Start Here

Biology 405_001: Good Genes

Mon/Wed 2:30-3:45pm | Coker 201

What's This Class About Again?

Reproduction, or passing on one's genes, is both the most ancient feature of life on earth and the continued focus of cutting-edge medical technology. This course examines our biological imperative and cultural quest to make babies. The syllabus leverages Biology's interdisciplinary scope, integrating bioethics, reproductive law and medicine, behavioral economics, genetic engineering, disability studies, and gender studies as we examine the biological particulars of creating life. A mixture of teaching methods will be employed, including traditional lectures, in-class discussions, group work, peer-to-peer teaching, and flipped-classroom online learning.

Please Note: This is a living document and subject to change

Teaching and learning are dynamic processes. In order to adjust to the real-time needs of the class, changes may be made mid term in the assignments and content of the course. If such a need arises, I will take care to notify you of these changes as soon as possible, and the version date (below) will be updated accordingly.

Revision date: 14August2023

📄 DetailedScheduleBiol405(Aug23).pdf

Instructional Team

Your Instructor

Dr. Zwemer (zuh-way-muhr) / Dr. Z
She/her/hers

Education:
Biochemistry BA (Vassar College, 2004) &
Genetics PhD (Harvard University, 2012)

Hometown:
Lexington, MA

About Me:
I like to bike, hike, swim and sew. I also like chocolate, coffee, and tea. I was a YMCA overnight camp counselor in NH for five summers. This is me standing inside the bottom of Þríhnúkagígur Volcano in Iceland (it is very cold down there!).

Your Peer Mentor (PM)

Sienna Halterman
She/her/hers
Majors: Biology B.S. & Sociology B.A.
Hometown: Southern Pines, NC
About Me:
I'm a senior and I have previously been both a peer mentor and a TA for BIOL 202. I curently do research in the Harrop lab, which aims to

understand how development varies across neurodevelopmental disabilities, and how sex and gender impact the diagnosis and expression of autism. I'm hoping to get my Ph.D. studying something similar. I love paddle boarding, hiking, board games, and binge-watching TV shows. I have strong interests on how culture influences our perceptions of identity and constructions of society, so I'm super jazzed about this class. I can't wait to meet all of you and be your PM for the semester!!

Instructor Access

- **Sakai Forums:** For logistical questions or content questions
- **Open Group Office Hours with Dr. Z:** For content questions, general advice, for fun...
  Once a week, I will host drop-in, in-person Group Office Hours. Sometimes listening to other people's questions helps you discover your own points of confusion or interest, and it's also a great way to build course community and maintain motivation. These sessions will have students from all the courses I teach this semester. The schedule can be found on Sakai > Calendar. No advanced signup is required, but please do check the Calendar before you head over to ensure that the time/location hasn't shifted.
- **One-on-one Office Hours with Dr. Z:** If you have a question of a personal nature that is too complex to discuss by email, then you can sign up for Zoom one-on-one office hours using my calendly site (https://calendly.com/lmzwemer). For content-related questions or to get to know me better, please plan on attending Group Office Hours instead.
- **Email:** For all other questions or personal matters (lmzwemer@email.unc.edu)

Required Readings

There is no textbook for this course. Rather, we will draw from a combination of popular science articles, educational websites, movies, and book excerpts etc., which are all available online either free or via the library login. Assigned readings are clearly listed by week under Sakai > Lessons > Week # > Lesson #.

Email Policy

Email

You have each been furnished with an @unc.edu email address. You are required to check this email address at least once every 24 hours in case I need to send out essential last-minute information. I will attempt to respond to all emails within 36 hours of your sending them. Please remember to be courteous and professional in your emails, for example by using a relevant subject line, beginning with a greeting, and using a closing signature that includes your name.

Course Goals & Learning Objectives

I've crafted the curriculum to interweave disparate aspects of my own undergraduate, doctoral and postdoctoral training and teaching experiences that I myself have found to be the most engaging, fascinating or interesting to scientists and dinner party guests alike. The breadth of topics and their cultural relevance were chosen so as to appeal to students who wish to understand more deeply the relevance of biology in our society and the ways in which genetics enriches and complicates our personal identities and lived experiences.

By engaging in this course, you will be empowered to...

Develop Media Savvy: Critically evaluate media stories using underlying knowledge of genetics and the scientific method. Exercise appropriate skepticism before re-posting or promoting popular media stories about science, health, or technology.

Deepen Your Biology Knowledge Base: Dig deeper into the physiology, cell biology, and (epi)genetics mechanisms of inheritance and gene expression. Uncover the rich biological realities underlying the popular (mis)conceptions about genetic destiny, sexual reproduction and human development, and identify areas of ongoing controversy.

