

HISTORY OF SCIENCE, MEDICINE, AND PUBLIC HEALTH

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History of Science, Medicine, and Public Health is an interdisciplinary program that focuses on how different forms of knowledge and technology have been created in various times, places, and cultures, and how they have shaped the modern world. The major explores a wide range of questions. Is science universal, or does each culture have its own approach to trustworthy knowledge? What is the relationship between medical expertise, social and racial inequality, and everyday life? What is the nature of technology and its relationship to political, economic, and military power? Why do even the best public health campaigns have unintended consequences?

Course topics include the history of American and Western medicine and public health, medicine and race from the slave trade to the present, health and healing in Africa, scientific knowledge production in the global South, institutions of confinement, health activism, biotechnology, the history of the earth sciences, climate change and planetary catastrophe, the scientific revolution, scientific collections and material culture.

A major in History of Science, Medicine, and Public Health offers excellent preparation for a wide range of careers. Premedical students and others interested in health-related fields can combine preprofessional training with a broad humanistic education. The major also provides a solid foundation for any career at the intersection of the sciences, technology, and public life, including law, business, journalism, museum work, public policy, and government.

REQUIREMENTS OF THE MAJOR

The major in History of Science, Medicine, and Public Health requires twelve term courses (and twelve credits), including the two-term senior requirement. Students select a concentration of seven courses that guide them through an area of specialization. The seven concentration courses must include two courses in History of Science, Medicine, and Public Health; one seminar in History of Science, Medicine, and Public Health or in History; one full-credit science course; and three electives chosen from relevant courses in any department. At least one HSHM (or HIST) seminar must be taken before the senior year.

Concentrations The seven standard concentrations in the major are: Colonialism, Knowledge, and Power; Environment and Society; Gender, Reproduction, and the Body; Media, Information, and the Public; Medicine and Public Health; Minds and Brains; Science, Technology, and Society. Students may also design customized concentrations in consultation with the director of undergraduate studies (DUS). No later than the beginning of the junior year, students in the major must select a standard concentration or indicate that they wish to design their own.

See the Concentrations section for more information.

Electives Beyond the seven concentration courses, students must complete three additional electives in History of Science, Medicine, and Public Health. One of the electives must be a seminar, and one must be chosen from a concentration other than the one selected for the major. All courses for the major are chosen in collaboration with the student's adviser.

Credit/D/Fail A maximum of one History of Science, Medicine, and Public Health course taken Credit/D/Fail before the fifth term of enrollment may be counted toward the requirements of the major.

SENIOR REQUIREMENT

Students are held to the requirements that were in place when they declared their major. However, with approval from the director of undergraduate studies (DUS), the following senior requirements, updated for the academic year 2024-2025, may be fulfilled by students who declared the major in a prior term.

Students must complete a two-term senior project in HSHM 490 and 491. The Senior Project Workshop, HSHM 420, may be taken as an elective (for half-credit) in addition to HSHM 490 and 491. Note, that enrolling in HSHM 420 will be in addition to the twelve, one-credit courses.

Students select a project adviser, propose a tentative topic and title, and submit a proposal to the senior project director. The final product of the senior requirement may be a written essay or an alternative project such as a film, exhibition, catalog, atlas, or historical data reconstruction. In the case of an alternative project, the student must identify a second reader in addition to the adviser before the senior project director approves the project. The adviser or the second reader must be a faculty member in History of Science, Medicine, and Public Health. A written component of the senior project must illustrate sources and the intellectual significance of the project. For more details about requirements and deadlines, majors should consult the HSHM Senior Project Handbook; copies are available from the senior project director and on the program website.

SUMMARY OF MAJOR REQUIREMENTS

Prerequisites None

Number of courses 12 courses for 12 credits (incl senior req)

Distribution of courses 7 courses in concentration (incl 2 HSHM courses, 1 sem in HSHM or HIST taken before senior year, 1 full-credit science course, and 3 related electives); 3 addtl HSHM electives, to incl 1 sem and 1 course outside major concentration

Senior requirement Two-term project HSHM 490 and 491

Courses

HSHM 201a / HUMS 106 / PHYS 106a, Sustainable Energy: Physics and History

Alison Sweeney and Paola Bertucci

Students explore the physical logic of energy and power in parallel with the histories of technology for energy exploitation and economic theories of sustainability on the path to modernity. They learn the fundamentals of quantitative analysis of contemporary

and historical energy harvesting, its carbon intensity, and climate impact. They also gain an understanding of the historical underpinnings of the current global energy status quo and its relationship to economic theories of sustainability. Mathematical proficiency with algebra is assumed. Students from all academic interests and experiences are welcome in the course. QR, SC, SO o Course cr

