History of Science/Medical History and Bioethics 333: History of Modern Biology
Fall 2015
Prof. Lynn K. Nyhart
TR 9:30-10:45 in 2104 Chamberlin Hall

Office Hrs: Mondays 1:30-3 pm (209 University Club), Tuesdays 10:45-11:45 (226 Bradley Memorial Bldg), and by appointment.
lknyhart@wisc.edu

As many of you have probably experienced, "biology" is a very broad category covering many different ways of knowing living nature. This year, we will survey four different traditions in history of the life sciences since the 18th century--natural historical and agricultural, biomedical and biomolecular. Focusing on some "classics" and "game-changers" in the history of biology, we will seek to put them in their broader scientific and social contexts, and to connect them to the present.

Learning outcomes: In successfully completing this course, students will be able to:

- identify key events, people, ideas, practices, and institutions in the history of biology;
- read a professional scientific paper in biology and connect it to larger historical themes and trends;
- ask analytical questions about relationships between intellectual developments in the history of biology and their social, political, economic, and cultural contexts;
- identify the information and conceptual tools needed to answer those questions;
- synthesize information from diverse sources into a coherent historical argument.

General requirements: Because this course revolves in good part around discussion, its success depends on its participants' having read the material carefully and being willing to talk about it. We will read both 'primary sources' (scientific writings by participants) and 'secondary sources' (writings by historians and scientists reflecting on and analyzing what happened).

Undergraduate requirements:

30% Class participation. Includes: preparing 8 questions/comments for class and 3 analytical discussion pieces; **see addendum** on class participation at the end of the syllabus. Attendance is mandatory; participation means talking intelligently based on your active engagement with readings, lecture material, and classmates).
20% First take-home essay (1200-1500 words, due Oct. 21)
20% Second take-home essay (1200-1500 words, due Nov. 25)
30% Final take-home synthesis paper (1800-2400 words, due Dec. 22).

Honors: Students taking the course for Honors credit will undertake a research project in addition to the regular requirements of the class. This project will require additional historical research in primary sources, an oral presentation, and a written essay of 2100-2700 words. See separate Honors Syllabus.

Graduate writing requirements: 20+ pages of scholarly prose (4-5 book reviews, a bibliographic or historiographical essay to prepare for prelims, a research paper, a dissertation proposal) as determined by your individual needs. Graduate students will *meet separately* from undergrads (at a time TBA) to discuss additional readings from a historiographic perspective.

Readings:
-Beth Shapiro, *How to Clone a Mammoth: The Science of De-Extinction* (Princeton University Press, 2015). Available for purchase at *A Room of One's Own Books* at 315 W. Gorham St., just off of State Street. It is brand-new, sadly not yet out in paper.
-HS/MHB 333 Course Reader, available from the Social Science Copy Center (unbound), for $39.85 (cash or check, made out to Social Science Copy Center). It is sizable; probably the best way to handle it is to buy an accordion folder or two to keep it in, and pull out each week's readings to bring to class separately.
-a few readings (marked with a *) are available online; the link is given in the syllabus and also on Learn@UW.

A copy of all print readings will be available on 3-hour reserve at College Library.

Course Schedule

Sept. 3 (R): Introduction: Biology in Context(s)
Michael Specter, "Seeds of Doubt," *The New Yorker*, Aug. 25, 2014, at http://www.newyorker.com/magazine/2014/08/25/seeds-of-doubt
If you have trouble accessing this directly, you can get it through the UW library's New Yorker subscription.

Part I: Biology in the Field: Natural History and Agriculture/Abundance and Extinction

Sept. 8: Seeds, Commerce, and Classification
According to Margócsy, what was the role of seed and other specimen exchange in the development of taxonomy? How does this argument compare/contrast to the goals and methods described by Linnaeus?

Daniel Margócsy, "Chapter 2: Shipping Costs, the Exchange of Specimens, and the Development of Taxonomy," in idem, *Commercial Visions: Science, Trade, and Visual Culture in the Dutch Golden Age* (Chicago: University of Chicago Press, 2014), 29-73.
Carl von Linné, *Philosophia Botanica*, translated by Stephen Freer, pp. 219-226, 328-335.

