

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. For example, is science universal, or does each culture have its own approach to trustworthy knowledge? What is the relationship between medical expertise, social structure, 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 Scientific Revolution, medicine and media in modern America, health activism and public health, global health and epidemics, biotechnology, predictions of planetary catastrophe, scientific collections and material culture, and the historical development of the physical, environmental, biological, and human sciences.

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, including the two-term senior requirement. Students select a pathway of seven courses that guides them through an area of specialization. The seven pathway courses must include two courses in History of Science, Medicine, and Public Health; one seminar numbered 100 or above in History of Science, Medicine, and Public Health or in History; one science course; and three electives chosen from relevant courses in any department.

Pathways The five standard pathways in the major are Medicine and Public Health; Global Health; Science, Technology, and Society; Gender, Reproduction, and the Body; and Media, Knowledge, and Visual Cultures. Students may also design customized pathways in consultation with the director of undergraduate studies. No later than the beginning of the junior year, students in the major must select a standard pathway or indicate that they wish to design their own.

Electives Beyond the seven pathway 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 pathway 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 courses 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.

Roadmap See visual roadmap of the requirements.

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. Yearlong 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.

For both the one-term and yearlong 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's website.

REQUIREMENTS OF THE MAJOR

Prerequisites None

Number of courses 12 term courses (incl senior req)

Distribution of courses 7 courses in pathway, incl 2 HSHM courses, 1 sem in HSHM or Hist numbered 100 or above, 1 science course, and 3 electives; 3 addtl HSHM electives, incl 1 sem and 1 course outside major pathway

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

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 Professor Carolyn Roberts

Lecturers Sakena Abedin, Rachel Elder, Ivano Dal Prete, Tess Lanzarotta, Chitra Ramalingam

Affiliated Faculty Rene Almeling (*Sociology*), Toby Appel (*Yale University Library*), Melissa Grafe (*Yale University Library*), Dimitri Gutas (*Near Eastern Languages & Civilizations*), Ann Hanson (*Classics*), 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*)

Courses

HSHM 202a / AMST 247a / FILM 244a / HIST 147a / HLTH 170a, Media and Medicine in Modern America John Warner and Gretchen Berland

Relationships between medicine, health, and the media in the United States from 1870 to the present. The changing role of the media in shaping conceptions of the body, creating new diseases, influencing health and health policy, crafting the image of the medical profession, informing expectations of medicine and constructions of citizenship, and the medicalization of American life. 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. HU

HSHM 212b / ER&M 214b / HIST 146b / HLTH 280b, Historical Perspectives on Global Health Tess Lanzarotta

In the 21st century “global health” is recognized as an influential framework for orienting action among a huge range of groups including public health workers, activists, philanthropists, economists, political leaders, and students. How did this come to pass? This survey class introduces you to the historical circumstances that have contributed to the contemporary landscape of global health. We travel through several centuries to examine how ideas about disease, colonialism, race, gender, science, diplomacy, security, economy, and humanitarianism have shaped and been shaped by attempts to negotiate problems of health that transcend geopolitical borders. HU

HSHM 241a / AFAM 170a / HIST 479a, Sickness and Health in African American History Carolyn Roberts

A history of American medicine through the African American experience covering the period of slavery through #BlackLivesMatter. Oriented around the complex dynamics of medical abuse and medical resistance, key themes include medicine and slavery; gender and reproduction; medical experimentation and ethics; the rise of racial science; lynching and vigilante violence; segregation and public health; African-descended approaches to health and healing; the rise of the African American medical profession; and black health activism from slavery to #BlackLivesMatter. HU

* **HSHM 406a / HIST 150Ja, Healthcare for the Urban Poor** Sakena Abedin

Exploration of the institutions, movements, and policies that have attempted to provide healthcare for the urban poor 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.

* **HSHM 412b / HIST 429Jb, Laboratory Life** Chitra Ramalingam

The laboratory is the iconic space of modern science, where unruly nature is tamed and controlled, and scientific facts are made. Through historical, ethnographic, and sociological approaches to lab science, this course explores how an obscure, secretive site for managing alchemical labor in medieval Europe became the globally dominant mode of producing universal experimental knowledge across the modern sciences. We consider issues of labor, skill and class; gender and race; pedagogy and the politics of profession; state, industrial, and corporate laboratories; secrecy and openness; place and geography; and the implication of labs in geopolitical webs of power, inequality, and exploitation. Undergraduate enrollment limited to juniors and seniors. WR, HU

* **HSHM 413a / AFAM 478a / WGSS 313a, An Introduction to Surveillance Studies** Simone Browne

Surveillance is an exciting and interdisciplinary field of study. The questions that shape the study of surveillance center on the management of everyday and exceptional life: personal data, privacy, race, gender, security, and terrorism, for example. This course provides students with an overview of theories and concepts in this emerging field. Importantly, students explore the history of surveillance and the origins of key technologies (CCTV, drones, whistleblowing, resistance). Through short stories, films, visual media and scholarly texts, students are encouraged to develop critical reading and analytical skills as they explore the social consequences of surveillance in modern life. HU