HSJM 204b / AMST 163b / EVST 120b / HIST 120b, American Environmental History Paul Sabin

Ways in which people have shaped and been shaped by the changing environments of North America from precolonial times to the present. Migration of species and trade in commodities; the impact of technology, agriculture, and industry; the development of resources in the American West and overseas; the rise of modern conservation and environmental movements; the role of planning and impact of public policies. WR, HU

HSJM 206b, Body Politics: Histories of American Reproductive Rights, Health, and Activism from 1800 Megann Licskai

Are all politics reproductive politics? This course traces the reproductive history of the United States from the early nineteenth century to the present day. Questions about reproduction—and about not reproducing—are deeply tied to questions of gendered and racial rights; of bodily autonomy; of American expansion and empire; and of who counts as a citizen, or even as a human being. In the past few years, we've encountered new stories about everything from new and restrictive abortion laws, to immigrant woman who were sterilized without their consent, to new technologies in male birth control, to the inequitable childcare burden that falls to women during times of hardship, to the racist roots of foster care and residential school systems. In this course, we come to understand the historical changes in American reproduction to better understand the complicated roots of our current moment. By analyzing articles in newspapers and scientific journals, advertisements, film, patient and physician narratives, and exhibitions and material culture, students will understand reproduction as a site for empowerment and activism, as a site of medical professionalization, and as a site of health disparity. We examine reproduction capaciously, including pregnancy and childbirth, birth control and abortion, assistive reproductive technologies, and adoption and foster care. Our analysis is intersectional, and we consider what different identities meant for reproduction historically, as well as in our current moment. HU o Course cr

HSJM 209b / EVST 209b / HIST 465b, Making Climate Knowledge Deborah Coen

This is a course about *how* humans have come to know what we know about our impacts on the earth's climate and our vulnerability to climate change. When did humans first *know* that their actions, in the aggregate, could transform the planet? Did scientists bear responsibility to warn of these consequences? In what ways has the modern science of climate both appropriated and undermined traditional and indigenous forms of climate knowledge? Students learn to work with the methods of history of science: we analyze science as a social and material process bound to the cultural and epistemological particularities of its historical context, and we examine the political dimensions of historical narratives about the emergence of the theory of global warming. Via hands-on experience with Yale's historical collections, students learn to analyze maps, artifacts, and instruments as historical sources. They also gain familiarity with the methods of environmental history, learning to attend to historical evidence of shifting relationships between humans and non-humans. Finally, students become

more attuned to the evidence of climate change around them and more confident in their ability to make climate knowledge for themselves. HU

HSHM 215b / HIST 140b, Public Health in America, 1793 to the Present Naomi Rogers

A survey of public health in the United States from the yellow fever epidemic of 1793 to AIDS, breast cancer activism, bioterrorism and COVID. Focusing on medicine and the state, topics include epidemics and quarantines, struggles for reproductive and environmental justice, the experiences of healers and patients, and organized medicine and its critics. HU o Course cr

HSHM 220b, Histories of Confinement: From Atlantic Slavery to Social Distancing Nana Osei Quarshie

This course looks closely at the history of asylums, hospitals, prisons, and schools. It seeks to understand their workings and the interplay between bureaucratic forms, spatial and material organization, and modes of discipline, control, and remediation. It asks, how is institutional power organized, displayed, deployed, and disputed, and what are the limits and contradictions inherent in these efforts? Our readings draw from a range of contexts and disciplines to consider the relationship between the built environment and institutional life. HU o Course cr

HSHM 226a, The Global Scientific Revolution Staff

The material, political, cultural, and social transformations that underpinned the rise of modern science between the 14th and 18th century, considered in global context. Topics include artisanal practices and the empirical exploration of nature; global networks of knowledge and trade, and colonial science; figurative arts and the emersion of a visual language of anatomy, astronomy, and natural history. HU o Course cr

HSHM 237b / HSAR 282b / WGSS 282b, Renaissance Bodies: Art, Magic, Science Marisa Bass

An introduction to issues surrounding the representation of the body in both art and science, spanning from the late Middle Ages to the seventeenth century, and with a particular focus on the Northern Renaissance. Topics include medicine, reproduction, witchcraft, the gender spectrum, torture, race, disability, desire, dreams, and theories of imagination and invention. Sections and assignments will make ample use of the Yale collections. Previous experience with art history welcome but not required. HU

