

Fall 2016

BIOL 4985/ENGL 4385

“Translating Science”

**Instructors:** Dr. Janet Genz Email: jgenz@westga.edu  
Phone: 678-839-4032  
Office: Biology 204

Office Hours: M 13:00-15:00  
T 16:30-18:30  
W 11:00-13:00  
R 11:00-15:00  
or by appointment

Dr. Laura Miller Email: lmiller@westga.edu  
Phone: 678-839-4849  
Office: TLC 2238

Office Hours: MW 11-12:15; F (OL)  
9-1. and by appt.

**Meeting Times and Location:** M/W 09:30-10:45  
Biology 114 or 150

**Course Description:** In this innovative course, students will discover how scientific concepts are translated into popular culture and literature. We will read both scientific and literary works and learn how scientific research is informed by creativity and imagination. From the early modern period, when scientists combed through works like Ovid’s *Metamorphoses* to find secret clues to alchemical recipes, to the present day, when researchers use MRI imaging to analyze reader responses to books, science and literature have much to say to one another.

#### Learning Outcomes:

At the end of this course, the student should be able to:

1. Understand and explain the genre of scientific writing.
2. Be able to write in an interdisciplinary context
3. Understand the historical context of scientific innovation and fundamental concepts
4. Describe the connections and differences between science and its dissemination

#### Required Texts:

*The Voyage of the Beagle*  
*Hiroshima* (available online)  
*The Double Helix*  
*Labcoats in Hollywood*  
*The End of Plenty*

- Selected excerpts (provided in class, or email, or via CourseDen)

#### Student Responsibilities:

Consistent execution of certain activities will allow you to reach your fullest understanding of the material presented in this course.

- **Attend all classes** and be on time.
  - If you arrive more than 15 minutes late, you may be asked to leave to avoid disrupting the class.
  - Attendance is especially important on lab days; you will be unable to write a lab report if you are not in class that day.
- Come to class prepared – complete all readings, bring all necessary class materials (notebook, pencils, laptop, book, etc.)

- **Being prepared** also means being prepared to learn! We expect that you are attending class because you wish to learn the material being covered. Any activity that is not learning-oriented (e.g. texting, surfing the web, side conversations, etc.) is disrespectful to not only the instructor but also your classmates, and is unacceptable during class time. If you choose to engage in any activity other than being an engaged member of this course, you may be asked to leave.
- **Cookie policy:** If your phone goes off during class, you have to bring COOKIES to the next class.
- For each hour of class time, it will be necessary to put in **at least** 2 hours of studying outside of class. This equates to a **minimum of 6 hours each week outside of class** that you should be investing in this course; schedule accordingly.
- Periodically, announcements containing important information will be sent to the entire class. Thus, **it is your responsibility to check CourseDen** (<https://westga.view.usg.edu>) for messages daily.
- University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. It is the student's responsibility to **check** his or her **email regularly**. All emails sent to the instructors should originate from your official email address.
- **Co-teaching policies:** Dr Miller and Dr Genz meet weekly to discuss what is going on in the class; be aware that we are in communication and that both instructors are aware of the different components of the class. If you send one of us an email about the course, please CC the other. That way we have a record of your communications.
  - Dr. Miller and Dr. Genz will divide the grading. If you have a question about your grade, please contact both of us. Remember that you will be able to rewrite one paper for a higher grade.
  - Whether you are enrolled in Genz's or Miller's section, you need to **attend all classes** taught by both professors. Attendance in all classes will be essential to your success.
- **Late work policy:** No late work will be accepted without prior approval. Plan ahead.

**Grading:**

Short Papers and Lab Reports	30%	
Quizzes (online)		30%
Comprehensive Final Exam	30%	
Attendance/Participation (CATME)	10%	

Your final letter grade will be determined by your numeric grade, calculated as a weighted mean and rounded to the nearest integer following standard rounding rules, per the following table, no exceptions.

A = 90 - 100
B = 80 - 89
C = 70 - 79
D = 60 - 69
F = 59 & below

Information regarding **UWG's Honor Code**, **Credit Hour Policy**, and **ADA Accessibility** can be found at <http://www.westga.edu/UWGSyllabusPolicies/>

**Trigger Warnings.** It is impossible for me to control or predict what will trigger a student. If you are triggered by something, feel free to step out of class if it happens there, contact me, or visit office hours.

**Our mental health and our community:** If you are having thoughts of harming yourself or another, please seek help. You are worth so much more than you know. Recovering from adversity is hard work, but worth it, because you are worth it. There are free campus resources to help you. The number for our counseling center (with free counseling) is 678-839-6428. 839-6000 is the number for campus police. The national suicide prevention lifeline is 1 (800) 273-8255. Call them. And please: if you see something, say something. For example, reach out to your roommate if he/she has seemed unhappy and withdrawn lately. If you want someone to get help who seems unwilling to do so, visit <http://www.westga.edu/uwgcares/> and use the link provided to contact the university anonymously. We are living in a violent time and there are many things we cannot control. We can all do our part to create a college climate of friendliness and compassion.

