

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 guides 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.

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.

Students in the Class of 2024 may earn their concentration in Global Health or any of the other seven concentrations.

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

By the end of reading period in the spring term of the junior year, students choose whether they will work toward a yearlong or a one-term senior project. Two-term senior projects are completed in HSHM 490, 491; one-term projects are completed in HSHM 492. Students who choose a one-term project must take an additional HSHM-listed course to complete the major. Only students who complete a yearlong senior project are eligible for Distinction in the Major.

HSHM 420, Senior Project Workshop, may be taken as an elective (for half-credit) in addition to HSHM 490 and 491, or HSHM 492. Note, enrolling in HSHM 420 will be in addition to the twelve, one-credit courses.

For both the one-term and two-term senior projects, 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 project is approved by the senior project director. Either the adviser or the second reader must be a member of the faculty in History of Science, Medicine, and Public Health. A written component to 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 and 10 full term course credits)

Distribution of courses 7 courses in concentration (incl 2 HSHM courses, 1 sem in HSHM or HIST, 1 science course, and 3 electives); 3 addtl HSHM electives, to incl 1 sem and 1 course outside major concentration

Senior requirement Two-term project (HSHM 490, 491), or one-term project (HSHM 492) and 1 addtl HSHM elective

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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.

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Students may find courses that fulfill the requirements of the concentrations in Yale Course Search by searching the "Any Course Information Attribute" dropdown search feature.

Colonialism, Knowledge, and Power (YC HSHM: Colonial Know & Power)

Environment and Society (YC HSHM: Environ & Society)

Gender, Reproduction, and the Body (YC HSHM: Gender, Reprod and Body)

Media, Information, and the Public (YC HSHM: Media Info & Public)

Medicine and Public Health (YC HSHM: Med & Public Health)

Minds and Brains (YC HSHM: Minds and Brains)

Science, Technology, and Society (YC HSHM: Sci, Tech & Society)

Courses in History of Science, Medicine, and Public Health explore the interactions of medicine, public health, technology, science, and society from a global and historical perspective. Encompassing the Scientific Revolution through the digital revolution, topics include public health and epidemics in global perspective; the relationships of medicine and society in modern America; climate change and the earth and environmental sciences; science, medicine, and race in the Global South; museums and scientific collections; genetics and biotechnology; medical technologies and pharmaceuticals; the interplay of technology, industry, and the state; and the relationship between science, medicine, and the arts.

Majors organize their curriculum through thematic concentrations that combine courses in the sciences and humanities. Concentrations include 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 concentrations in their own areas of interest in consultation with the director of undergraduate studies (DUS).

FACULTY ASSOCIATED WITH THE PROGRAM OF HISTORY OF SCIENCE, MEDICINE, AND PUBLIC HEALTH

Professors Deborah Coen, Naomi Rogers, John Warner

Associate Professors Paola Bertucci, Joanna Radin, William Rankin

Assistant Professors Nana Quarshie, Marco Ramos, Carolyn Roberts

Lecturers Sakena Abedin, Ivano Dal Prete, Ziv Eisenberg, Chitra Ramalingam

Affiliated Faculty Rene Almeling (*Sociology*), Toby Appel (*Yale University Library*), Melissa Grafe (*Yale University Library*), Dimitri Gutas (*Near Eastern Languages & Civilizations*), Jessica Helfand (*School of Art*), Marcia Inhorn (*Anthropology*), Kathryn

James (*Yale University Library*), Amy Kapczynski (*Law School*), Gundula Kreuzer (*Music*), Amy Meyers (*Yale Center for British Art*), Alan Mikhail (*History*), Ayesha Ramachandran (*Comparative Literature*), Paul Sabin (*History*), Jason Schwartz (*School of Medicine*), Gordon Shepherd (*School of Medicine*), Frank Snowden (*History*), Rebecca Tannenbaum (*History*), R. John Williams (*English*)

See visual roadmap of the requirements.