* **HSHM 415b / HIST 179Jb, Historical Perspectives on Science and Religion** Ivano Dal Prete

The engagement between science and religion from a historical standpoint and a multicultural perspective. The Islamic, Jewish, Buddhist, and Christian traditions; the roots of modern creationism; salvation expectations and the rise of modern science and technology. General knowledge of western and world history is expected. WR, HU

* **HSHM 416a / HIST 414Ja, Engineering the Modern Body** Rachel Elder

Exploring the human body in relationship to technology and the larger cultural processes of industrialization, medicalization, and most recently, the digital age. From Victorians who sought restoration from illness with electric belts, to the popularization of cosmetic surgery and gene therapy after World War II, students examine how the body became a canvas for a variety of personal, civic, and national goals. HU

* **HSHM 427b / HIST 187Jb, Indigenous Life, Settler Colonization, Conservation, and Medicine in 19th/20th C. Canada** Zoe Todd

This course explores the historical trajectory of State efforts to disrupt and control Indigenous life and nonhuman life on the Plains and in the subarctic in the late 19th and early 20th century (the period 1870-1945). It explores how biomedicine, conservation, and food policies were employed as means to disrupt Indigenous self-determination and were coupled with efforts to destroy kinship relations in the North/West. This course explicitly examines science and medicine as modes of genocidal policy making and praxis in late 19th and early 20th century Canada. WR, HU

* **HSHM 432b / ER&M 360b / HLTH 370b / SOCY 390b / WGSS 390b, 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 142Ja / WGSS 453a, Women and Medicine in America from the Colonial Era to the Present** Naomi Rogers

American women from the colonial era to the present as midwives, patients, healers, reformers, revolutionaries, innovators, and entrepreneurs. Ways that women have shaped American health care and medical research. WR, HU

* **HSHM 453b / E&EB 336b / HUMS 336b, Culture and Human Evolution** Gary Tomlinson

Examination of the origins of human modernity in the light of evolutionary and archaeological evidence. Understanding, through a merger of evolutionary reasoning with humanistic theory, the impact of human culture on natural selection across the last 250,000 years. HU, SC

* **HSHM 465b / HIST 176Jb / WGSS 457b, Reproductive Health, Gender & Power in the U.S.** Ziv Eisenberg

This seminar examines women's and men's reproductive health in the United States from the 19th century to the present. How have gender norms and social power structures shaped medical knowledge, scientific investigation, political regulation, and private reproductive experiences? What do the lessons of the history of reproductive health tell us about contemporary policy, legal and economic debates? Topics include abortion, activism, childbirth, contraceptives, eugenics, feminism, fertility, medicalization, pregnancy, reproductive science and technology, sexual health, social justice, and sterilization. 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 471a 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 472a / HIST 124Ja, American Bodies at War 1776–Present** Katherrine Healey

This reading seminar examines the human bodies recruited for and impacted by American wars from the Revolutionary War to the present. Topics include gender, sexuality, reproduction, and masculinity; race, citizenship, and corporal sacrifice; changing notions of mental and physical fitness; disability and rehabilitation; disease, medicine, and public health; rationing, nutrition, and the home front; and the human-technology interface. HU

* **HSHM 473a / HIST 403Ja, 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 475b / HIST 128Jb, Race and Disease in American Medicine** Sakena Abedin

An exploration of the history of race and disease in American medicine from the late 19th century to the present, focusing on clinical practice and clinical research. We discuss cancer, psychiatric disease, sickle cell disease, and infectious diseases including tuberculosis and HIV. We examine the role of race in the construction of disease and the role of disease in generating and supporting racial hierarchies, with special attention to the role of visibility and the visual in these processes. We also consider the history of race and clinical research, and the implications of racialized disease construction for the production of medical knowledge. WR, HU

* **HSHM 479b / EVST 368b / HIST 491Jb / RLST 368b, The History of the Earth from Noah to Darwin** Ivano Dal Prete

Young earth creationism and flood geology have long been among the most divisive features of American culture and politics. Yet a basic postulate is shared across the spectrum: for better or worse, the old age of the Earth is regarded as the recent product of a secular science, consistently rejected by traditional Christianity. This seminar challenges this long-established narrative, by uncovering the surprising boldness, complexity, and societal diffusion of pre-modern debates on the history of the Earth, and of humankind itself. Students have opportunity to explore the nature, assumptions, and methods of Earth sciences before the advent of modern geology, to question ingrained assumptions about their relation to religion and society, and to place outstanding issues into historical perspective. How have the great monotheistic religions dealt with the possibility of an ancient Earth? Was a young creation always important in traditional Christianity? If not, what led to the emergence of young Earth creationism as a force to be reckoned with? What are the intellectual roots of American preadamism, which claims that the black and white races were created at different times and do not descend from the same ancestor? These and other questions are addressed not only through scholarly literature in the field, but also with the analysis of literary, visual, and material sources available on campus. WR, HU

* **HSHM 481a / AFAM 213a / HIST 383Ja, Medicine and Race in the Slave Trade** Carolyn Roberts

