for Responses:

- Annotate at least 3 points about the reading in your colleague's document.
- Each annotation should be approximately 3-4 sentences.
- Your annotation should be thoughtful and in response to your colleague's comment.
- The goal of each annotation is to open a conversation about the point raised: ----- What do you think about what they said?

--What was your response to that same point in the paper?

-- Does the point raise issues about sex or gender being binary or on a continuum?

--How does this comment relate to other papers that you've read in the course so far?

DISCUSSION/RESPONSE GRADING SCHEME

Criteria	Excellent (100%)	Good (75%)	Adequate (50%)	Poor or missing (0%)
Demonstrates knowledge and understanding of content	Post(s) and response(s) show evidence of knowledge and understanding of course content and appropriate to audience	Post(s) and response(s) show evidence of knowledge and understanding of course content	Post(s) and response(s) show little evidence of knowledge and understanding of course content	Post(s) and response(s) show almost none or no evidence of knowledge and understanding of course content
Generates learning within the community	Post(s) elicit responses and reflections from other learners and responses build	Post(s) attempt to elicit responses and reflections from other learners and responses build upon the	Post(s) do not attempt to elicit responses and reflections from other learners or respo	Post(s) discourage responses and reflections from other learners and responses do not build upon the ideas of other

	upon and integrate multiple views from other learners to take the discussion deeper	ideas of other learners to take the discussion deeper	nses do not build upon the ideas of other learners to take the discussion deeper	learners to take the discussion deeper
Writing quality and mechanics	Can understand the post with minimal effort. There may be some minor grammatical or punctuation issues but does not impact meaning.	There is some difficulty understanding parts of the post, but the main message comes across. Some grammatical and word choice issues present OR small amounts of slang used	Considerable writing and grammatical issues that completely obscure the meaning of the post OR lots of slang OR inappropriate language for academic setting	Content is not comprehensible and/or is entirely slang AND/OR is completely inappropriate language/behaviour for an academic setting

2. IN-LECTURE QUIZZES

The purpose of the in-class quizzes is to make sure that you take away from the course some basic information on hormones and behaviour/sex and the brain. They will be multiple choice/multiple answer and based on the topics covered that week or day. They will be timed but within that time, you can consult the lecture or readings.

When we meet in person, these will be done in class

3. GRANT PROPOSAL

Important real-world skills are to be able to: (i) identify something that interests you particularly, (ii) learn where the gaps are in knowledge about it, (iii) design a way to fill one of those gaps.

In order to help develop these skills, the major assignment is to write a **GRANT PROPOSAL** to explore a sex difference in the brain/behaviour or how gender might play a role in a sex difference.

i.e., **Design an experiment to test whether there are sex or gender differences.**

Take what you are learning about the issues around studying sex and gender differences and the paradigms for studying them and to use that knowledge to create a proposed experiment to test a sex or gender difference of your choosing.

Identify a brain phenomenon – anatomical, functional, behavioural, or clinical — Design an experiment to test whether or not there are sex differences or gender influences. It can be in any of these populations:

- a. Animal model
- b. Healthy humans
- c. Clinical population

In order to break down the process, give you feedback along the way, and help you think through your grant proposal this assignment is broken down into 3 parts:

- a. **Proposal** for an experiment delving into sex differences or gender: What it is & why it is important (500 words max)
 - i. describe what is known or not known about the sex difference or gender influence you're interested in testing—what is it and where's the gap?
 - ii. say why you think it's important to know more and fill the gap
 - iii. briefly describe the type of experiment you might do

NO CHANGES in the approved experiment from your proposal are possible.
- b. **Hypotheses, experimental methods, & possible outcomes** (500 words max) **with Annotated bibliography of 10 primary references** APA style (review papers do not count in the 10)
 - i. say what you think you will find (you might hypothesize **not finding a sex difference** that's okay)
 - ii. How will you test these hypotheses?
 - iii. What are some of the possible outcomes even if your hypotheses are not proven?

(Carl Popper said that in the scientific method, the purpose of an experiment is to disprove your hypotheses!)

Annotated Bibliography: 10 primary references (review papers do not count in the 10)

For each annotation:

- i. Say why you chose this paper (i.e., why is it an important building block for your project?)
- ii. Summarize of question, findings, and conclusions.
- iii. Brief mention of Method (e.g., “using MRI”; “In a mouse model”; “transgenic mice were used to...”). Don't go into details.
- iv. Mention of whether the exp. included males, females, or both in the study and if they analyzed their data by sex.

- v. If there is a glaring weakness, feel free to mention it but it's weakness – or what it doesn't do – may be what motivated your experiment and so this could be discussed in why you chose the paper.
- vi. NO MORE THAN 200 WORDS FOR EACH ANNOTATION. (Edit your prose; Shorter is better!) I am not expecting more than 4 really pithy sentences for each paper.

Formatting: 2X spaced, APA style for text and references

- c. **Full Write Up** of proposed experiment with full number of appropriate references in APA style (2,500-5000 words max)—Put together what you have done with responses to comments received and additional references. Expand your explanations and provide a full accounting of the question, need for the answer, how you will test it, what you expect to find.

A classic grant proposal has the following sections:

1. Background and Significance
2. Specific Aims
3. Experimental Methods
4. Expected results, what they mean and what it might mean if you do not get the results you expect

Breaking that down:

1. **Background and Significance includes:**

1. Literature review relevant to your experiment saying what is known and identifying where the gap in knowledge is
2. State why the question/problem is important beyond the details of the literature (What's the BIG question?)
3. How you are going to approach this gap (briefly – you expand later in the proposal)

You have a very good start on this from your Proposal assignment and your annotated bibliography. Note: The final reference list does not have to be annotated but should include a complete list of references which will likely be more than what you included in your annotated bibliography.

2. **Specific Aims**

1. Your big question
2. Hypotheses (what you expect to find from your experiment)
3. The smaller questions that will lead up to answering the big question
 1. This can include sub-experiments
 2. It can include a description of the one experiment

You have a very good start on this from your Proposal & Hypotheses assignments. Build on that and expand.

3. **Experimental Methods**

1. What are the methods you will use to do your experiment (s)
2. This section can (but doesn't have to) include other methods or approaches that you might also use (especially if the ones you do use, don't work)

You have a very good start on this from your Proposal & Hypotheses assignments. Build on that and expand.

4. **Expected results and what else you might find: THIS IS WHERE YOU REALLY SHOW THE FULLNESS OF YOUR THOUGHTS ABOUT THE STUDY**

1. The expected results
2. What else you might find
3. What your findings might be in the context of the BIG problem.

You have a start on this from your Hypotheses assignment. This really needs to be fleshed out and expanded for the final assignment.

You can use the prose you have already generated for the first two aspects of this assignment.

WRITE UP each of these sections using **APA format**, double-spacing, 12-point font, 1" margins.

SUBMIT an **Academic Integrity Checklist** signed by you (see below) with parts a, b, and c as part of what you turn in. **No part of this assignment will be graded until accompanied by the academic integrity statement with boxes checked and signed. If no signed academic integrity statement, it will be considered late until one is submitted.**

4. COCKTAIL NAPKIN ASSIGNMENT

Ever find yourself at restaurant so excited about some new science you read earlier that day, that you just HAD to explain it to your friends across the table? This is the idea behind the cocktail napkin assignment.

ONLY IT'S GOING TO BE ABOUT YOUR SCIENCE!

The idea behind this assignment is to get you to put your grant proposal's **key question** in sex or gender, the **approach** you chose, your **hypotheses**, **potential findings** as succinctly as possible.