Sept. 10: Voyaging and Natural History
[note: the expedition Péron wrote about is often called the "Baudin expedition" after the Captain, Nicolas Baudin, who died on the return leg of the voyage.]

What do these readings tell us about the natural history in relation to state-sponsored European voyaging in the late 18th and very early 19th centuries? What were the aims of Baudin's voyage? What sort of "natural history" was undertaken in pursuit of its goals?

François Péron, *A Voyage of Discovery to the Southern Hemisphere, Performed by the Order of the Emperor Napoleon, During the Years 1801, 1802, 1803, and 1804* (English Translation, London: Richard Phillips, 1809): "Substance of the Report made to the French Government by the Imperial Institute, on the Voyage of Discovery to the Southern Hemisphere," iii-viii, and Chapter 1, 1-15.

Appendix I, "List of Provisions," and Appendix II, "Navy Supplies and Refreshments," from *The Journal of Post Captain Nicoals Baudin, Commander-in-Chief of the Corvettes Géographe and Naturaliste, Assigned by Order of the Government to a Voyage of Discovery*, translated from the French by Christine Cornell (Adelaide: Libraries Board of South Australia, 1974), 571-572.

Stephanie Pfennigwerth, "New Creatures Made Known: Some Animal Histories of the Baudin Expedition," Chapter 6 in *Discovery and Empire: The French in the South Seas*, edited by John West-Tooby (University of Adelaide Press, 2013), 171-213.

Sept. 15: Extinction and Human Agency

What arguments have been posed for why humans should care about extinction? How have they changed over time? How have they persisted? What does it mean now that we can think about "de-extinction"?

Mark Barrow, *Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology* (Chicago: University of Chicago Press, 2009), Introduction and Chapter 1, pp. 1-13, 361-364.

Beth Shapiro, *How to Clone a Mammoth: The Science of De-Extinction* (Princeton: Princeton University Press, 2015), Chapters 1 and 2, 1-50.

Sept. 17: Extinction and the Order of Life

How did the concept of extinction enter natural history? Why did people such as Jefferson resist it, and with what arguments did they do so? On what grounds did Cuvier argue that extinction was part of nature's order?How did Lamarck avoid extinction in his vision of the order of nature?

Mark Barrow, *Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology* (Chicago: University of Chicago Press, 2009), Introduction and Chapter 1, pp. 13-46, 364-371.

Georges Cuvier, "Living and Fossil Elephants," and "The Megatherium from South America," in *Georges Cuvier, Fossil Bones, and Geological Catastrophes*, edited and translated by Martin J. S. Rudwick (Chicago: University of Chicago Press, 1997), 13-32.

Lamarck, *Zoological Philosophy* (1809), translated by Hugh Elliott (London: MacMillan, 1914), Table of Contents, 1-8,106-133.

Sept. 22: Charles Darwin, Voyager-Naturalist, and T. R. Malthus, Political Economist

Two events were crucial to the development of Darwin's theory of evolution by natural selection: the ***Beagle*** *voyage and* ***An Essay on Population*** *by the political economist Thomas Robert Malthus. What did Darwin learn from each? What do we learn*

about the interactions of natural history and British political economy (in theory and practice) from both of these readings? Finally, what is the larger point of Young's article? How does he seek to make Darwin's debt to Malthus relevant to today?

Darwin, *Journal of Researches* [Voyage of the Beagle], 2nd edition, 1845, 19-26 (top), 81-89), 376-402.

Robert M. Young, "Malthus on Man: In Animals No Moral Restraint," *Science as Culture*, 1999, 8(2): 189-208.

Sept. 24: The *Origin of Species*: Game-changer?

How does Darwin set up his argument with the first words of his book? What does he mean when he says that "Nature" selects? What does his famous "tree" diagram represent?

Charles Darwin, *On the Origin of Species* (London: John Murray, 1859; reprint ed. Harvard University Press, 1964), 1-6, 80-96, 109-130.

Sept. 29: Mendel in the Breeding Tradition

Before you read the readings below, think back over what you know about Gregor Mendel's biography and what his experiments were about. Jot down some notes on what you know before you start. As you read, what changes about what you know about Mendel?