Examination of the interconnected histories of medicine and race in the slave trade. Topics include the medical geography of the slave trade from slave prisons in West Africa to slave ships; slave trade drugs and forced drug consumption; mental and physical illnesses and their treatments; gender and the body; British and West African medicine and medical knowledge in the slave trade; eighteenth-century theories of racial difference and disease; medical violence and medical ethics. WR, HU

* **HSHM 482b / AFAM 448b / SOCY 348b / WGSS 445b, Race, Gender, and Surveillance** Simone Browne

This course provides an overview of theories in the emerging field of surveillance studies, with a focus on race and gender. We examine transformations in social control and the distribution of power in the U.S. and global contexts, with a focus on populations within the African diaspora. As such, this is a Black Studies course. Course topics include: the Trans-Atlantic slave trade; reality television; social media; anti-surveillance fashion; airports; biometrics and drones. Students are encouraged to develop critical reading, writing, and analytical skills. Through the use of films, videos, and other visual medial students are challenged to better understand how surveillance practices inform modern life. SO

* **HSHM 484b / ER&M 352b / HIST 189Jb, Indigenous Peoples, Colonial Science** Tess Lanzarotta

In this class, we explore Indigenous peoples' historical encounters with colonial science, medicine, and technology. When white settlers arrived in the territories of Indigenous peoples, they characterized Indigenous bodies, communities, and subjectivities in specific ways that were intended to justify the elimination, assimilation, and dispossession of Indigenous peoples. One of our aims in this class is to understand the roles that scientific knowledge, practices, and values played (and continue to play) in these colonial processes. However, at the same time, Indigenous peoples have contested and resisted the claims made by colonial scientists and physicians, used science, medicine, and technology to express and extend their sovereignty, and consistently asserted the power and value of their own knowledge systems. Throughout the class, we discuss how these negotiations have taken show and consider how they can inform and complicate our sense of the relationship between science and indigeneity. Students are exposed to "classic" academic debates, like the "Virgin Soil Epidemics" theory, but also to Indigenous critiques of Euro-American scientific traditions, like the contemporary ethical issues surrounding the use and reuse of biological specimens collected from Indigenous communities. WR, HU

* **HSHM 487a / HIST 479Ja, Disability, Science, and Society** Rachel Elder

Science and disability are inextricably linked. Since at least the nineteenth century, medical science and technology have helped to define disability as a 'problem' in need of intervention rather than as the product of increasingly stringent social norms. The medical gaze, systems of quantification, rubrics of 'normality,' eugenics, intelligence testing—each of these tools of science have reinforced hierarchies of difference while devaluing the experiences of persons with non-conforming bodies and brains. In this course we explore this fairly recent history, focusing on the experiences of people with a range of disabilities through the prism of modern science, medicine, and technology. From prosthetic limbs to neuro-enhancing drugs, we examine how nineteenth and twentieth century sciences have shaped definitions and experiences of disability. Course topics include the nineteenth-century 'invention' of disability, medicalization and eugenics, access and infrastructure, social versus medical models of disability, notions of control and able-bodiedness, and the rise of disability activism in the final quarter of the twentieth century. WR, HU

* **HSHM 488a / HIST 153Ja, The History of Drugs in Twentieth Century America** Tess Lanzarotta

Virtually every American today "does" drugs. As a nation, drug use ranges from everyday activities, such as drinking coffee or beer, to combating illnesses with prescription medications, to using illegal drugs for recreation. This course follows a loose chronology beginning in the early twentieth century and ending in the present day. Instead of focusing on the biography of a single drug, or class of drugs, this course incorporates a wide range of substances, including alcohol, cigarettes, pharmaceuticals, and narcotics. For each session, students read a selection of essays, book chapters, and primary source material, and then discuss how certain ways of using and selling drugs have been sanctioned and encouraged, while others have been pathologized or criminalized. We explore how drug definitions are constructed, how they shift over time, how they affect (and are affected by) people who use, sell, and regulate drugs. Throughout the course, films, images, music, and television episodes are presented as objects of analysis to provide insight into the cultural lives of drugs. As a group, we discuss how historians have approached this subject, assess their sources and assumptions, and consider the choices they have made in researching and writing. HU

* **HSHM 490a or b and HSHM 491a or b, Yearlong Senior Project** Carolyn Roberts

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 211 HGS no later than 5 p.m. on April 6, 2018, in the spring term, or no later than 5 p.m. on December 1, 2017, in the fall 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. Credit for HSHM 490 only on completion of HSHM 491.

* **HSHM 492a or b, One-Term Senior Project** Carolyn Roberts

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 essay 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 in 207 HGS no later than September 15, 2017 (HSHM 492a), or January 19, 2018 (HSHM 492b). Blank statement forms are available in 207 HGS and in the HSHM Senior Project Handbook. Students enrolled in HSHM 492 must submit a completed senior project to 211 HGS no later than 5 p.m. on December 8, 2017, in the fall term, or no later than 5 p.m. on May 4, 2018, 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 495a / HIST 156Ja, Medicine & U.S. Imperialism** Tess Lanzarotta

Both "U.S. Imperialism" and "medicine" are broad categories. