

HIST 30805: History of Life Sciences

Fall 2023 – Tuesdays and Thursdays, 4:30-5:45 pm – University Hall 201



Insulin Action, 2016, illustration by David Goodsell, RCSB Protein Data Bank. doi: 10.2210/rcsb_pdb/goodsell-gallery-014

Professor: Michelle LaBonte, PhD
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Office Hours: Sign up on [Calendly](#) or email for a different time

Course Description

This course will examine the development of life sciences from 1750 to the present, introducing students to critical problems related to biology and society through the study of primary and secondary sources. The "life sciences" include all the sciences that deal with life as an organic entity. A prominent theme in this historical treatment is the impact of social and political ideas on the life sciences. With a focus on biomedicine, topics will include classification, physiology, evolution, genetics, eugenics, cell and molecular biology, embryology and reproductive technologies, health activism, gene therapy, and gender and race in science. Students will develop crucial skills in the interpretation of primary and secondary sources, research, analysis, and presentation. 3 credit hours. CRN: 21110.

Learning Outcomes

By the end of this course, you should be able to understand how the life sciences have been shaped by social, political, and cultural factors; place debates about the life sciences in historical context; identify and analyze primary and secondary sources; and gain presentation skills.

Course Requirements and Assignments

Participation: Your participation grade will be calculated based on your engagement in class. There are many ways to participate, including being attentive and focused during lecture, taking an active role in small group activities, responding to questions posed by the professor, asking your own questions during class, and listening to and engaging with the ideas expressed by your peers. Careful reading/listening/viewing of the assigned sources will be essential to fully participate in class. That being said, I don't expect you to come to lecture having completely grasped all the material, and I encourage you to speak up when you are uncertain about an author's argument or a course concept. If you find it challenging to participate during class, please reach out to me so we can develop a plan. I am happy to work with you!

Response Questions: For each class session with assigned readings/sources, you will be asked to submit one question about the assigned sources. Response questions allow you the opportunity to demonstrate your engagement with the assigned primary and secondary sources before each class. To come up with your question, you might think about what you found most interesting, surprising, or troubling about the sources. The question you pose should demonstrate your engagement with the assigned sources and ideally be conducive to class discussion. Please limit your question to no more than 50 words. Response questions are **due by noon on the day of each class session with assigned sources**. **Late response questions will not be accepted.** There are a total of 18 class sessions with assigned sources, and you need to submit a total of 16 questions, meaning that you can skip 2 questions with no penalty. Grades will be determined by your top 16 response questions. You will work independently on your response questions. There will be no response questions due on days that we don't have assigned sources.

Podcast: For the final podcast assignment, you will build on your skills from the course to make a historical argument on a topic related to the history of life sciences. No prior podcasting knowledge is required or assumed, and you will receive detailed guidance on all aspects of the project. This assignment is an opportunity for you to learn more about a topic that you are especially interested in. The podcast should be 10-12 minutes in length and will be **due on Tuesday, December 12 at noon**. To provide you with guidance and feedback before submitting the podcast, you will also be asked to turn in three additional assignments leading up to the final podcast, as described below.

- *Podcast Assignment #1 (Primary Source Analysis):* **due Friday, September 15 at noon**
Identify two potential topics for your final podcast. For each topic, identify and analyze one relevant primary source AND upload the source as a PDF on Brightspace. Additional details about this assignment, including an assignment template, is available on Brightspace. Your submission should be 500-600 words (excluding the sources).
- *Podcast Assignment #2 (Secondary Source Analysis):* **due Friday, October 20 at noon**
Select a topic for your final podcast and identify and analyze two relevant secondary

sources written by historians. Each secondary source should be an article in a historical academic journal (such as the Journal of the History of Biology) or a book chapter in an academic press. You should also upload PDFs of the two sources on Brightspace.

Additional details about this assignment, including an assignment template, is available on Brightspace. Your submission should be 500-600 words (excluding the sources).