Mendel's paper itself is very detailed, but it is worth taking a careful look at. Make sure you get to his "Concluding remarks."

Vitezslav Orel and Roger J. Wood, "Essence and Origin of Mendel's Discovery," *Comptes Rendus Academie des Sciences Paris, Sciences de la vie*, 2000, 323: 1037-1041.

Robin Marantz Henig, *The Monk in the Garden* (New York: Houghton Mifflin, 2000), 69-93, 132-147, 269-70, 272-3.

Gregor Mendel, "Experiments on Plant Hybridization" (1866, translated by C. T. Druery), Appendix I in William E. Castle, *Genetics and Eugenics*, 2nd edition (Cambridge: Harvard University Press, 1921), 313-353.

Oct. 1: Genetics, Eugenics, and Agricultural Reform in early 20th-Century America

What was it about Mendelian genetics that made it appeal to agricultural breeders and eugenicists in the U.S. in the early twentieth century? How might these appeals have shaped the further development of genetics?

Barbara Kimmelman, "The American Breeders' Association: Genetics and Eugenics in an Agricultural Context, 1903-13," *Social Studies of Science*, 1983, 13:163-204.

Michael Guyer, *Being Well-Born: An Introduction to Heredity and Eugenics* (Bobbs-Merrill, 1916, 2nd ed., 1927), front matter, 412-441.

Oct. 6: The Evolutionary Synthesis

What was synthesized in the "Evolutionary Synthesis"? What was left out?

Julian Huxley, *Evolution: The Modern Synthesis* (New York: Harper, 1942), 13-46.

Stephen Jay Gould, *The Structure of Evolutionary Theory* (Belknap/Harvard, 2002), 503-508, 518-21, 524-28, 531-43.

Oct. 8: Race, Caste, and Population Genetics

Traditionally, the literature about the evolutionary synthesis and its relation to post-World War II arguments about race were focused almost exclusively on the U.S. context. What new questions are raised by the broader international perspective represented by these readings?

Vanderlei Sebastião de Souza, Ricardo Ventura Santos, "The Emergence of Human Population Genetics and Narratives about the Formation of the Brazilian Nation (1950-1960)," *Studies in History and Philosophy of Biological and Biomedical Sciences* 2014, 47: 97-107

Theodozius Dobzhansky, "Chapter 9: Polymorphism, Class, and Caste," in idem, *Mankind Evolving: The Evolution of the Human Species* (NY: Bantam Books, 1962), 230-265.

Oct. 13: Sociobiology: A "New Synthesis"?

Why did E. O. Wilson call sociobiology "the new synthesis"? Synthesis of what? Why was it controversial?

Edward O. Wilson, *Sociobiology: The New Synthesis* (Cambridge: Belknap/Harvard, 1975), Chapter 1, "The Morality of the Gene" (pp. 3-6); Ch. 14: "Roles and Castes" (selections: pp. 298-313, 554-555).

Richard Lewontin, Steven Rose, and Leon J. Kamin, Chapter 9, "Sociobiology: The Total Synthesis" pp. in idem, *Not in Our Genes: Biology, Ideology, and Human Nature* (NY: Pantheon, 1984), 233-264.

Receive Part I Essay Question

Oct. 15: Visit to Memorial Library Special Collections, 9th Floor, Memorial Library

Part II: Biomedicine, Molecular Biology

Oct. 20: Intro to Part II, and The Life Sciences in the Medical Context in the Nineteenth Century

What deep historical background would you like to know about for understanding how we got to the sort of science done today by Yoshihiro Kawaoka?

Mike Magnuson, "The Man Who Could Destroy the World," *Popular Mechanics*, Nov. 2014, 92-97, 112. (For color images, see version on L@UW).

WEDNESDAY, Oct. 21: Part 1 Essay due by 5 pm in the Learn@UW Dropbox.

Oct. 22: Making Biomedicine Scientific 1: Animal Experimentation

According to Bernard, what methods would make biomedicine truly scientific? What assumptions about science and medicine are built into this argument?

Claude Bernard, *Introduction to the Study of Experimental Medicine* (1865), translated by Henry Copley Greene (New York: Dover Publications, 1957), 48-57, 87-105, 151-171.