**Title IX Reporting:** As of July 1, all faculty and staff at public universities in Georgia became mandatory reporters for sexual assault. We are required to report all sexual assault, and we are not allowed to maintain the information in confidence with the student. What this means for you is that if you come to me and tell me about an incident of sexual misconduct, I am required to report it. Please call one of the above-listed numbers or email [counseling@westga.edu](mailto:counseling@westga.edu) to talk with someone in the event that you have a concern related to sexual assault or misconduct.

**Course Schedule:**

**Anything that is listed under “Associated Reading” should be completed by the listed date.**

Topic	Date	In-Class Activity	Associated Reading
Introduction	Aug. 10	Lecture: (Genz & Miller)	Syllabus
Experimental Culture and the Beginning of Science	Aug. 15	Lecture: Seventeenth-Century Science and The Royal Society (Miller)	Selected excerpts ( <i>Philosophical Transactions</i> )
	Aug. 17	Demonstration: Effect of an air pump (Genz)	
	Aug. 22	Lecture: Newton (Miller)	Selected excerpts ( <i>Principia</i> )
	Aug. 24	Discussion	
Science as Exploration	Aug. 29	Lecture: Darwin (Miller)	<i>The Voyage of the Beagle</i> 3-9; 24-30; 76-90; 127-157; 182-205; 206-225; 332-358; 404-410; 444-452.
	Aug. 31	Lecture/Discussion: Darwin cont.	
	Sept. 5	Labor Day (No Class)	
	Sept. 7	Activity: Finches (Genz)	
	Sept. 12	Lecture: Natural Selection (Genz)	

The Atomic Age	Sept. 14	Lecture: Feynman & The Manhattan Project (Genz)	Selected excerpts <i>(The Pleasure of Finding Things Out (Chs 1,3,6)The Meaning of It All)</i>
	Sept. 19	Lecture: Hiroshima (Miller)	<i>Hiroshima</i>
	Sept. 21	Activity: Time Tracking, Innovation of the Bomb	
	Sept. 26	Lecture/Discussion: The Atomic Age (Genz/Miller)	
DNA: Discovery, Gender, and Controversy	Sept. 28	Lecture: DNA (Genz)	<i>The Double Helix</i> Watson and Crick (1953)
	Oct. 3	Demonstration: DNA Extraction (Genz)	
	Oct. 5	Lecture: Rosalind Franklin (Miller)	
	Oct. 10	Discussion	
Scientific Accuracy in Contemporary Films	Oct. 12	Science and Film: <i>Her</i>	<i>Lab Coats &amp; Hollywood</i> Ch 1, 2, 4, 5, 7, 9 Feynman, "Computing Machines" Ch 2 of <i>FTO</i>
	Oct. 17	<i>Her</i> cont.	Watch Kurzweil TED Talk
	Oct. 19	Lecture: Computer Technology & Neurobiology (Genz)	
	Oct. 24	Lecture: Humans & Technology (Miller)	
	Oct. 26	Discussion: Humans as technology	
Happy Halloween!	Oct. 31	Blood Transfusions and Medical Innovators (Miller)	Selected excerpts: Charles Drew and William Harvey
Food Innovation and GMOs	Nov. 2	Lecture: GMOs in Agriculture (Genz)	<i>The End of Plenty</i> 1,3,6,8,12
	Nov. 7	Activity: "Superfoods"	Watch Agriculture TED Talk
	Nov. 9	Discussion: Genetic Technology	
Final Overview	Nov. 14	Lecture: Literary research (Miller)	
	Nov. 16	Lecture: Scientific research (Genz)	
	Nov. 21-23	Thanksgiving break (No Class)	
	Nov. 28	Student-Led Discussions	
	Nov. 30	Student-Led Discussions	
	<b>Dec. 7</b>	<b>FINAL EXAM (08:00-10:00)</b>	

### Assignment Deadlines:

Written Assignments: Turn in a HARD COPY in class	
Lab Report 1 (Air pump)	Aug. 22
Paper 1	Sept. 14
Paper 2	Sept. 28
Movie Science Analysis	Oct. 26
Lab Report 2 (Superfoods)	Nov. 9
Paper 3	Nov. 28

Quizzes (CourseDen) 10-15 questions each	
Quiz 1 (Newton)	Aug. 29
Quiz 2 (Darwin)	Sept. 14
Quiz 3 (Atomic Age)	Sept. 28
Quiz 4 (DNA)	Oct. 12
Quiz 5 (Biotechnology)	Nov. 9

You can rewrite any ONE paper for a higher grade. This includes the lab reports and the mini-papers, but not the movie science analysis. The deadline for this optional re-write is Nov. 16.

### Question prompts for mini-papers: (2-3 pp)

You will write three mini-papers. Each one will offer an in-depth exploration of one or more of the following questions.

For each, you will answer the question and explain why the topic is significant, using specific examples (and quotations) from our class readings.

- Where are the power and money in this text?
- Whose reputation is at stake?
- What is the messy data and the clean science?
- What is the difference between the person of the scientist and the persona defined by their work?
- Who is the work done for and to whom is it targeted?
- How would you define the creation, production, and transmission of scientific work?
- Who plants the seed of an idea vs who reaps its harvest?