- *Podcast Assignment #3 (Podcast Proposal)*: **due Wednesday, November 22 at noon**
For the third podcast assignment, you will provide (A) a 2-minute audio .mp3 clip of the beginning of your draft podcast and (B) a 500–600-word written document outlining your plans for the final podcast. The written document should state the historical argument you will make, how you will use primary and secondary sources to support your argument, and the planned structure of your podcast. Additional details about this assignment, including an assignment template, is available on Brightspace.

Assignments and Grading

Assignments:		Grade Scale:	
Participation	15%	A 93-100	C+ 78-79
Response Questions	15%	A- 92-90	C 73-77
Podcast Assignment #1	15%	B+ 88-89	C- 72-70
Podcast Assignment #2	15%	B 83-87	D 60-69
Podcast Assignment #3	15%	B- 82-80	F 0-59
Final Podcast	25%		

Additional Information: I am happy to discuss your grades with you at any point during office hours, but grades will not be discussed over email. You must complete all assignments, including participation, to pass the class. Extra credit will not be offered. To ensure an open atmosphere in the class, please do not post any images, videos, chats, or other material from class without written permission from the instructor and each student in the class. Posting of any such material from class is grounds for an automatic F for the semester and referral to the Dean of Student’s Office.

Course Schedule

Week 1 – Introduction and Classification of Life

Tuesday, August 22: Introduction to *History of Life Sciences*

- No readings or assignments

Thursday, August 24: Natural History and Plant Classification

- No readings or assignments

Week 2 – Classification of Disease

Tuesday, August 29: From Plant Classification to Disease Classification

- Lie, A. K., & Greene, J. A. (2020). From Ariadne’s Thread to the Labyrinth Itself — Nosology and the Infrastructure of Modern Medicine. *The New England Journal of Medicine*, 382(13), 1273–1277.

- **Response Question due at noon**

Thursday, August 31: Disease without Classification

- Brea, Jennifer. *TED Talk: What Happens When You Have a Disease Doctor's Can't Diagnose?* 2017. Link: <https://www.youtube.com/watch?v=Fb3yp4uJhq0> (17 min)
- Viridi, Jaipreet, with artwork by Anne Howeson. “Thousands of Years of Women’s Pain.” *Wellcome Collection*. August 1, 2019.
- **Response Question due at noon**

Week 3 – Physiology

Tuesday, September 5: The Function of Living Things

- Duffin, Jacalyn. (2021). *History of Medicine: A Scandalously Short Introduction* (Third edition). University of Toronto Press. Chapter 3. Interrogating Life: History of Physiology. Pages 39-64.
- **Response Question due at noon**

Thursday, September 7: The Use of Animals in Research

- Logan, Louise. “Drawing Species Lines: Sensation and Empathy in Illustrations of Vivisection in the Illustrated Police News.” *Victorian Periodicals Review* 53.1 (2020): 13–33.
- **Response Question due at noon**

Week 4 – Locating and Analyzing Primary Sources

Tuesday, September 12: Individual or Small Group Meetings with Professor

- No readings or assignments

Thursday, September 14: Individual or Small Group Meetings with Professor

- No readings or assignments

Podcast Assignment #1 due at noon on Friday, September 15

Week 5 – Evolutionary Biology

Tuesday, September 19: Darwin and Evolution by Natural Selection

- Farber, Paul Lawrence. 2000. *Finding Order in Nature: The Naturalist Tradition from Linnaeus to E.O. Wilson*, Johns Hopkins University Press. Chapter 5: Darwin’s Synthesis: The Theory of Evolution, 1830-1882. Pages 56-71.
- Letter from E. A. Darwin to Charles Darwin [8 March 1825]. Darwin Correspondence Project, “Letter no. 14,” <https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-14.xml>. Also published in *The Correspondence of Charles Darwin*, vol. 1.
- Letter from Charles Darwin to Caroline Darwin 6 January 1826. Darwin Correspondence Project, “Letter no. 20,” <https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-20.xml>. Also published in *The Correspondence of Charles Darwin*, vol. 1.
- **Response Question due at noon**