Oct. 27: Making Biomedicine Scientific 2: The Microscope

On what grounds did the German physician Rudolf Virchow claim that the microscopic study of cells was the key to making biomedicine truly scientific?What did it mean to say that cells, rather than, say, people, exhibit pathology? How did this change notions of health, disease, biological causation, and approaches to healing?

Laura Otis, "Virchow and Koch: The Cell and the Self in the Age of Miasmas and Microbes" in idem, *Membranes: Metaphors of Invasion in Nineteenth-Century Literature, Science, and Politics* (Baltimore, Johns Hopkins Press, 1999), 8-36, 175-9.

Rudolf Virchow, "Cellular Pathology" (1855), idem, *Disease, Life, and Man: Selected Essays*, translated and edited by Lelland J. Rather (Stanford: Stanford University Press, 1958)

Oct. 29: Making Biomedicine Scientific 3: Microbes

What characteristics of a "scientific approach" to studying disease did Robert Koch evidence in his study of the etiology (causes) of tuberculosis? How does this compare to the scientific approaches of Virchow and Bernard?What have been the consequences of Koch's approach to disease causation and prevention in the subsequent history of medicine, according to Barnes and Kaufmann?Read Wells's short story for a sense of how microbes could enter popular culture beyond the medical realm.

Robert Koch, "The Etiology of Tuberculosis" (1882), translated and edited by Thomas D. Brock in *Milestones in Microbiology* (London: Prentice Hall International, 1961), 109-115.

David Barnes, "Historical Perspectives on the Etiology of Tuberculosis," *Microbes and Infection*, 2000, 2: 431-440.

Stefan H. E. Kaufmann, "A Short History of Robert Koch's Fight Against Tuberculosis: Those Who Do Not Remember the Past Are Condemned to Repeat It," *Tuberculosis*, 2003, 83: 86-90.

H. G. Wells, "The Stolen Bacillus" (1894), reprinted in idem, *The Stolen Bacillus and Other Incidents* (London: MacMillan, 1904), 1-16.

Nov. 3: Epidemiology and the Great War

How were epidemic disease and the understanding of it intertwined with World War I? How was epidemiology advanced through the Great War and the military? How does the story of the 1918 flu epidemic in Brazil and the search for its causes compare/contrast to that undertaken in the U.S.?

John M. Barry, *The Great Influenza: The Story of the Deadliest Pandemic in History* (New York: Penguin, 2005), 119-121, 146-66, 177-93, 288-296, 401-427.

Liane Maria Bertucci, "Spanish Flu in Brazil: Searching for Causes during the Epidemic Horror," in *The Spanish Influenza Pandemic of 1918-1919: Perspectives from the Iberian Peninsula and the Americas*, edited by María-Isabel Porras-Gallo and Ryan A. Davis (Rochester, NY: University of Rochester Press, 2014), 39-55.

Nov. 5: Molecularizing the Gene

Oswald Avery is our hinge-man as we shift focus from epidemiology to molecular biology. How do Deichmann and Sapp situate Avery within the larger history of the

molecular study of heredity? What do they emphasize, what do they downplay, as compared to Barry?

What did Avery et al. mean by "the transforming principle"? By what combination of experiment and reasoning did they identify this principle with DNA?

Ute Deichmann, "Challenging the Protein Dogma of the Gene: Oswald T. Avery, a Revolutionary Conservative," in *Rebels, Mavericks, and Heretics in Biology*, edited by Oren Harmon and Michael R. Dietrich (New Haven: Yale University Press, 2008), 154-173.

Jan Sapp, "Chapter 16: Conceiving a Master Molecule," in idem *Genesis: The Evolution of Biology* (Oxford; New York: Oxford University Press, 2003), 187-191 **only**.

Oswald Avery, Colin MacLeod, and Maclyn McCarty, "Studies on the Chemical Nature of the Substance Inducing Transformation of Pneumococcal Types. Induction of Transformation by a Desoxyribonucleic Acid Fraction Isolated from Pneumococcus Type III," *Journal of Experimental Medicine*, 1944, 79:137-158.