View Courses

Courses

*** HSHM 005a / HIST 006a, Medicine and Society in American History** Rebecca Tannenbaum

Disease and healing in American history from colonial times to the present. The changing role of the physician, alternative healers and therapies, and the social impact of epidemics from smallpox to AIDS. Enrollment limited to first-year students. Preregistration required; see under First-Year Seminar Program. WR, HU

HSHM 207b / AMST 236b / EVST 318b / HIST 199b, American Energy History Paul Sabin

The history of energy in the United States from early hydropower and coal to present-day hydraulic fracturing, deepwater oil, wind, and solar. Topics include energy transitions and technological change; energy and democracy; environmental justice and public health; corporate power and monopoly control; electricity and popular culture; labor struggles; the global quest for oil; changing national energy policies; the climate crisis. WR, HU o Course cr

HSHM 215a / HIST 140a, Public Health in America, 1793 to the Present Staff

A survey of public health in America from the yellow fever epidemic of 1793 to AIDS and breast cancer activism at the end of the past century. Focusing on medicine and the state, topics include quarantines, failures and successes of medical and social welfare, the experiences of healers and patients, and organized medicine and its critics. HU o Course cr

HSHM 217a / AMST 215a / HIST 485a / HUMS 219a, Biomedical Futures and Michael Crichton's Monsters Staff

What forms of life have been produced by modern science? The literal life-changing technologies that began to emerge after the Second World War also provoked new anxieties. They expressed themselves in the speculative fiction of Michael Crichton in terms of monsters: the virus in *The Andromeda Strain*, the androids in *Westworld*, the velociraptors of *Jurassic Park*, and even the patients maimed by gunshot wounds in *ER*. Crichton wrote thrilling stories that also asked his readers to consider what monsters humans could make if they didn't stop to consider whether or not they should. This course examines the emergence of modern life science to consider what it would take to produce more life-sustaining futures. HU, SO o Course cr

HSHM 226b, The Global Scientific Revolution Ivano Dal Prete

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 emergence of a visual language of anatomy, astronomy, and natural history. HU o Course cr

* **HSHM 406b / HIST 150Jb, 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 407b, Collecting Before the Museum** Paola Bertucci
A history of museums before the emergence of the modern museum. Focus on: cabinets of curiosities and Wunderkammern, anatomical theaters and apothecaries' shops, alchemical workshops and theaters of machines, collections of monsters, rarities, and exotic specimens. WR, HU

* **HSHM 409b / HIST 197Jb, Marriage and Medicine in Modern America** Kelly O'Donnell

This seminar explores histories of health, gender, and sexuality, by focusing on the intertwining of two institutions that have fundamentally shaped our culture: medicine and marriage. It uses marriage as a lens for viewing the historical and social transformations of the American medical profession, as well as to examine the medicalization of intimate relationships in the broader society. Weekly readings cover topics such as: eugenics, LGBTQ marriage and adoption, disability rights, sexuality and reproduction, sex education, health activism, the changing gender composition of the health professions, and the reform of medical education and training. Students also analyze a variety of primary sources, ranging from scientific studies and medical advice literature to popular magazines and romantic comedy films. WR, HU

* **HSHM 413a / AFST 465a / ANTH 468a / URBN 400 / URBN 442a, Infrastructures of Empire: Control and (In)security in the Global South** Leslie Gross-Wyrtzen

This advanced seminar examines the role that infrastructure plays in producing uneven geographies of power historically and in the "colonial present" (Gregory 2006). After defining terms and exploring the ways that infrastructure has been conceptualized and studied, we analyze how different types of infrastructure (energy, roads, people, and so on) constitute the material and social world of empire. At the same time, infrastructure is not an uncontested arena: it often serves as a key site of political struggle or even enters the fray as an unruly actor itself, thus conditioning possibilities for anti-imperial and decolonial practice. The geographic focus of this course is the African continent, but we explore comparative cases in other regions of the majority and minority world.
SO

* **HSHM 420a, Senior Project Workshop** Kelly O'Donnell

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 426a / HIST 111Ja, Race and Mental Health in New Haven** Marco Ramos

Recent scholarship in the humanities has critically examined the violence that the mental health care system has inflicted on marginalized communities in the United States. This advanced research seminar explores race, mental health, and harm through the local history of New Haven. We interrogate the past and present of Yale University's relationship to the surrounding community by unearthing the history of "community mental health" at Yale in the 1960s. In particular, the seminar is built around a newly discovered archive in the Connecticut Mental Health Center (CMHC), an institution that was developed as an urban renewal project that displaced citizens from their homes and jobs in the Hill Neighborhood. The archive details, among other things, the contentious relationship between Yale University and activist community organizations in New Haven during this period, including the Black Panthers and Hill Neighborhood Parents Association. Students develop original research papers based on archival materials. The seminar touches on historical methodology, archiving practices, and how to circulate knowledge about community healing and harm within and beyond the academy. Organizers in New Haven will be invited to reflect on our work at the end of the seminar. Priority is given to undergraduate juniors and seniors. WR, HU

* **HSHM 449b, 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 455a / ER&M 391a, Eugenics and its Afterlives** Daniel HoSang

This course examines the influence of Eugenics research, logics, and ideas across nearly every academic discipline in the 20th century, and the particular masks, tropes, and concepts that have been used to occlude attentions to these legacies today. Students make special use of the large collection of archives held within Yale Special Collections of key figures in the American Eugenics Society. Students work collaboratively to identify alternative research practices and approaches deployed in scholarly and creative works that make racial power visible and enable the production of knowledge unburdened by the legacies of Eugenics and racial science. Prerequisite: ER&M 200.

HU

*** HSHM 458a, Scientific Instruments & the History of Science** Paola Bertucci

What do scientific instruments from the past tell us about science and its history? This seminar foregrounds historical instruments and technological devices to explore how experimental cultures have changed over time. Each week students focus on a specific instrument from the History of Science and Technology Division of the Peabody Museum: magic lantern, telescope, telegraph, astrolabe, sundial, and more! WR, HU

*** HSHM 467b, 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 469b / AMST 467b / MCDB 469b, Biology of Humans through History, Science, and Society** Valerie Horsley

This course is a collaborative course between HSHM and MCDB that brings together humanists and scientists to explore questions of biology, history, and identity. The seminar is intended for STEM and humanities majors interested in understanding the history of science and how it impacts identity, particularly race and gender, in the United States. The course explores how scientific methods and research questions have impacted views of race, sex, gender, gender identity, heterosexism, and obesity. Students learn and evaluate scientific principles and concepts related to biological theories of human difference. There are no prerequisites, this class is open to all. WR, HU, SC

HSHM 470a or b, Directed Reading Staff

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 489b / HIST 109Jb, Activism and Advocacy in the History of American Health Care** Kelly O'Donnell

Is health care a human right? Can health advocacy shape health policy? What does it mean to be a health “activist” and to demand change of medicine? Health care in

America has always been political. In this seminar students explore the rich history of health activism and health advocacy in the modern United States, focusing primarily on the postwar period through the present day. Each week we encounter new varieties of grassroots organizing, individual activists, and advocacy organizations that have made political claims about health care and pushed for its reform. We examine how health activism shapes broader cultural conversations about health and the practice of medicine itself. This course does not aim to provide a comprehensive history of health activism in modern America, but rather takes a case study approach, for critical analysis of themes and tactics. For each session, students read a selection of essays, book chapters, or primary source materials about a particular variety of health activism. Through these readings, we discuss how the critiques of activists and the responses by medical practitioners reveal the significant impact of race, gender, class, and sexuality on the provision of health care in this country. We also consider how historians have approached this subject, both as scholars and participant-observers. Students become adept at primary source analysis and able to engage in scholarly conversations with secondary sources. WR, HU

*** HSHM 490a or b and HSHM 491a or b, Yearlong Senior Project** Kelly O'Donnell
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 or b, One-Term Senior Project** Kelly O'Donnell
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 497a / HIST 190Ja, Technology in American Medicine from Leeches to Surgical Robots** Kelly O'Donnell

From leeches to robot-assisted surgery, technology has both driven and served as a marker of change in the history of medicine. Using technology as our primary frame of analysis, this course focuses on developments in modern medicine and healing practices in the United States, from the nineteenth century through the present day. How have technologies, tools, and techniques altered medical practice? Are medical technologies necessarily “advances?” How are technologies used to “medicalize” certain aspects of the human experience? In this class we focus on this material culture of medicine, particularly emphasizing themes of consumerism, expertise, professional authority, and gender relations. WR, HU