Thursday, September 21: The Darwin Correspondence Project

- You will have the opportunity to select your own source for today. Please choose one letter from the Darwin Correspondence Project (<https://www.darwinproject.ac.uk>), read it, and be prepared to discuss it in class. The letter must be written by someone other than Charles Darwin.
- Response Question due at noon

Week 6 – Inheritance and Eugenics

Tuesday, September 26: Inheritance and the Modern Synthesis

- Rheinberger, H.-J., Müller-Wille, S., & Bostanci, A. (2017). *The Gene: From Genetics to Postgenomics*. The University of Chicago Press. Chapter 2: The Legacy of the Nineteenth Century. Pages 11-22.
- Response Question due at noon

Thursday, September 28: Eugenics

- Upholds Operating on Feeble-Minded. *Chattanooga Daily Times* (Chattanooga, Tennessee). May 5, 1927.
- Clare, Eli, *Brilliant Imperfection: Grappling with Cure*, Duke University Press. 2017. Chapter 7: At the Center of Cure. Pages 103-112.
- Response Question due at noon

Week 7 – Genetics and Chromosomes

Tuesday, October 3: Flies, Genes, and Chromosomes

- Richmond, Marsha L. Opportunities for Women in Early Genetics. *Nature Reviews Genetics*. (2007) 8: 897-902.
- Letter from Thomas Hunt Morgan to Otto L. Mohr, 1919 March 6, Thomas Hunt Morgan papers, ca. 1919-1947, Mss.B.M824, American Philosophical Society.
- Letter from Thomas Hunt Morgan to Otto L. Mohr, 1921 May 4, Thomas Hunt Morgan papers, ca. 1919-1947, Mss.B.M824, American Philosophical Society.
- Letter from Thomas Hunt Morgan to Otto L. Mohr, 1921 May 31, Thomas Hunt Morgan papers, ca. 1919-1947, Mss.B.M824, American Philosophical Society.
- Response Question due at noon

Thursday, October 5: Human Cytogenetics

- Chadarevian, S. de. (2020). *Heredity Under the Microscope: Chromosomes and the Study of the Human Genome*. The University of Chicago Press. Introduction. Pages 1-12.
- Response Question due at noon

Week 8 – Podcasting Workshop

Tuesday, October 10: No Class, October break

Thursday, October 12: Sound Recording and Editing with Audacity

- No readings, work on Podcast Assignment #2

Week 9 – Molecular Biology

Tuesday, October 17: DNA Structure

- Watson, James D. et al. *The Annotated and Illustrated Double Helix*. 1st Simon & Schuster hardcover ed. New York: Simon & Schuster, 2012. Pages 1-14.
- Sullivan, Will. “What We’re Still Learning About Rosalind Franklin’s Unheralded Brilliance.” *Smithsonian Magazine*. April 28, 2023.
- **Response Question due at noon**

Thursday, October 19: The Genetic Code

- No readings or assignment, work on Podcast Assignment #2

Podcast Assignment #2 due at noon on Friday, October 20

Week 10 – Embryology and Reproductive Technologies

Tuesday, October 24: Assisted Reproduction

- Ronner, Wanda & Marsh, Margaret. (2019). *The Pursuit of Parenthood: Reproductive Technology from Test-tube Babies to Uterus Transplants*. Johns Hopkins University Press. Chapter 1: Test-tube Babies Just Around the Corner. Pages 11-30.
- Harris-Perry, Melissa. “The Realities of Race in Assisted Reproduction.” *The Takeaway*. November 17, 2022. (23 min audio recording) URL: <https://www.wnycstudios.org/podcasts/takeaway/segments/realities-race-assisted-reproduction>
- **Response Question due at noon**

Thursday, October 26: Preimplantation Genetic Diagnosis

- Mundy, Liza. “Life After Henry” *The Idaho Statesman*, Apr 12, 2010
- **Response Question due at noon**

Week 11 – Molecular Genetics and Identity

Tuesday, October 31: Genetic Testing and Race

- Roberts, Dorothy. *Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-First Century*. 2011. The New Press. Chapter 4: Medical Stereotyping, Pages 81-103.
- **Response Question due at noon**

Thursday, November 2: Direct-to-Consumer Genetic Testing

- TallBear, Kimberly. 2008. “Native-American-DNA.com: In Search of Native American Race and Tribe.” In Koenig, Barbara A., Lee, Sandra Soo-Jin, and Richardson, Sarah S. *Revisiting Race in a Genomic Age*. Rutgers University Press. Pages 235-250.
- **Response Question due at noon**

Week 12 – Final Project Workshop

Tuesday, November 7: Small Group Activity

- No readings. Please come prepared to discuss your plans for your final podcast, including any challenges you might be having.

Thursday, November 9: No Class, Professor at Conference

Week 13 – Health Activism

Tuesday, November 14: Phage Therapy Activism

- Salt in My Soul Documentary, Director: Will Battersby, Distributor: Giant Pictures, Production Co: 3 Arts Entertainment, Reno Productions (1 hr 36 min). Access available through Kanopy: <https://www.kanopy.com/en/purdue/video/11956264>
- **Response Question due at noon**

Thursday, November 16: AIDS Activism

- No readings, work on Podcast Assignment #3

Week 14 – Final Project Guidance

Tuesday, November 21: Optional Individual or Small Group Meetings with Professor

- No readings, work on Podcast Assignment #3

Podcast Assignment #3 due at noon on Wednesday, November 22

Thursday, November 23: No Class, Thanksgiving Break

Week 15 – Gene Therapy

Tuesday, November 28: Early Gene Therapies

- Wailoo, Keith and Pemberton, Stephen. 2006. *The Troubled Dream of Genetic Medicine: Ethnicity and Innovation in Tay-Sachs, Cystic Fibrosis, and Sickle Cell Disease*. The Johns Hopkins University Press. Chapter 2: Risky Business in White America: Gene Therapy and Other Ventures in the Treatment of Cystic Fibrosis. Pages 61-67 & 91-110.
- **Response Question due at noon**

Thursday, November 30: Gene Therapy Futures

- Ledford, Heidi. 2015. “CRISPR, The Disruptor,” *Nature*. 522: 20-24.
- **Response Question due at noon**

Week 16 – Podcast Clip Presentations

Tuesday, December 5: Group #1 Presentations

- No readings, all students attend class

Thursday, December 7: Group #2 Presentations

- No readings, all students attend class

Final Podcast Assignment due at noon on Tuesday, December 12

Course Policies and Expectations

My commitment to you: You should expect me to be engaged and available. Please email me and come to office hours to discuss any course-related matter. I am also happy to serve as a

support for you on other matters, such as your academic plans, or discuss any challenges that you may be dealing with. If I don't have expertise in the area you would like help with, I will do my best to point you in the right direction.

Office hours: I encourage you to use [Calendly](#) to schedule a time to meet with me during regular office hours or email me to schedule another time. If you need to cancel a meeting, please do so at least 24 hours in advance. I will be scheduling brief meetings with all students at the start of the semester so I can begin to get to know you.

Email policy: Expect a timely (but not immediate) response to emails. I plan to respond to email within 24 hours during weekdays. I also ask you to respond to any course-related emails that require a reply within 24 hours during weekdays. When emailing, please include HIST 30805 in the subject line.

Electronic devices: Laptops and tablets are allowed in class, but please limit their use to tasks directly related to the class discussion. Please avoid cell phone use during class. Any non-course-related electronic use during class will affect your participation grade.

Assignment feedback policy: While I am available and eager to discuss your final podcast and other assignments, I cannot review draft assignments before you submit them. You may show me an outline or otherwise brainstorm ideas with me during office hours. In addition, we can discuss how best to apply my feedback on prior assignments to upcoming assignments.

Attendance policy: This course follows the [University Academic Regulations regarding class attendance](#), which state that students are expected to be present for every meeting of the classes in which they are enrolled. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, you should inform me of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification is not possible, contact me as soon as possible by email. For cases that fall under the University excused absence regulations – grief/bereavement, military service, jury duty, parenting leave, or emergent medical care -- you or your representative go to the [Office of the Dean of Students \(ODOS\) website](#) to complete appropriate request forms. ODOS reviews these requests and, if granted, will notify all your instructors.

Late work policy: Please let me know if you are struggling to complete work so we can brainstorm strategies to effectively manage the course workload. I am here to help! Late assignments will be accepted without penalty ONLY if you have a documented emergency. In the event of an unexcused late assignment, your grade will be lowered by 10% each day. However, **response questions cannot be accepted late.**

Accessible education: I'm committed to making the course accessible to all students. Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone at 765-494-1247.

Citation practices: Please cite any sources that you use in the preparation of assignments for this course.

Academic Honesty: All individual assignments submitted for this course are expected to be your own, including your own research and writing. Incidents of academic misconduct in this course will be addressed by the course instructor and referred to the Office of Student Rights and Responsibilities (OSRR) for review at the university level. Any violation of course policies as it relates to academic integrity will result minimally in a failing or zero grade for that particular assignment, and at the instructor's discretion may result in a failing grade for the course. In addition, all incidents of academic misconduct will be forwarded to OSRR, where university penalties, including removal from the university, may be considered.

Generative AI Policy: Students who use AI-generated writing for any portion of their written assignments will be deemed in violation of the academic integrity expectations for this course. Violations can include a failing grade for the course and restrictions from further class attendance. All suspected incidents of academic dishonesty will also be referred to the Office of Student Rights and Responsibilities for further review of the student's status with the University, which may include being separated from the University.

Copyright Policy: See the University Policies and Statements section of Brightspace for guidance on Use of Copyrighted Materials. Effective learning environments provide opportunities for students to reflect, explore new ideas, post opinions openly, and have the freedom to change those opinions over time. Students and instructors are the authors of the works they create in the learning environment. As authors, they own the copyright in their works subject only to the university's right to use those works for educational purposes. Students may not copy, reproduce, or post to any other outlet (e.g., YouTube, Facebook, or other open media sources or websites) any work in which they are not the sole or joint author or have not obtained the permission of the author(s).

Resources and Additional Information

Mental Health and Wellness Support:

- If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [WellTrack](#). Sign in and find information and tools at your fingertips, available to you at any time.
- If you need support and information about options and resources, please contact or see the [Office of the Dean of Students](#). Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.
- If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a [Purdue Wellness Coach at RecWell](#). Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.
- If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know

is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours. The [CAPS website](#) also offers resources specific to situations such as COVID-19.

Academic Support: The [Academic Success Center](#), located in Wiley Hall, Room C215, provides a variety of proactive, practical and approachable academic support services for undergraduate students.

Library Support: Visit [Ask a Librarian](#) to connect with helpful resources and services provided by the Purdue Libraries and School of Information Studies for course assignments and projects.

Brightspace: Access the course via Purdue's [Brightspace](#) learning management system. Begin with the Start Here tab, which offers further insight to the course and how you can be successful in it. It is strongly suggested that you explore and become familiar not only with the site navigation, but also with content and resources available for this course. See the Student Services widget on the campus homepage for resources such as Technology Help, Academic Help, Campus Resources, and Protect Purdue.

Nondiscrimination Statement: Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course Brightspace under University Policies and Statements.

Basic Needs Security: Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday.

Emergency Preparation: In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis. A link to Purdue's Information on [Emergency Preparation and Planning](#) is located on our Brightspace under "University Policies and Statements." This website covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. I encourage you to download and review the *Emergency Preparedness for Classrooms* document ([PDF](#)) or ([Word](#)).

The first day of class, I will review the Emergency Preparedness plan for our specific classroom, following Purdue's required [Emergency Preparedness Briefing](#).

Academic Integrity: Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies and Statements.