1. Grab a sheet of blank paper (notebook paper is, of course, fine...but blank paper is just less busy, if available).
2. **Split the sheet into four equal parts** (either folding or withdrawn lines).
3. In the leftmost rectangle, **write the key question** of your Grant Proposal and why it is important.
4. In the rectangle below, **write 1-2 key methods** you proposed to use to answer it.
5. In the rightmost rectangle, **write your hypotheses**,
6. In the rectangle below, **write the key findings** and take-home messages.
7. **Take a picture of it** and post the picture on our Discussion board so the class can read it
8. **In our last class, I will synthesize all the posted grant proposals for your learning pleasure.**

EXTRA CREDIT ASSIGNMENTS

- a. Self-Introduction & Response to at least one other person — We want to know who we are learning with! Please take the time to write an Introduction of yourself so the CLASS, Liza, and I know who you are! Please post it on the Discussion board.
- b. Mid-term course survey—It will help me deliver a better course to you if I know how things are going for you midterm. I'll put an optional course survey in Assignments and I hope you will take the time to fill it out.

PSY495 POLICIES

Psy495 as a Learning Community

Psy495 is a learning community about a sensitive topic. This is especially important to remember when all of our interactions are online. It is critical that we be respectful and positive when communicating. This does not mean that we cannot have intellectual disagreements backed by the knowledge of the field. However, online disrespect will not be tolerated. I reserve the right to deduct points from Discussions if they evidence disrespect and in extreme cases, stop accepting Discussion submissions for prolonged disrespectful behaviour.

When We Meet In-Person

I really hope we get to have this class in-person! If and when we do, it is critical that we ensure everyone is safe and healthy. To ensure this, please be sure you be familiar with the University of Toronto COVID safety measures.

- Always fill in UCHECK before coming to campus; your UCHECK form can be requested from you at any time on campus: <https://www.provost.utoronto.ca/planning-policy/utogether2020-a-roadmap-for-the-university-of-toronto/quercus-uccheck/>
- Follow the face masking protocols; I will require that everyone wear a mask in class: <https://www.provost.utoronto.ca/planning-policy/joint-provostial-and-human-resources-guideline-on-facemasks-at-the-university-of-toronto/>
- Learn the University's general COVID-19 Prevention Methods: https://ehs.utoronto.ca/wp-content/uploads/2020/03/Covid-19-Poster_8.5x11_FA.pdf

Accessibility

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

Students with diverse learning styles and needs are welcome in this course. Please feel free to approach us or Accessibility Services so we can assist you in achieving academic success in this course.

ACCESSIBILITY SERVICES:

Phone: (416) 978 8060

Email: accessibility.services@utoronto.ca ; Website: www.accessibility.utoronto.ca

Video recording and sharing (Download permissible; re-use prohibited)

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session that is conducted remotely.

Course videos and materials belong to your instructor, the University, and/or other source depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor.

For questions about recording and use of videos in which you appear please contact your instructor.

Email

If you have questions that are about course mechanics i.e., when an assignment due, details of the assignment, etc. **CHECK THE SYLLABUS.**

Only if it is not answered in the syllabus, **contact Prof E or Liza via Quercus email.**

If you have a question that pertains only to you (personal, course or academic), send it to me via Quercus email. I will endeavor to answer it within 2 working days.

Note: I will **not be** checking Quercus email from **5 PM EST on Friday – midnight Saturday.**

Academic Integrity

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves.

Academic Integrity Statement (AIS, ATTACHED TO THIS SYLLABUS): Must be turned in with the assignment. Boxes need to be read and checked before signing. We cannot grade without this statement (syllabus) and therefore, every day this is late, there will be a late penalty (late penalty in original syllabus). **There will be no reminders for you to send in your AIS.**

Familiarize yourself with the University of Toronto's *Code of Behaviour on Academic Matters* (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). It is the rule book for academic behaviour at the U of T, and you are expected to know the rules. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.
- Lending your work to a classmate who submits it as his/her own without your permission.
- Obtaining or providing unauthorized assistance on any assignment including:
 - working in groups on assignments that are supposed to be individual work;
 - having someone rewrite or add material to your work while "editing".

On tests and exams:

- Using or possessing any unauthorized aid, including a cell phone and Internet searches.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation:

- Falsifying or altering any documentation required by the University.
- Falsifying institutional documents or grades.