Nov. 10: Watson, Crick, and the Double Helix

Sapp provides the classic context in which the discovery of the structure and function of DNA is usually seen. Read it for key background. What are the key findings and claims of Watson and Crick's 1953 papers? How do their methods and presentation differ from Avery's? What different sorts of things do we learn about the discovery and its context from the last reading?

Sapp, *Genesis* (see above), 191-200, 319-322

James D. Watson and Francis Crick, "Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid," *Nature*, 25 April 1953, 737-8.

James D. Watson and Francis Crick, "Genetical Implications of the Structure of Deoxyribonucleic Acid," *Nature*, 30 May 1953, 171: 964-967

Alexander Gann and Jan Witkowski, "The Lost Correspondence of Francis Crick," *Nature*, 30 September 2010, 467: 519-524

Nov. 12: After the Double Helix: Human and Molecular Genetics

The readings for today offer different accounts of what happened after the discovery of the double-helical structure of DNA in 1953: two retrospective oness, by the biologists Crick and Brenner, on the 21st birthday of the discovery, and a historian's account. How does Crick integrate the 1953 discovery into a broader story of "what happened"? According to the historian Comfort, how did medical genetics come to be linked to molecular biology? What developments in the two fields between the mid-1950s and the early 1970s helped bring them together? According to the biologist Brenner, what biological problem areas were demanding the attention of molecular biologists ca. 1974?

Francis Crick, "The Double Helix: A Personal View," *Nature*, 26 April 1974, 248: 766-769.

Nathanial Comfort, "Genetics without Sex," Chapter 7 in idem, *The Science of Human Perfection: How Genes Became the Heart of American Medicine* (New Haven: Yale U. Press, 2012), 200-219.

Sydney Brenner, "New Directions in Molecular Biology," *Nature*, 26 April 1974, 248:785-787.

Nov. 17: The Promise and Threat of Recombinant DNA

What biological, ethical, political, and social issues were raised with the advent of recombinant DNA techniques in the mid-1970s? What was new? what was not?

Comfort, "Genetics without Sex," 219-239, 264-267.

Science for the People, "Biological, Social and Political Issues in Genetic Engineering," pp. 99-126 in David A. Jackson and Stephen P. Stich, eds., *The Recombinant DNA Debate* (Engelwood Cliffs, N.J.: Prentice-Hall, 1979)

Joshua Lederberg, "DNA Splicing: Will Fear Rob Us of Its Benefits?" (1975) reprinted in ibid., pp. 173-180.

Receive Part 2 Essay Assignment

Nov. 19: No meeting: work on midterm essay

Nov. 24: The Industrialization of Recombinant DNA, and Discussion of Unit II

What institutional, cultural, and technical factors allowed the further development of recombinant DNA research beginning in the early 1970s? What were the peculiar cultural features of Cetus Corp. that contributed to its success? How did the foundations laid in the late 1970s and 1980s enable the kind of work that Beth Shapiro now does? What's different about it? What else does it depend on?

Paul Rabinow, Chapter One, "Toward Biotechnology," pp. 19-45 in idem, *Making PCR: A Story of Biotechnology* (Chicago: University of Chicago Press, 1996)

Shapiro, *How to Clone*, Ch. 3, 51-72

WEDNESDAY Nov. 25: Unit II Essay Due

Nov. 26: Thanksgiving: No meeting

Part III: Crossing Boundaries: Recent Biology at the Intersections of Agriculture, Medicine, and Evolutionary Biology

Dec. 1: Introduction to Synthesizing the Traditions

What issues do bioethicists Caplan and Magnus raise about synthesizing life forms? What other issues does Shapiro raise in these chapters, which affect the possibility of "cloning" a mammoth? How does Shapiro combine the traditions we examined in Parts I and II of this course?

Caplan and Magnus, "New Life Forms: New Threats, New Possibilities," *Hastings Center Report,* Nov.-Dec. 2003, p. 7.

Shapiro, *How to Clone*, Chs. 4-8, 73-158.

Dec. 3: Manipulating Species for Food: "Seeds of Doubt" in Context

The first three readings are something of a "he said/she said" discussion of "Seeds of Doubt." You don't need to read every word, but you should get the gist. The reading by Herring provides a different (and notably, earlier) perspective on the whole debate. What does Herring add? Is it possible to analyze the debate without becoming party to it?