Cultivate Your Writing Skills: Becoming a thoughtful and compelling writer takes practice, feedback, and revision. Effective written communication isn't just a product of a rigorous education - it's also a powerful tool for engaging in meaningful discourse and furthering your personal goals. We will also collaboratively decide on the bounds for use of Generative AI (i.e. ChatGPT) in our course.

Hone Skills in Primary Literature Review: Develop skills for critically reviewing primary literature, identifying and filling knowledge gaps, researching follow-up questions, and communicating summaries to a lay audience.

Transform the Individual Scholar: Research and articulate ethical viewpoints that may differ from your own. Develop skills for understanding nuanced and potentially contrasting viewpoints on ethical matters as they pertain to genetics. Learn *how to learn* biological

sciences, learn how to "show up" as an engaged member of the class, and how to take charge of your own learning experience.

Contributing to the Learning Environment
Creating a Productive Learning Environment

This course is an experience we are creating together. As your instructor, I will do everything I can to facilitate a productive, supportive, and engaging learning environment, but the rest is up to you. You're the one who has final responsibility for your own success in this course, regardless of how you personally define that success.

Your grade includes participation components (see also section on Assigned Work & Participation below) because **you are responsible for contributing to the educational experience of others** in the course (participation is not just about you!). When interacting synchronously or asynchronously, please be sure to demonstrate respect and sensitivity for your classmates. This means using non-judgmental language, giving others time to express themselves in group work, and accepting that intelligent, mature & ethical people may hold differing viewpoints, and this is okay (and even good). We bring different types of diversity with us into the classroom (different ethical frameworks, values, personal experiences, family structures, physical abilities, intellectual strengths, religious backgrounds, cultural affiliations, personal identifications, etc.). This **diversity is a strength** - it allows us to more richly experience the spectrum of human experience through our work together.

Below are a few guidelines so as to create and inclusive and empowering learning environment:

- **Step up, Step back:** Be aware of how much you are contributing to in-class discussions. Try not to silence yourself out of concern for what others will think about what you say. If you have an idea, don't wait for someone else to say it; say it yourself. On the other hand, if you have a tendency to contribute often, give others the opportunity to speak.
- **Show Respect by Giving your Attention:** Don't interrupt, engage in private conversations, or turn to technology while others are speaking. Use attentive, courteous body language, even when engaging remotely. Keep your video on when you can and keep focused on the screen.
- **Let Curiosity Open your Mind:** Understand that there are different approaches to solving problems. If you are uncertain about someone else's approach, ask a question to explore areas of uncertainty. Listen respectfully to how and why the approach could work and respond based on that, not on your preconceptions.
- **Create the Environment you Need:** Make an effort to get to know the other students, especially in your small groups. Introduce yourself and make a point to share the pronunciation of your name and your preferred pronouns. Refer to classmates by name and make eye contact with other students (via the screen).

Challenging Topics

Broadly speaking, over the course of your college career, it is expected that you will engage with topics that you may find emotionally challenging or unexpectedly difficulty. It's perfectly normal for this to make you feel uncomfortable, and entirely appropriate for you to reach out to me and/or your friends to talk about that. But please do remember a college education is *designed* to confront you with things that challenge and at times even threaten your world-views. This is actually one of the privileges of an education. So, if you feel intellectually or emotionally disturbed by what you learn in class, that's not necessarily a bad thing. It may only mean that you are engaging with novel perspectives, which is what college is all about.

As for topics that are not just challenging, but are possible triggering: I know that some of us have trauma in our background and may need to seek extra support around topics that resonate with those painful experiences. So while I do not offer specific trigger warnings, I value making sure that each of my students is able to engage fully with the course and I trust my students to reach out to me for support as needed.

UNC Policy on Non-Discrimination

The University is committed to providing an inclusive and welcoming environment for all members of our community and to ensuring that educational and employment decisions are based on individuals' abilities and qualifications. Consistent with this principle and applicable laws, the University's Policy Statement on Non-Discrimination. offers access to its educational programs and activities as well as employment terms and conditions without respect to race, color, gender, national origin, age, religion, genetic information, disability, veteran's status, sexual orientation, gender identity or gender expression. Such a policy ensures that only relevant factors are considered, and that equitable and consistent standards of conduct and performance are applied. If you are experiencing harassment or discrimination, you can seek assistance and file a report through the Report and Response Coordinators (email reportandresponse@unc.edu or see additional contact info at safe.unc.edu) or the Equal Opportunity and Compliance Office at https://eoc.unc.edu/report-anincident/.

Deadlines & Accountability

Deadlines

All assignments due dates will appear on Sakai > Lessons > Week # > Lesson #; revisions to this schedule will be announced on Sakai > Announcements. The time for all due dates is 11:59 pm. Generally speaking, I will NOT send reminders. You are responsible for following the schedule and submitting the assignments on time.