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the *Code*. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me. If you have questions about appropriate research and citation methods, seek out additional information from me, or from other available campus resources like the [U of T Writing Website](#). If you are experiencing personal challenges that are having an impact on your academic work, please speak to me or seek the advice of your college registrar.

To remind you of these expectations, and help you avoid accidental offences, **you must include a signed Academic Integrity Checklist with every assignment**. If you do not include the statement, your work will not be graded.

Academic Integrity Checklist (Attach with each part of Grant Proposal)
Psy495HS **Professor Gillian Einstein**

I, _____, affirm that this assignment represents entirely my own efforts.

I confirm that:

- I have acknowledged the use of another's ideas with accurate citations.
- If I used the words of another (e.g., author, instructor, information source), I have acknowledged this with quotation marks (or appropriate indentation) and proper citation.
- When paraphrasing the work of others, I put the idea into my own words and did not just change a few words or rearrange the sentence structure
- I have checked my work against my notes to be sure I have correctly referenced all direct quotes or borrowed ideas.
- My bibliography includes only the sources used to complete this assignment.
- This is the first time I have submitted this assignment (in whole or in part) for credit.
- Any proofreading by another was limited to indicating areas of concern which I then corrected myself.
- This is the final version of my assignment and not a draft.
- I have kept my work to myself and did not share answers/content with others, unless otherwise directed by my instructor.
- I understand the consequences of violating the University's academic integrity policies as outlined in the *Code of Behaviour on Academic Matters*.

By signing this form I agree that the statements above are true.

If I do not agree with the statements above, I will not submit my assignment and will consult the course instructor immediately.

Student name: _____ Signature: _____

Date: _____

How to Read this Schedule:

OH: Office Hours

TOPIC: Lecture Topic

HW: Homework! What I hope you will read/listen/watch/do later that day or sometime *before* the next class.

DUE: What is due that very day before class (10 AM, EST).

TBD: To be determined

JAN2021

SUN	MON	TUE	WED	THU	FRI	SAT
09	10	<p style="text-align: center;">11</p> <p style="text-align: center;">TOPIC: INTRODUCTION</p> <p>HW: WRITE your Introduction/Read Prof E's & Liza's and Your Classmate's Introductions</p> <p>WATCH Simon Levay Lecture https://www.youtube.com/watch?v=OSAu9zl_dgE&t=273s</p>	12	<p style="text-align: center;">13</p> <p style="text-align: center;">TOPIC: SEX, GENDER, & BRAIN HEALTH</p> <p style="text-align: center;">DUE: Your Introduction</p> <p>HW: READ Frank A. Beach (1941) Female mating behavior shown by male rats after administration of testosterone propionate. <i>Endocrinology</i> 29:409–412.</p> <p>WRITE: Discussion and response 1—3 things you found interesting and/or difficult in Beach</p>	14 OH	15
16	17	<p style="text-align: center;">18</p> <p style="text-align: center;">TOPIC: HOW TO READ THE PAPERS IN THIS COURSE</p> <p>DUE: Post Discussion 1— 3 things you found interesting and/or difficult in Beach</p> <p>HW: READ I. G. Raisman (1997) An urge to explain the incomprehensible: Geoffrey Harris and the discovery of the neural control of the pituitary gland. <i>Annual Review of Neuroscience</i> 20: 533–566.</p> <p>2. G. W. Harris (1937) The induction of ovulation in the rabbit, by electrical stimulation of the hypothalmohypophysial mechanism. <i>Proceedings of the Royal Society of London B</i> 612:374–394.</p> <p>WATCH Jordan-Young video: https://www.youtube.com/watch?v=M169B4G4PJA</p>	19	<p style="text-align: center;">20</p> <p style="text-align: center;">TOPIC: THE HYPOTHALAMIC-PITUITARY-GONADAL AXIS</p> <p style="text-align: center;">In lecture Quiz 1: HPG-Axis</p> <p>DUE: Post response to 1 other person's introductions Post Response Discussion 1</p> <p>HW: READ I. C. Dominique Toran-Allerand (1976) Sex steroids and the development of the newborn mouse hypothalamus and preoptic area in vitro: Implications for sexual differentiation. <i>Brain Research</i> 106:407–412.</p> <p>2. Catherine S. Woolley and Bruce S. McEwen (1992) Estradiol mediates fluctuation in hippocampal synapse density during the estrous cycle in the adult rat. <i>Journal of Neuroscience</i> 12:2549– 2554.</p>	21 OH	22
23	24	<p style="text-align: center;">25</p> <p style="text-align: center;">TOPIC: THAT'S ONE POWERFUL HORMONE: 17-β-estradiol</p> <p>HW: READ Catherine S. Woolley and Bruce S. McEwen (1992) Estradiol mediates fluctuation in hippocampal synapse density during the estrous cycle in the adult rat. <i>Journal of Neuroscience</i> 12:2549– 2554.</p> <p>WATCH Anne Fausto-Sterling <i>Philos?py Talk</i> (all 4 parts) https://www.youtube.com/watch?v=w_sNCul34LI</p>	26	<p style="text-align: center;">27</p> <p style="text-align: center;">TOPIC: THE HPG-AXIS' EFFECT ON THE BRAIN</p> <p>HW: READ I. Sinclair et al. (1990) A gene from the human sex determining region encodes a protein with homology to a conserved DNA-binding motif. <i>Nature</i> 346:240–244.</p> <p>2. Richardson, S. (2008) When Gender Criticism Becomes Standard Scientific Practice: The Case of Sex Determination Genetics (uploaded pdf)</p> <p>WRITE Discussion and Response 2—the discovery of SRY and the notion that male sexual differentiation is an active switch while female is, passive</p>	28 OH	29