HSHM 254a / ANTH 229a, The Anthropology of Outer Space Lisa Messeri

Examination of the extraterrestrial through consideration of ideas in anthropology and aligned disciplines. Students discuss, write, and think about outer space as anthropologists and find the value of exploring this topic scientifically, socially, and philosophically. Previously ANTH 399. SO

HSHM 321a / HIST 244a, Cultures of Western Medicine Staff

A survey of Western medicine and its global encounters, encompassing medical theory, practice, institutions, and healers from antiquity to the present. Changing concepts of health, disease, and the body in Europe and America explored in their social, cultural, economic, scientific, technological, and ethical contexts. HU o Course cr

*** HSHM 406a / HIST 150Ja, Healthcare for the Urban Underserved** Sakena Abedin
Exploration of the institutions, movements, and policies that have attempted to provide healthcare for the urban underserved in America from the late nineteenth century to the present, with emphasis on the ideas (about health, cities, neighborhoods,

poverty, race, gender, difference, etc) that shaped them. Topics include hospitals, health centers, public health programs, the medical civil rights movement, the women's health movement, and national healthcare policies such as Medicare and Medicaid. WR, HU

* **HSHM 418b / HIST 444Jb / WGSS 435b, Queer Science** Joanna Radin and Juno Richards

Why are there so many studies involving trans brain scans? Can facial recognition technology really tell if you're queer? Why is everyone so obsessed with gay penguins? For that matter, how did science come to be the right tool for defining and knowing sex, gender, and sexuality at all? How does that history influence our collective lives in the present, and what are some alternatives? This course gives students a background in the development of sex science, from evolutionary arguments that racialized sexual dimorphism to the contemporary technologies that claim to be able to get at bodily truths that are supposedly more real than identity. It introduces scholarly and political interventions that have attempted to short-circuit the idea that sex is stable and knowable by science, highlighting ways that queer and queering thinkers have challenged the stability of sexual categories. It concludes by asking how to put those interventions into practice when so much of the fight for queer rights, autonomy, and survival has been rooted in categorical recognition by the state, and by considering whether science can be made queer. HU

* **HSHM 420a, Senior Project Workshop** Megann Licskai

A research workshop for seniors in the HSHM major, intended to move students toward the successful completion of their senior projects and to provide a community for support and for facilitated peer review. Meets periodically throughout the semester for students to discuss stages of the research process, discuss common challenges and practical strategies for addressing them, and to collaboratively support each others' work. The workshop events are structured around the schedule for the fall-to-spring two-term senior project, but students writing one-term projects or spring-to-fall projects also benefit from them, and there will be at least one peer review session to support their key deadlines each semester too. Students must be seniors in the HSHM major and must be signed up for HSHM 490, 491, or 492 to take this course. ½ Course cr

* **HSHM 422a / HIST 467Ja, Cartography, Territory, and Identity** Bill Rankin

Exploration of how maps shape assumptions about territory, land, sovereignty, and identity. The relationship between scientific cartography and conquest, the geography of statecraft, religious cartographies, encounters between Western and non-Western cultures, and reactions to cartographic objectivity. Students make their own maps. No previous experience in cartography or graphic design required. WR, HU

* **HSHM 429a, Decolonizing the Mind** Nana Osei Quarshie

This seminar explores the effects of colonialism and post-colonial power relations on the production of scientific, medical, and embodied knowledge about psychiatry. First, we read debates over the geographies of power and distrust in medicine. How have colonialism and post-colonial power relations defined the tasks of non-European psychiatry? What does it mean to decolonize psychiatric practice or culture? Second, we examine the nature of rationality. Is reason singular, plural, or culturally bound or universal? To what extent is spirit possession a rational experience? Third, we explore the relationship between scientific representations, social practices, and local culture. What relationship exists between social practices and culturally shared categories of

knowledge? Is psychiatry universalizable? Students learn to analyze and debate these questions by drawing on films, letters, photography, and monographs produced in and about Algeria, Argentina, Brazil, China, Cuba, Indonesia, and Vietnam. WR, HU, SO