Unless you have extraordinarily extenuating circumstances, late work receives a grade of 0, and there will be no "second chances". Make sure you check the Lessons tab deadlines and plan your time carefully. There is one exception to this policy: each student has a one-time "grace token" they can use for an automatic 24-hour extension on any one single deadline. You must email me to indicate your plan to use this grace token before the 24-hour time period has passed. Please note that this may not, however, be used for exams.

Some students like having accountability buddies (somebody you check in with about assignment progress) or you might create a GroupMe or Slack channel and communicate this way to remind one another to stay on top of deadlines.

Remember that while you alone are responsible for your success in this class, you yourself are also the one who will benefit from your hard work and dedication to the coursework. **You owe it to yourself to hold yourself to high standards**. If you find yourself "slipping" behind or having trouble keeping on track, reach out to me immediately so that I can help you come up with a more structured approach that includes some oversight on my part. **Students who ask for help always earn my respect, and often earn higher grades**.

If you experience illness or are affected by emergency circumstances that impact your ability to complete our coursework on time, please reach out to me immediately so that we can discuss them. You are responsible for timely and clear communication so that I can best respond and support you.

Absences

Students are expected to arrive on time and participate in class sessions. Attendance will be taken each class session - because of the small size of this course and the active design of the lessons, your engagement matters!

If you have a cough or a cold, please consider staying home - even if you know you don't have COVID - getting ANY kind of illness creates logistical problems for people this semester - but at a minimum, please consider masking to ensure you don't pass along any infectious diseases. *Thank you in advance for being such wonderful class citizens!*

If you experience illness or are affected by emergency circumstances that impact your ability to **complete our course assignments on time**, please do reach out to me immediately so that we can discuss them. You are responsible for timely and clear communication so that I can best respond and support you.

Exams must be taken within the provided time-range; no makeup exams except in special circumstances, i.e. medical or family emergency as documented in writing. Make-up assessments may be more challenging than the original. Additional information can be found here: https://catalog.unc.edu/policies-procedures/attendance-grading-examination/#text.

Academic Integrity

Academic Integrity

All activities and homework in the class are expected to conform to the standards summarized by the UNC Honor System and explained by the UNC Office of Student Conduct https://studentconduct.unc.edu/.

There are times when we all struggle to do what is right or to find a way out of an unusually stressful situation. In my experience, most violations are not due to ill intent, but to either ignorance or desperation. If you find yourself falling behind or struggling and are tempted to violate the honor code, **please simply come to me directly ASAP** so that we can come up with a plan to move forward.

Plagiarism

It's very important that all work submitted be your own original work. Policies around plagiarism can be confusing to students. Many violations that I have seen are due to ignorance of the policy or lack of skill in this area, and could have been completely avoidable if the student had been **proactive about getting help** or clarifying their questions. Here are two good resources you can consult: https://writingcenter.unc.edu/tips-and-tools/plagiarism/ or http://lib.usm.edu/plagiarism_tutorial/ or https://www.bowdoin.edu/dean-of-students/judicial-board/academic-honesty-and-plagiarism/common-types-of-plagiarism.html

For example, you may not simply "borrow" or "copy" phrasing from your classmates, even when doing group work. If you work together with a friend on writing assignments, you may **not** split up the questions and copy answers from one another – this is a form of cheating. I am a big

fan of group work, but it's essential that each person takes the time to really understand the concepts and then express the answers in their own words. I appreciate that it can be hard for some students to understand **the difference between group work and cheating** (especially if they have learned different standards in high school) so please do not hesitate to ask me for help if you want to be sure you understand correctly.

If you need to paraphrase an idea from a published source, please provide a proper citation. Learning when and how to properly cite material as well as how to avoid plagiarism are not as simple as they sound – please don't hesitate to reach out for help in developing these skills.

Use of Generative Artificial Intelligence

As a class, we will meet to discuss what role, if any, we want to allow Generative AI (e.g. ChatGPT) to have in the class. The decision might be that no use of Generative AI is allowed - or it might be that all use is allowed provided proper citation is made. For one example of a set of guidelines that might be agreed upon, https://sph.unc.edu/iis/syllabus-guidelines-for-generative-ai/. In any case, you are always responsible for the veracity of the science you present. Once we decide upon a policy, you will be expected to adhere to that policy. Deviations from that policy would be considered an act of academic dishonesty and thus a violation of the Honor Code.

Quiz Pledge

On quiz days, you will be asked to sign a statement indicating your commitment to neither lie, cheat, nor steal in your academic endeavors, nor to accept the actions of those who do. By signing this statement, you will indicate your commitment to upholding these ethical standards and that furthermore, you will refrain sharing information that would allow other students to cheat, and/or posting quiz questions to online exam banks. Please note that all materials used in this course, including: slides; practice problems; homework assignments; small group assignments; and quizzes, are covered by **copyright protection**, which forbids you from sharing class materials with any outside individuals or groups**.**

These materials are the original work and intellectual property of the UNC Biology faculty and we have worked very, very hard to create them so as to offer the best possible learning experience for our students. It is a violation of copyright law (and also, quite simply, poor form) to share these materials without the explicit permission of the department.