FEB2021

SUN	MON	TUE	WED	THU	FRI	SAT
30	31	<p>01</p> <p>TOPIC: SEXUAL DIFFERENTIATION—GENES I</p> <p>DUE: Discussion 2—the discovery of SRY and the notion that male sexual differentiation is an active switch while female is, passive</p> <p>HW: READ 1. Anne Fausto-Sterling (1993) The five sexes: Why male and female are not enough. The Sciences 33: 20–24. 2. Neil J. MacLusky and Frederick Naftolin (1981) Sexual differentiation of the central nervous system. Science 211: 1294–1302.</p> <p>LISTEN Molly Webster https://www.ted.com/talks/molly_webster_the_weird_history_of_the_sex_chromosomes?language=en</p>	02	<p>03</p> <p>TOPIC: SEXUAL DIFFERENTIATION II—HORMONES & GENES In lecture Quiz 2: Sexual differentiation</p> <p>DUE: Response 2</p> <p>HW: READ 1. Madhabananda Sar and Walter E. Stumpf (1977) Distribution of androgen target cells in rat forebrain and pituitary after [3H]dihydrotestosterone administration. Journal of Steroid Biochemistry 8:1131–1135. 2. Shughrue et al., (1990) Developmental changes in estrogen receptors in mouse cerebral cortex between birth and post-weaning: Studied by autoradiography with 11b-methoxy-16a [125I]iodoestradiol. Endocrinology 126:1112–1124. 409</p>	04 OH	05
06	07	<p>08</p> <p>TOPIC: ESTROGENS & THE BRAIN In lecture Quiz 3: Estrogens & steroid hormones</p> <p>HW: READ 1. Charles H. Phoenix, Robert W. Goy, Arnold A. and William C. Young (1959) Organizing action of prenatally administered testosterone propionate on the tissues mediating mating behavior in the female guinea pig. Endocrinology 65: 369–382.</p> <p>WRITE Draft (500 words) on your grant proposal topic and why it is important to study</p> <p>WATCH Karissa Sanbonmatsu geneticist https://www.ted.com/talks/karissa_sanbonmatsu_the_biology_of_gender_from_dna_to_the_brain?language=en</p>	09	<p>10</p> <p>TOPIC: ORGANIZATION & ACTIVATION</p> <p>DUE: Draft (500 words) on your grant proposal topic and why it is important to study</p> <p>HW: READ Michael J. Meany and Jane Stewart (1981) Neonatal androgens influence the social play of prepubescent rats. Hormones and Behavior 15: 197–213.</p> <p>START DRAFTING your hypotheses & annotated bibliography (10 primary references on your grant proposal)</p>	11 OH	12
13	14	<p>15</p> <p>TOPIC: ORGANIZATION & ACTIVATION II In lecture Quiz 4: Organization & activation</p> <p>HW: READ G. Raisman and P. M. Field (1973) Sexual dimorphism in the neuropil of the preoptic area of the rat and its dependence on neonatal androgen. Brain Research 54:1–29. WATCH: https://www.youtube.com/watch?v=rYpDU040yzc</p> <p>WRITE: Discussion and Response 3: Could female and male have similar, organized brain circuits</p> <p>WATCH Kajal Kentarci Estrogens & Dementia https://www.youtube.com/watch?v=TMgWUMUaX22g</p>	16	<p>17</p> <p>TOPIC: CIRCUITS FOR THE MENSTRUAL CYCLE</p> <p>DUE: Discussion 3—Could female and male have similar, organized brain circuits?</p> <p>HW: 1. Fernando Nottebohm and Arthur P. Arnold (1976) Sexual dimorphism in vocal control areas of the songbird brain. Science 194:211–213. 247 2. Eliot A. Brenowitz (1991) Altered perception of species-specific song by female birds after lesions of a forebrain nucleus. Science 251:303–305. (OPTIONAL)</p>	18 OH	19
20	21	<p>23</p> <p>READING WEEK</p>	24	<p>25</p>	26	27