Review Specter, "Seeds of Doubt" (first reading in the course)

Vandana Shiva, "Seeds of Truth," at http://vandanashiva.com/?p=105 [Shiva's response to Specter]

New Yorker Editor David Remnick's response to Shiva, Sept. 2, 2014, at http://www.geneticliteracyproject.org/2014/09/02/new-yorker-editor-david-remnick-responds-to-vandana-shiva-criticism-of-michael-specters-profile/

Ronald J. Herring, "Stealth Seeds: Bioproperty, Biosafety, Biopolitics," *Journal of Development Studies*, 2007, 43 (1): 130-157

Dec. 8: Manipulating Species for Medicine: Understanding Infectious Diseases

What have scientists learned from reconstructing the 1918 influenza virus? What social, political, or rhetorical purposes might Taubenberger et al's review article serve? What connections do you see between the study of the 1918 flu and Ebola? How do Watanabe's research strategies reflect the longer biomedical and molecular-biological traditions he is part of?

Tokiko Watanabe et al, "Viral RNA Polymerase Complex Promotes Optimal Growth of 1918 Virus in the Lower Respiratory Tract of Ferrets," *PNAS*, January 13, 2009, 106(2): 587-591.

Jeffrey Taubenberger et al, "Reconstruction of the 1918 Influenza Virus: Unexpected Rewards from the Past," *mBio*, Sept/Oct. 2012, 3(5):e00201-12. doi: 10.1128/mBio.00201-12

Terry Devitt, "Ebola Virus Disarmed by Excising a Single Gene," UW-Madison News, Jan. 21, 2008, http://news.wisc.edu/14634

Kelly April Tyrrell, "In Sierra Leone, A Chance to Learn from Ebola," UW-Madison News, April 23, 2015, http://news.wisc.edu/23702

Dec. 10: Manipulating Species for Diversity: De-Extinction and Re-Wilding

What are the real possibilities of de-extinction and re-wilding? Can we recover past ecosystems and their inhabitants? Why should we (or not)?

Elizabeth Kolbert, "Recall of the Wild," The New Yorker, Dec. 24, 2012, posted at: http://www.newyorker.com/magazine/2012/12/24/recall-of-the-wild

Shapiro, *How to Clone a Mammoth*, chs. 9-11, 159-207.

Dec. 15: last class! Wrap-up

Honors presentations.

Honors papers due Dec. 18 by 5 pm.
Final paper due **Dec. 22 by 4:30 pm**.

Academic Performance and Accommodation:

Essays: Every essay you write should take the form of an argument supporting a thesis. Since all essays are open-book, grading will NOT depend solely or even primarily on the correctness of the facts marshaled for your argument; this correctness is assumed as a base-point. Rather, much of your grade will be based on the persuasive power, sophistication, originality, and succinctness of your argument. (More on this during the course.)

Extensions are only granted if requested before the due date, and only in case of illness or other serious emergency. All extensions will have a definite new due date established. Papers received after the new due date will be subject to late paper penalties.

Late paper policy: any piece of writing that you hand in late without an extension will have the following penalties assessed: a quarter of a grade for every working day late. For example, if the paper on its merits deserves a B, after one day it would receive a B/BC, after two days a BC, after three a BC/C, after four a C. NOTE: LATE FINAL ESSAYS WILL NOT BE ACCEPTED.

Academic Credit and Plagiarism: Students may not copy sentences or ideas from others (including authors, websites, or other students) without giving credit to those sources; if someone else=s words are so wonderful that you cannot substantially rephrase them, you must put them inside quotation marks, using the exact same words. If you omit the quotation marks or the credit, you are plagiarizing. Plagiarism is grounds for failure on the assignment plagiarized; repeated plagiarism is ground for failure in the course. If you use 3 or more words in a row from another source, they must be placed in quotation marks and footnoted. Otherwise, it is plagiarism. For more details on what plagiarism is and how to avoid it, consult a style manual or the Writing Lab.

Appealing a Grade: If you have questions about a grade, come speak to me. If the problem is not resolved, speak with the History of Science Undergraduate Chair, Prof. Thomas Broman. He will attempt to resolve the issue informally and inform you of the Appeals Procedures if no resolution is reached informally.

Access and Accommodation: I will make every effort to honor requests for reasonable accommodations made by individuals with disabilities. If you think you qualify for accommodation, please contact the McBurney Disability Resource Center [263-2741; burney.wisc.edu/services/] to establish your eligibility for services. Requests for accommodation can be responded to more effectively if I receive them as far in advance as possible, preferably at the beginning of the semester. Such requests are confidential.

Religious Observance: If religious holidays or observances conflict with your participation in this course, please come talk to me **well in advance** for us to work out alternative arrangements.
If any other problems arise, either academic or personal, which might jeopardize your performance in the course, you must try to inform me after class or by the soonest available office hour, or by email (lknyhart@wisc.edu).

Grading Scale for Take-Home Essays:

A: For outstanding essays only. Thesis and argument are clear, thought-provoking, and based on correctly understood facts; material used to support the argument synthesizes ideas from different parts of the course (readings, lectures, discussions from different weeks); relationships drawn between facts and ideas are sophisticated, subtle, and/or original. Writing is grammatically correct and succinct. The argument flows well from point to point, without any puffery or wasted words.

AB: For very good essays that for some reason fall short of the criteria listed above. For example, the argument may be murky in one place; information may be presented that doesn't directly or clearly contribute to the argument; writing style may be awkward here and there, or flawed by one or two consistent (if minor) grammatical errors.

B: For solid, workmanlike essays. The essay may pursue a straightforward but not especially deep or sophisticated argument; it is okay as far as it goes, but doesn't penetrate the material very far. It may have a flash of brilliance that is unfulfilled, counterbalanced by minor grammatical problems, a weakness in argumentation, and/or a significant misunderstanding of events or chronology.

BC: The essay shows some of the basics of the ideal essay, but is weakened by a lack of serious think-work or writing problems. It may make superficial connections without offering sufficient evidence to make the connections plausible or persuasive, or it may have what is in principle a good argument supported by incorrect facts or chronology. Alternatively, it may provide a fairly solid argument with minor flaws, from which the reader is repeatedly distracted by awkward or ungrammatical prose.

C: A grade signifying some serious problem in essay-writing. It may deliver facts without a recognizable thesis or argument; it may wander away from the point; or it may be a thoughtful attempt so weakened by writing problems (grammar, punctuation, word choice) that it is difficult for the reader to understand a crucial point you are trying to make.

D: A marginal grade. There may be enough in here to show you have attended a few lectures and/or done some of the reading, but the essay indicates no effort at synthesis or thinking on your own, or else shows a serious misunderstanding of the nature of the material and/or the assignment. Also used for essays that are just barely coherent.

F: For unacceptable essays. An essay may be judged unacceptable if it contains plagiarism (see below); if it consists primarily in content inappropriate to the question or the material for this course; if it shows a complete misunderstanding of the course content; or if the writing fails to meet standard college-level requirements of basic communication in English.

The A-F system translates on your transcripts into a 4-point scale, where A = 4, AB = 3.5, B = 3, BC = 2.5, C = 2, D = 1, and F = 0. On any given assignment, you may receive a grade that is different from one of these, reflecting a penumbra around each grade (e.g., the “B” grade might range between 2.76 and 3.25). Thus you can tell if your paper is at the high, middle, or low end of the grade range for any given assignment.

Addendum: Class Participation

Preparation:

For your class participation grade, you are expected to come to class prepared and ready to talk about the readings. This means not only having passed your eyes over all the reading, but having thought about it as well. To get you into the habit of thinking actively about the reading in advance of class meetings, I have several devices. First, there are the framing questions printed in italics on the syllabus–some are set for just a particular day, others cover more than one. Those give you a sense of my agenda. But you will undoubtedly come up with other interesting questions of your own if you read actively.

At the level of lowest formality, I am requiring everyone to submit at least **8 questions** (or sets of questions), introduced by a comment if you wish, about the readings **over the course of the semester**, not more than one a week, and on a day in which you aren't submitting an analytical discussion piece (see below). These questions should be genuine, If you have a reason to omit a week and do two in another week, come and talk to me about that in advance. Thinking about it as once a week should be the general rule, with which gives you a couple of weeks off from any class-writing.