Irregularities

If your work is suspected to have violated the Honor System standards, or it is suspected that you have assisted another student in violating the Honor System standards, then I am *required* to file a formal report to the University Honor Court (https://studentconduct.unc.edu/report-violation-office-student-conduct). In addition to whatever formal procedures are set forth by the University, you may fail the assignment.

Your Voice

Giving Feedback on the Course

I am always receptive to feedback, but some people prefer to communicate anonymously. This link will take you to an anonymous form for you to submit your feedback and/or ideas about the course. If you wish, you can sign your name and indicate whether or you would like me to follow up with you (but this is not required). Please do know that this form comes directly to me – it does not go to the department or the university administration – and I read each word with careful attentions. As such, please be respectful, constructive, and specific with your feedback, suggesting possible solutions if you want something to change.

Support & Resources

Getting Support for Anxiety and Stress

College is a wonderful time in many ways, but it can also be a time of unique challenges and stresses. This can of course be amplified as we continue to navigate a pandemic. One of the many benefits of being a UNC student is that you have access to excellent, free formal support services, whether you are in person or need to access them remotely. Please feel welcome to reach out to me to discuss getting connected to UNC resources and/or review this list of options: https://care.unc.edu/

Counseling and Psychological Services (CAPS) is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services. Go to their website: https://caps.unc.edu/. to learn more or call 919-966-3658 (available 24/7). Resources are also available through the National Suicide Prevention Lifeline (1-800-273-8255) and the Crisis Text Line (Text START to 741-741).

Equal Opportunity & Compliance

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at https://eoc.unc.edu/report-an-incident/ or by contacting the University's Title IX Coordinator (Elizabeth Hall, titleixcoordinator@unc.edu) or the Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu). Confidential resources include Counseling and Psychological Services and the Gender Violence Services Coordinators (gvsc@unc.edu). Additional resources are available at safe.unc.edu.

Sometimes making that first call or sending that first email can feel overwhelming. It's okay to ask for help - you deserve it.

Supporting Fellow Students in Distress

As members of the UNC community, we each share a personal responsibility to express concern for one another and to ensure that our course meetings and the campus as a whole remain a healthy environment for learning. Occasionally, you may become worried or concerned about a fellow classmate's well-being. When this is the case, I would encourage you to share these concerns with the professionals at either the Office of the Dean of Students (https://odos.unc.edu/carereferral) or CAPS (https://caps.unc.edu/support-student). As always, if you think there is immediate danger call 9-1-1.

Accessability

Accessibility Resources

The University of North Carolina at Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in difficulties with accessing learning opportunities.

Although I am very happy to help and want to support all of my students to succeed, it is your own responsibility to get the appropriate documentation filed and to approach me about your needs. All accommodations are coordinated through the **Accessibility Resources and Service Office**. See the ARS Website for contact information: https://ars.unc.edu or email ars@unc.edu. Relevant policy documents as they relate to registration and accommodations determinations, as well as the student registration form, are available on the ARS website under the About ARS tab.

Letters of Recommendation

Letters of Recommendation

If you have succeeded academically AND you feel that by your participation in this course you have contributed to creating a rich learning environment that has enabled you and your classmates to grow as scholars and scientists, then I would be happy to write you a short letter or recommendation for your own use. **Please think not about whether or not we have had friendly and enjoyable conversations, but rather about whether or not you can identify several specific situations in which I have been uniquely situated to observe and comment upon relevant strengths of yours.** Sometimes it is more important to get a letter from a professor who knows you well and has observed your academic growth, even if they are not a Biology professor. Please keep in mind that if you have earned less than a B+, it is difficult for me to write a compelling letter on your behalf. Please also keep in mind that a letter of recommendation is neither guaranteed, nor a student right.

If you do think that I am the right person to pen this letter, then please (ideally) ask me no later than 4 weeks after the conclusion of the course so that I may draft the letter while my recollections are still fresh. If I agree that I can write you a strong letter, then I will furnish you with a list of questions to answer, which will guide me in writing you the best possible letter.

Grading Breakdown

Grading

To earn a high grade in this course, you will need to: commit yourself to growing as a learner; demonstrate your mastery of the course content through performance on assessments; and earnestly contribute to the creation of a robust and productive online classroom environment.