MAR2021

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	01 TOPIC: NON-HUMAN SEX DIFFERENCES: BIRD SONG In lecture Quiz 5—Sex Differences in bird brain DUE: Response 3 HW: READ S. Marc Breedlove and Arthur P. Arnold (1983) Hormonal control of a developing neuromuscular system. I. Complete demasculinization of the male rat spinal nucleus of the bulbocavernosus using the anti-androgen flutamide. Journal of Neuroscience 3:417–423. WATCH: Baron-Cohen/Rippon Debate https://www.youtube.com/watch?v=kxfaE-gWZ9I WRITE: Keep drafting your annotated bibliography (10 primary references on your grant proposal)	02	03 TOPIC: NON-HUMAN SEX DIFFERENCES: RAT SPINAL CORD DUE: Hypotheses, Exp Methods, & Outcomes (500 words max) & Annotated bibliography (10 primary references of grant proposal) Mid-term Course survey (extra credit) HW Read Gorski et al., (1978) Evidence for a morphological sex difference within the medial preoptic area of the rat brain. Brain Research 148:333–346.	04 OH	05
06	07	08 TOPIC: NON-HUMAN SEX DIFFERENCES—HYPOTHALMUS HW: READ Nancy G. Forger and S. Marc Breedlove (1986) Sexual dimorphism in human and canine spinal cord: Role of early androgen. Proceedings of the National Academy of Sciences USA 83: 7527– 7531. WATCH Dick Swaab interview https://www.youtube.com/watch?v=mOK8fw4tsO8	09	10 TOPIC: HUMAN SEX DIFFERENCE HOMOLOGIES—SPINAL CORD HW: READ 1. Swaab and E. Fliers (1985) A sexually dimorphic nucleus in the human brain. Science 228: 112–115. 2. Laura S. Allen, Melissa Hines, James E. Shryne, and Roger A. Gorski (1989) Two sexually dimorphic cell groups in the human brain. Journal of Neuroscience 9: 497–506. WRITE Discussion & Response 4—Do homologous sex differences in humans to non-human animals convince you that human XX and XY have brain regions/circuits that are different?	11 OH	12
13	14	15 TOPIC: HUMAN SEX DIFFERENCE HOMOLOGIES—HYPOTHALAMUS DUE: Discussion 4—Do homologous sex differences in humans to non-human animals convince you that human XX and XY have brain regions/circuits that are different? HW: READ Hassan et al., (2014) Ovarian hormones and chronic pain: A comprehensive review. Pain 155(12)120: 2448-2460. (to be uploaded) WATCH Jeff Mogil on Sex Differences in Pain https://www.youtube.com/watch?v=t2R88uMip6w	16	17 TOPIC: SEX DIFFERENCES IN PAIN & MOOD DUE: Response 4 HW: READ 1. Deeb et al. (2005) Correlation between genotype, phenotype, and sex of rearing in 111 patients with partial androgen insensitivity syndrome. Clinical Endocrinology 63:56–62. 2. Tom Mazur (2005) Gender dysphoria and gender change in androgen insensitivity or micropenis. Archives of Sexual Behavior 34: 411–421.	18 OH	19
20	21	22 TOPIC: BRAIN DIFFERENCES & GENDER: WOMEN & MEN ID HW: READ 1. D. F. Swaab and M. A. Hofman (1990) An enlarged suprachiasmatic nucleus in homosexual men. Brain Research 537: 141–148. 2. Simon LeVay (1991) A difference in hypothalamic structure between heterosexual and homosexual men. Science 253: 1034– 1037. WATCH Eric Kandel interview research neuroscientists on the topic https://charlierose.com/videos/21056	23	24 TOPIC: BRAIN DIFFERENCES & GENDER: GAY & STRAIGHT HW: READ https://molecularautism.biomedcentral.com/articles/10.1186/s13229-015-0035-y https://journals.sagepub.com/doi/10.1177/1362361319883506 https://dsq-sds.org/article/view/1672/1599 WRITE Cocktail Napkin Assignment	25 OH	26