Please submit your questions/comments to Learn@UW in the "discussion" forum by 7 p.m. of the evening before the date when the readings are due. (Of course, you can submit them earlier, but I don't recommend submitting them more than a week earlier.) Bring a copy of your question/comment to class so I can ask you to repeat it there. You must write in complete sentences and paragraphs, using correct spelling, punctuation and grammar. This may be "informal writing" by academic standards, but it is not a txt msj.

I would prefer you not post your thoughts as an attachment, but write them right into the pane, to make it easier for everyone to read them. (Reading others' questions in advance may stimulate your own thinking–how might you answer the questions that others have posed? You may get a chance in class to bring up your answer. However, if you characteristically write questions that are just a little different from someone else, I will be suspicious about your level of initiative.) The questions will stay up for the duration of the semester.

Sample questions:

1) Does Michael Specter have an agenda that biases his coverage of Vandana Shiva? I became uncomfortable with his objectivity as I read through his essay.

2) In Linné's Philosophica Botanica (p. 224), I wasn't sure what was the point of the long list he calls the "giddy cycle." Could we go over that in more detail?

Note: If you have questions about what a particular word means, look it up in a dictionary before you bring it to class as a question. You might skip it if it only appears once, but if it appears more than once, you should probably check. History has no glossary attached. The OED (available online through MadCat; you can bookmark it) can sometimes help as it includes more historical meanings than a regular dictionary.

Discussion pieces: You are to write 3 "discussion pieces" of 300-500 words, one in each interval between the beginning of the course and Oct. 1, Oct. 6-Oct 29, and Nov. 3-Dec. 10, reflecting on the readings for a particular day. These mini-essays will be graded and will contribute to your class participation grade (together comprising about a third of it). Please submit these as attachments under "Assignments" in Learn@UW by 7 a.m. on the day of the relevant class. I recommend you bring a hard copy to use as a prompt in the discussion. Discussion pieces turned in late will receive late-paper penalties. (See the syllabus.)

These should be "think-pieces" showing your reflections on the reading. You may take off from the italicized prompts in the syllabus, but should probably try to narrow down the answers–the questions are often quite broad. For instance, for the question for Sept. 10 "*What do these readings tell us about the natural history in relation to state-sponsored European voyaging in the late 18th and very early 19th centuries?*" the point is not to give a list, but to find some more specific topic to mull over that might run across the primary and secondary sources. But you might also make up your own question to answer, or just write a short reflective essay. I have just a couple of ground rules:

1) Don't simply tell me whether you liked a reading or not, or even why or why not. That is generally not the point of reading analytically for history. "Critical analysis" in history doesn't mean flogging someone for their bad ideas but rather trying to understand how they could think the way they did.

2) It's not legitimate to criticize a reading from the perspective of 21st century knowledge. Again, our object here is to try to discover THEIR way of viewing the world, their reasoning, not impose ours on them.

Participation: This class has in the neighborhood of 30 students, and most 75-minute class periods will include some lecturing (no more than 50 minutes). In order for everyone who wants to get in a word who wants to, habitual talkers will need to discipline themselves. If you're one of those people who tends to jump immediately into the fray, please try to formulate your idea all the way to the end of the sentence before you raise your hand. That might mean writing it down. If you have an okay idea about a topic early on in class, but know that some other important issue will come up soon that you really want to respond to, consider saving your comments for that other important issue. Try to focus your giving of information or analysis on what you think is most burning for you, and spend the majority of your time listening to the other discussants. Taking notes when they speak will help you formulate responses rather than just reacting. (This advice is for shy people too. I am sometimes willing to go back to an old issue even if the discussion has moved on, if it takes you some time to form your thoughts.)

For people who don't volunteer a lot: I am not fond of putting people on the spot; I'd rather have you volunteer to speak. But if I haven't heard from you for a few classes, I may ask you to contribute. Attentive listening in class is great, and I respect shyness, but stretching yourself to talk to a group is important, too. One reason to prepare discussion pieces and questions in advance is so that you can read something or take off of something you've prepared for the class, which often makes it easier to get involved in a discussion.