*** HSHM 432a / ER&M 360a / HLTH 370a / SOCY 390a / WGSS 390a, Politics of Reproduction** Rene Almeling

Reproduction as a process that is simultaneously biological and social, involving male and female bodies, family formation, and powerful social institutions such as medicine, law, and the marketplace. Sociological research on reproductive topics such as pregnancy, birth, abortion, contraception, infertility, reproductive technology, and aging. Core sociological concepts used to examine how the politics of reproduction are shaped by the intersecting inequalities of gender, race, class, and sexuality. WR, SO

*** HSHM 445a / HIST 139Ja, Fetal Histories: Pregnancy, Life, and Personhood in the American Cultural Imagination** Megann Licskai

In our twenty-first-century historical moment, the fetus is a powerful political and cultural symbol. One's fetal politics likely predicts a lot about how they live their life, vote, worship, and even about how they understand themselves. How, then, has the fetus come to carry the cultural significance that it does? Are there other ways one might think of the fetus? And what is happening in the background when we center the fetus up front? This course examines the many cultural meanings of the fetus in American life: from a clump of cells, to a beloved family member, to political litmus test, and considers the way that these different meanings are connected to questions of human and civil rights, gender relations, bodily autonomy, and political life. We look at the history of our very idea of the fetus and consider how we got here. Each of us may have a different idea of what the fetus is, but every one of those ideas has a particular history. We work to understand those histories, their contexts, and their possible implications for the future of American political life. WR, HU

*** HSHM 447b / AFAM 392b / HIST 171Jb, Medical Racism in History and Practice** Carolyn Roberts

This seminar invites students to study historical and contemporary texts related to race and racism in medicine, science, and healthcare. Our primary focus is anti-Black racism, and we study connections between the period of slavery and present-day issues in healthcare, biomedical research, reproductive justice, and medical and nursing education and practice. Students from any department and discipline are welcome to join this seminar, which privileges deep listening, close reading, community, and care. HU

*** HSHM 449b / EVST 349b / HIST 449Jb / HUMS 446b / URBN 382b, Critical Data Visualization: History, Theory, and Practice** Bill Rankin

Critical analysis of the creation, use, and cultural meanings of data visualization, with emphasis on both the theory and the politics of visual communication. Seminar discussions include close readings of historical data graphics since the late eighteenth century and conceptual engagement with graphic semiology, ideals of objectivity and honesty, and recent approaches of feminist and participatory data design. Course assignments focus on the research, production, and workshopping of students' own data graphics; topics include both historical and contemporary material. No prior software experience is required; tutorials are integrated into weekly meetings. Basic

proficiency in standard graphics software is expected by the end of the term, with optional support for more advanced programming and mapping software. HU

*** HSHM 464a / HUMS 382a, Nature and Human Nature** Gary Tomlinson

This course explores the Western conception of the human place in the natural world as it has shifted across four centuries. It features, alongside corollary readings, close study of three classic texts: Galileo's *Dialogue Concerning the Two Chief World Systems* (1632), Giambattista Vico's *New Science* (1744), and Darwin's *Origin of Species* (1859) fundamental texts locating humans in the cosmos, in society, and in natural history, respectively. It finishes with a new work, Terrence Deacon's *Incomplete Nature* (2011), an attempt to explain the emergence of mind from the natural world.

No prerequisites, though the challenging nature of the materials suggests that this course will be aimed mainly at students beyond their first year. HU

*** HSHM 467b / HIST 447Jb / WGSS 465b, History of the Body** Ziv Eisenberg

What does it mean to have a "bad hair day?" How should you care for your skin? What happens when you eat a burger and drink wine? How are babies made? What happens when you die? The answers depend not only on who provides them, but also on where and when. This seminar examines historical production of systems of corporeal knowledge and power, as well as the norms, practices, meanings, and power structures they have created, displaced, and maintained. Structured thematically, the course familiarizes students with major topics in the history of the body, health, and medicine, with a particular focus on US history. WR, HU

*** HSHM 468a / HIST 260Ja, Sex, Life, and Generation** Ivano Dal Prete

Theories and practices of life, sex, and generation in Western civilization. Politics and policies of conception and birth; social control of abortion and infanticide in premodern societies; theories of life and gender; the changing status of the embryo; the lure of artificial life. WR, HU

HSHM 470a or b, Directed Reading Ivano Dal Prete

Readings directed by members of the faculty on topics in the history of science, medicine, or public health not covered by regular course offerings. Subjects depend on the interests of students and faculty. Weekly conferences; required papers.