27	28	29	30	31	01 OH	02	
		<p>TOPIC: BRAIN DIFFERENCES & GENDER—Autism and Empathy: 'The Two Genders?'</p> <p>(Reubs Walsh)</p> <p>HW: READ https://doi.org/10.1016/j.tics.2012.08.009 https://pubmed.ncbi.nlm.nih.gov/30062396/ Optional extra, will hopefully help if the JADD paper is confusing: http://doi.org/10.16993/sjdr.634</p> <p>WATCH https://www.youtube.com/watch?v=AIAUdaH-EPM&ab_channel=TEDxTalks https://www.youtube.com/watch?v=t9COMZ2HwXY&ab_channel=YoSamdySam Optional extra: https://doi.org/10.1016/j.dcn.2017.02.004</p>			<p>TOPIC: BRAIN DIFFERENCES & GENDER—Doubly Different: Autistic Perception, Gender Identity, and Social Norms</p> <p>(Reubs Walsh)</p> <p>DUE Cocktail Napkin Assignment</p> <p>HW: WRITE Discussion & Response 5—Can sexual differentiation—genes & hormones—provide a complete story for Gender ID?</p>		

APR2021

SUN	MON	TUE	WED	THU	FRI	SAT	
03	04	05	06	07	08	09	
		<p>TOPIC: COURSE WRAP-UP</p> <p>DUE: Discussion 5—Can sexual differentiation—genes & hormones—provide a complete story for Gender ID?</p> <p>HW: WORK ON grant proposal!</p> <p>READ each other's COCKTAIL NAPKIN ASSIGNMENT</p> <p>URGENT! Complete Course Evaluation</p> <p>Watch Joan Roughgarden Evolutionary Biologist https://www.youtube.com/watch?v=ibfu0GPHqqQ</p>			<p>TOPIC: GAPS IN THE SEX & GENDER LITERATURE—YOUR EXPERIMENTS, ie., What this class cared about</p> <p>DUE: Response 5</p> <p>DUE ON APRIL 8: Full write up of Grant Proposal</p> <p>URGENT! Complete Course Evaluation</p>		