Assessment	% Grade (Points)	Description

Forum Prompts or Online Homework	**22.5%** (25*9)	On nine occasions, I will post either (a) A Sakai assignment containing instructions for writing a short response as well as commenting on the response of another (b) a short multiple-choice online homework assignment. The goal of the online homework is to assess your comprehension of the assigned reading, and as such you are encouraged to consult the reading <u>while</u> you answer the questions. The due dates will be clearly stated – no late work will be accepted*.
Reading Leader	**4%** (40)	Each session, two-three people will be assigned as question leader for one of our articles. Each of you will need to propose ~four specific and substantive questions to spark a class dialogue. These must be submitted to me via Sakai > Assignments no later than the afternoon before class (by 4:59pm) so that you can help lead the class discussion the next day. I will give you feedback on these questions so that you can incorporate it into your planning with your co-facilitators https://docs.google.com/spreadsheets/d/17FolAtR9P71V1PbRxxEBn2I1ZuTjUHMNnV2XtWFocgE/edit?usp=sharing
In-class Quizzes	**36%** (120*3)	Three semi-cumulative, in-class quizzes
		(ARS accommodations afforded with proper documentation)
Writing Project: Topic Proposal	**1%** (10)	*See Syllabus section on Writing Project*
Writing Project: Peer Workshop	**5%** (50)	*See Syllabus section on Writing Project*
6-page Midterm Paper	**20%** (200)	*See Syllabus section on Writing Project*
Participation	**11.5%** (115)	*See Syllabus section on Participation*

*Please see syllabus section on deadlines to review policy re: your one-time grace token

Points, and not letter grades, will be assigned for individual quizzes and assignments. The percentage of points earned over the course of the entire semester vs. those offered will determine course grade:

(93-100) A   (90-92.9) A-   (87-89.9) B+   (83-86.9) B   (80-82.9) B-   (77-79.9) C+

(73-76.9) C   (70-72.9) C-   (66-69.9) D+   (60-65.9) D   (<60) F

Please note that grades will not round up (e.g. B= 83, NOT 82.96)

To be fair to all students taking the class, I do not give out extra credit to individuals. Please do not ask for it. *Similarly, please know that hard work alone is no guarantee for success, and practices that bring you success in other courses may or may not be effective in this course*. *Time and again, I have seen students spin their wheels as they try to work harder rather than reaching out for help to learn new strategies. Whether or not you believe you are on track to earn your desired grade, be proactive about reaching out for help during office hours and peer mentor hours.*

Participation

Participation is an extremely important in this course, which is reflected in your grade distribution.

Earning participation points is an **active** process – these are not "gimme" points awarded for mere attendance. These are points you need to earn by enriching the learning experience of your peers.

Participation can be earned in any of the following ways (either in live sessions or on Sakai Forums)

- Active, high quality contributions to group discussions, demonstrating understanding of pre-work reading and assignments
- Comments or questions that demonstrate an ability to synthesize concepts from both the basic science and the social science aspects of the course
- Originality (*not necessarily accuracy!*) of thought in brainstorming sessions
- Willingness to disagree with prevailing opinion during discussion, and to defend your position even in the face of criticism, or to change your stated position if you've been convinced
- Being open to criticism of your ideas and to the possibility of using that as a learning experience
- Risk-taking in asking questions for clarification, even if you worry that you are "the only one" who is confused (I guarantee you are not!)
- Risk-taking in furthering the depth and direction of the ongoing discussion topic, whether your thoughts are polished or "unfinished"
- Demonstrated ability to occupy each of a variety of roles in group work during class (main speaker, support speaker, researcher, scribe etc.)
- Sensitivity to dynamics of a class discussion or debate: willingness to balance contributions with judicious silence - abstaining from commenting so that others may step forward (don't be afraid of silence!)
- Speaking up when you think a boundary may have been crossed and offering constructive feedback on what could be done differently

Even though this is a small course, you are not guaranteed a full participation score simply for showing up every day. Some students are very comfortable participating, while some need to develop their comfort further. Please reach out to me right away if you are student who needs help becoming comfortable with the participation expectations for this course. I am very happy to work with you so that you can get the most out of our very short time together. Please do not take a "wait and see" approach.

Quizzes

Quizzes

Quizzes will be taken on paper, using a pencil or pen. You will be asked to put your cell phone / smart watch / computer out of sight (i.e. in your zippered backpack) or to leave it at the front of the room, if you do not have a backpack. If you need to ask me a question during the quiz, raise your hand and I will come to you. **You may bring exactly one piece of paper of notes for personal use during the quiz** (both front and back, standard sized printer/notebook paper, either handwritten or printed out). These notes will be collected along with your quiz, so be sure you have your name on them. Collected notes will not be returned to you, so if you want to be able to keep a copy of your notes page, be sure to make a personal before the quiz day.

Quizzes must be taken during the scheduled dates and time ranges that are indicated (accommodations will be made for students with appropriate documentation). There will be **no make-up quizzes** except in special circumstances, i.e. unexpected medical or family emergency as documented in writing, in which case you may be issued a make-up assessment that is more challenging than the original. Additional information can be found here: https://catalog.unc.edu/policies-procedures/attendance-grading-examination/#text.

Writing Project

<u>Introduction to the Assignment:</u>

One of the goals for our course is to increase your ability to research a Biological topic, then synthesize primary and secondary sources into a well-organized, well-sourced, and compelling essay. Effectively using writing to organize, convey and argue for ideas is a tough skill to master, and one that many people may not yet have had formal training in. This is why we have so many opportunities for you to improve your skills in these areas throughout the semester.

We will progress in a step-wise fashion, starting with exposure to the Biology department librarian during class time, as wel las engagement with the Writing Center Resources and a discussion of the key components of an essay that students often struggle with during Writing Workshop #1, and then by drafting and iteratively revising an 8-page [expository essay](#).

<u>General Guidelines:</u>

- The **topic** of your essay should be some type of "Genetic Controversy" (examples discussed below): For your essay topic, you may choose from among these topics:
  - Use of genetic engineering to render disease vectors extinct (mosquitos, parasites, etc.)
  - Use of genetic engineering to de-extinct certain organisms for the purposes of ecological restoration
  - Use of animals for growing spare organs (e.g. pig kidneys, xenographic transplants)
  - Government databases of DNA
  - Race-informed medical practices
  - Ownership of genetic information & patent law
  - Safety and environmental impact of GMO foods
  - Use of genetic information in the criminal / legal system (forensic genetics)
  - Or pitch one to me *(should not be one we will have already covered extensively in class)*

- As for **content,** your essay should:
  - Include a summary of the main arguments for and against, BOTH/EVERY side as well as an analysis of their respective scientific accuracy (this part is very, very important and should be focused on extensively)
  - Discern between risk (likelihood of outcome) and consequences (severity/quality of outcome) in the context of your controversy. Sometimes the risk is low or can be controlled, but the consequences are very high, and vice versa.
  - Reference formal bioethical frameworks or schools of thought as were highlighted in our course
  - Make an argument, supported by evidence, for one side of the controversy, referencing why your conclusion is superior, despite the existence of at least two reasonable choices.

- You will need to base your research in the following: at least two pieces of primary scientific literature, one scientific review article, and four secondary sources. Please be sure to use these sources to support any assertions you make in your essay, and to provide proper credit for scientific work https://guides.lib.unc.edu/citing-information/introduction – you will use [APA style citations](#).

- Please be sure to review the Syllabus section on plagiarism to ensure you understand the nuances, and can appropriately avoid [mosaic plagiarism](#), which some students are mistakenly taught is acceptable. Don't be shy about asking (or consulting the [Writing Center](#)) if you're not sure! As always, you will need to ensure your work is in keeping with the policies for academic integrity that are outlined in our course as well as the specific details we decide upon as a class collaboratively (see Syllabus > Academic Integrity > Generative AI).

- Total length should be 7-8 pages at double-spacing. Do not go over this limit. To achieve the correct balance of rigor, depth, and length, you will need to ensure your writing in concise and cogent – the Writing Center can help you with this, as it may not be a skill set you have spent much time developing thus far.

- I will be consulting the standard writing grading rubric indicated in Resources > [PurdueRubric](#) and I recommend that you use this as well to guide your writing, your peer-editing, and your revisions. You **will** be graded on style, content, grammar, structure, flow, etc.

- **Mon Sep 11th:** Literature Review & Library Research Workshop with Guest Speaker, Biology Department Librarian, Mr. David Bomito

- **Wed Sep 13th:** In Class Workshop #1 (Work in groups with resources from UNC's Writing Center)
- **Sun Sep 16th:** Choose your topic & submit proposal with anticipated bibliography (pdf uploaded to Sakai > Assignments)
- **Sun Oct 8th:** Email Dr. Zwemer the link of for your Outline / Scant draft as a Google doc with commenting enabled
- **Wed Oct 4th:** Synchronous remote Writing Workshop #2 (Peer-workshopping of drafts within assigned workshop group)
- **Sun Oct. 29th:** Email Dr. Zwemer the link for your polished first draft (Google docs with commenting enabled – do not include your name – rather include your PID)
- **Sun Nov 5th:** Complete anonymous feedback/detailed suggestions to TWO assigned peers
- **Sun Nov 19th:** Final paper submission to Dr. Zwemer (pdf uploaded to Sakai > Assignments)

PROPOSAL ASSIGNMENT

Your proposal should indicate which topic you have selected in as much specificity as possible. Please also provide a very brief 3-4 sentence overview of what you plan to discuss and why you chose it, and then give a list of five sources that you think look promising (at least one of these sources must be a scientific review article and two must be primary literature). You can change your mind later about the sources, but these should be ones that you spend some time selecting with care now.

Pro-Tip: You may find it most helpful to begin choosing a topic by skimming some reputable popular science sources (see below for suggestions). Once you find a topic or two of interest, use what you've learned from Mr. Romito to find some reasonable looking review articles published within scientific journals. Only after that will you likely have sufficient background to begin searching for useful primary literature.

Helpful Resources:

Worksheets from The Writing Center (https://writingcenter.unc.edu/)
UNC Library https://guides.lib.unc.edu/sb.php

WRITING WORKSHOP #2 (10/4/23)

Big Picture:
Remember that the purpose of a workshop is not to try to prevent criticism – it's to get HELP – to leverage the strengths of your peers to assist you in your creative process. It's a brainstorming process – you can take or ignore the advice, but make sure you understand their offereings so that you can consider them before you decide whether or not they are of use to you.

Preparation:
Create a google doc with your outline/draft. Be sure to change the settings so that comments can be added by anybody with the link. Email me your google doc URL by 11:59pm on Sunday October 8th.

At the top of your google doc, answer the following questions.

Q1. What is your topic & why did you choose it?
Q2. What kind of feedback are you most hoping to get today?
Q3. Are there any stuck points or "weak links" that you want help brainstorming about?
Q4. Have you been able to find satisfactory resources? How is the research process going overall?
Q5. What is your proposed timeline for completing the first draft (due 10/29)

Beneath your answers, post your full outline/scant draft. Be sure to keep a separate copy of your outline/draft in a document on your own computer so that you have a backup copy.

Additional process instructions will be available on the relevant Sakai > Lessons page when the time comes.

Resources
Potentially useful documents from the Writing Center (for use while you are drafting and/or while you are workshopping):

- Flow: https://writingcenter.unc.edu/tips-and-tools/flow
- Outlines: https://www.youtube.com/watch?v=aZUrlFY84Kw&feature=youtu.be
- Thesis Statements: https://writingcenter.unc.edu/tips-and-tools/thesis-statements/
- Transitions: https://writingcenter.unc.edu/tips-and-tools/transitions/

Your complete first draft is due on Sunday October 29th by 11:59pm To submit your first draft, first ensure that the permissions are set so that anybody with the link is allowed to comment, then email this google doc link directly to Dr. Zwemer. **Instead of your name at the top of the document, write your PID.**

If there is anything in particular you would like the editors to focus on (structure, transitions, distribution, clarity of thought, grammar) please leave a note to them at the top of your paper.

Be sure to keep a separate copy of your draft in a document on your own computer so that you have a backup copy.

Dr. Z will email you back with the links for TWO other papers you are meant to review. In order to receive credit, you need to complete your feedback process for each paper by 11:59pm on Sunday November 5th.

This feedback should be substantial, and go beyond the scope of simply checking for spelling & grammar or blanket statements. When reviewing, please remember that although this is anonymous, there is a person at the other end, so you want your comments to be thoughtful, supportive and constructive. If there are portions you really like, go ahead and comment on those. Try to focus not only on grammar, but on clarity of expression (do you understand their ideas), structure (is the organization of thoughts logical and is the emphasis on various ideas appropriate), and strength of argument (do they have sufficient evidence for their argument? Is it expressed in a compelling way)?

You may also find it helpful to write a summary note at the bottom of the paper, indicating your thoughts, both about what's currently working and about what might be a way to make the paper stronger. If another reviewer's comments are already there, you can just write beneath them. It's okay if you disagree or have a different perspective.

FINAL DRAFT SUBMISSION (11/19/23)

It is your decision whether or not to take on board the suggestions offered by your peers in response to your first draft. Your paper must be submitted to Sakai > Assignments by Sunday Nov 19th at 11:59pm. Be sure to include your bibliography and to number your pages.

Tips for Success
Dr. Z's General Tips for Success

As your instructor, I will do everything I can to facilitate a productive, supportive, and engaging learning environment, but the rest is up to you. It's my job to create opportunities for you to learn, but it's your job to do the actual learning. **This is NOT a class for passive learners. You are expected to be actively engaged in this course through class discussions, class activities and pre- as well as post-lecture assignments and readings.**

Note Taking

The material for the course will presented from prepared slides, which are NOT sufficient by themselves, so students are **encouraged to print the PowerPoint slides from Sakai before class, then take notes on them**. Educational research has shown that students engage more fully with the material when they take notes by hand (Psychol Sci. 2014 Jun; 25(6): 1159–1168); this practice allows you to process the information in real time, analyzing and synthesizing the information right away as you determine how the concepts related, and identifying any questions about the material in real time. Make note of your questions and ask about them in real time, if possible. If you seem lost, you are not alone, but you may be the only one brave enough to admit it. Help your colleagues out by asking the questions that they might be too timid or embarrassed to ask.

If you are accustomed to typing notes, or to simply transcribing lectures verbatim, it may feel cumbersome and difficult to figure out how much to write down and what to write down – that's because making those decisions is actually the first stage of learning. To decide what to take notes on, ask yourself:

"What is the main point of this slide?"
"Why is this specific information being presented to me?"
"How does this information relate to the previous slides?"
"Is there anything confusing to me about this concept?