*** HSHM 473b / HIST 403Jb, Vaccination in Historical Perspective** Jason Schwartz

For over two centuries, vaccination has been a prominent, effective, and at times controversial component of public health activities in the United States and around the world. Despite the novelty of many aspects of contemporary vaccines and vaccination programs, they reflect a rich and often contested history that combines questions of science, medicine, public health, global health, economics, law, and ethics, among other topics. This course examines the history of vaccines and vaccination programs, with a particular focus on the 20th and 21st centuries and on the historical roots of contemporary issues in U.S. and global vaccination policy. Students gain a thorough, historically grounded understanding of the scope and design of vaccination efforts, past and present, and the interconnected social, cultural, and political issues that vaccination has raised throughout its history and continues to raise today. HU

*** HSHM 490a or b and HSHM 491a or b, Yearlong Senior Project** Megann Liciskai

Preparation of a yearlong senior project under the supervision of a member of the faculty. There will be a mandatory meeting at the beginning of the term for students who have chosen the yearlong senior project; students will be notified of the time and

location by e-mail before classes begin. Majors planning to begin their projects who do not receive this notice should contact the senior project director. Students expecting to graduate in May enroll in HSHM 490 during the fall term and complete their projects in HSHM 491 in the spring term. December graduates enroll in HSHM 490 in the spring term and complete their projects in HSHM 491 during the following fall term. Majors planning to begin their projects in the spring term should notify the senior project director by the last day of classes in the fall term. Students must meet progress requirements by specific deadlines throughout the first term to receive a temporary grade of SAT for HSHM 490, which will be changed to the grade received by the project upon the project's completion. Failure to meet any requirement may result in the student's being asked to withdraw from HSHM 490. For details about project requirements and deadlines, consult the HSHM Senior Project Handbook. Students enrolled in HSHM 491 must submit a completed project to the HSHM Registrar no later than 5 p.m. on the due date as listed in the HSHM Senior Project Handbook. Projects submitted after 5 p.m. on the due date without an excuse from the student's residential college dean will be subject to grade penalties. Credit for HSHM 490 only on completion of HSHM 491.

*** HSHM 492a, One-Term Senior Project** Megann Liciskai

Preparation of a one-term senior project under the supervision of an HSHM faculty member, or of an affiliated faculty member with approval of the director of undergraduate studies. There will be a mandatory meeting at the beginning of the term for students who have chosen the one-term senior project; students will be notified of the time and location by e-mail before classes begin. Majors planning to begin their projects who do not receive this notice should contact the senior project director. Students expecting to graduate in May enroll in HSHM 492 during the fall term. December graduates enroll in HSHM 492 in the preceding spring term. Students planning to begin their project in the spring should notify the senior project director by the last day of classes in the fall term. Majors must submit a completed Statement of Intention form signed by the faculty member who has agreed to supervise the project to the HSHM administrator on the due date. Blank statement forms are available in the HSHM Senior Project Handbook on the HSHM website. Students enrolled in HSHM 492 must submit a completed senior project to the HSHM administrator as listed in the HSHM Senior Project Handbook no later than 5 p.m. on the due date in the fall term, or no later than 5 p.m. on the due date in the spring term. Projects submitted after 5 p.m. on the due date without an excuse from the student's residential college dean will be subject to grade penalties.

*** HSHM 496a / HIST 110Ja, Childbirth in America, 1650-2000** Rebecca Tannenbaum

This course considers the ways childbirth has been conducted in the United States over three centuries. Topics include the connections between childbirth and historical constructions of gender, race, and motherhood, as well as changes in the medical understanding and management of childbirth. WR, HU

*** HSHM 498a / HIST 142Ja, Collecting Bodies: Historical Approaches to Specimen Collection** Megann Liciskai

Why is there a room full of brains in the basement of Yale's medical school, and why does it welcome hundreds of visitors every year? What compels us about the macabre spectacle of human remains, and what is their place in medical history? What kinds

of stories can and should a museum space tell, and what are the multivalent functions of a collection like this in a university setting? Using Yale's Cushing Center as a center of discussion, this class examines the ethics of collecting and viewing human specimens. The course ties these practices to histories of colonialism, racism, medicine, anthropology, and natural history while considering the cultural specificity of the collectors and the collected. Students analyze the kinds of stories that museum spaces can tell and imagine possibilities for ethical storytelling through both academic analysis and creative engagement. In doing so, we prioritize hands-on historical work while reading theory to address broader ethical and epistemological questions. This course will, on occasion, meet at 333 Cedar St. to facilitate this hands-on work. WR, HU