Your PM would be happy to meet to help you learn the art of scientific note taking, which may be unfamiliar to you, or to review material that you are still unclear on. Additionally, actively reviewing notes with a classmate is a fantastic way to help you fill in any details you may have missed, to test your comprehension, to build your science communication practice, and of course to build friendships and have fun!

Preparation & Review

As an aside, the more work you can put into learning the material outside of the lectures - the better your outcomes will be. Listening actively at normal speed, pausing when necessary to review a concept, taking selective notes – these practices will all paradoxically save you time in the long run as well as boost your performance. If you stay on top of your reading and homework, there will be no need to cram for an exam (which is good, because cramming doesn't work very well for this kind of material). **Practice, practice, and practice more,** reviewing your notes frequently, testing yourself on the concepts (the internet to find more problems or better yet, create your own), and working with your classmates in (remote) study groups. **Always remember that you are the only one who controls your success in this course, regardless of what shape your goals take.**

Taking Charge

We are here to help you, but you have to be proactive about your academic success. You are expected to visit the **Peer Mentor** and **Group Office Hour** sessions routinely. Don't wait until there is an issue – you should attend these sessions regularly to go over the slides, work through practice problems, and challenge yourself to apply the material (not just understand it).

			Biology 405 Schedule of Lessons (Coker 215, MW 2:30-3:45)	
			Note that this schedule is subject to change at the discretion of the professor to suit the needs of the class as well as the availability of our guest speakers. All sessions are in-person, unless otherwise noted. (Last Revision 16 August 2023)	
Week	**Date**	**Lesson Number**	**Sessions** (A)=scheduled asynchronous remote (S)=scheduled synchronous remote	**Deadlines (11:59pm)** *Take Note: many, but not all, deadlines are Sunday nights*
One	21-Aug	1	Course Orientation & Molecular Genetics Review	Online Homework #1 (22-Aug)
	23-Aug	2	Evolutionary Anthropology	
Two	28-Aug	3	Genetic Essentialism & Personal Identity	Forum Post #1 (29-Aug) & Comment (30-Aug)
	30-Aug	4	**(A)** Ancestry vs Race Part 1	
Three			University Holiday - Labor Day (9/4)	n/a
	6-Sep	5	Ancestry vs Race Part 2	
Four	11-Sep	6	Literature Review & Library Research Workshop (Guest Speaker: David Romito)	Submit Topic Proposal & Potential Bibliography (16-Sep)
	13-Sep		**Writing Workshop #1**	
Five	18-Sep	7	Scientific Racism & Eugenics	Forum Post #2 (19-Sep) & Comment (20-Sep)
	20-Sep	8	Population, Consumption & Climate	
Six			*Well-being Day - No Classes (9/25)*	n/a
	27-Sep		**In-Class Quiz #1 (Lessons 1-5, 7-8)**	
Seven	2-Oct	9	Reproductive Strategies	**Online Homework #2 (3-Oct)**
	4-Oct		**(S)** Writing Workshop #2	
Eight	9-Oct	10	Mechanisms of Dosage Compensation & Evolution of	Submit Outline/Scant Draft (8-Oct)
	11-Oct	11	Embryonic and Fetal Development	Online Homework #3 (15-Oct)
Nine	16-Oct	12	Biological Sex - Beyond the Binary	Forum Post #3 (17-Oct) & Comment (18-Oct)
	18-Oct	13	Intersex & Society	
Ten	23-Oct	14	Gender Identity & Essentialism	Polished Paper Draft #1 (29-Oct)
	25-Oct	15	Genetic Studies of Human Sexuality	
Eleven	30-Oct	16	**(A)** The Placenta	Peer Comments on Draft #1 (5-Nov)
	1-Nov		**In-Class Quiz #2 (Lessons 9-15)**	Forum Post #4 (5-Nov)
Twelve	6-Nov	17a	Disability, Disease, Difference Part 1	Forum Post #4 Comment (6-Nov)
	8-Nov	18	Beliefs About Personhood (Guest Speaker: Rachel Veazey, CGC)	
Thirteen	13-Nov	17b	Disability, Disease, Difference Part 2	Final Paper Submission (19-Nov)
	15-Nov	19a	The Big Business of Little Babies: ART	Online Homework #4 (19-Nov)
Fourteen	20-Nov	19b	The Big Business of Little Babies: PGT	TBD
			University Holiday - Thanksgiving (11/22)	
Fifteen	27-Nov	20	Surrogacy & Reproductive Tourism	Forum Post #5 (28-Nov) & Comment (29-Nov)
	29-Nov	21	The New Eugenics & Reproductive Law	
Sixteen	4-Dec	22	Gene Editing & Gene Therapy	TBD
	6-Dec	Catch Up		
			Quiz #3 (Non-Cumulative "Final" Lesson 16-21) Dec. 8th 4pm-5:15pm	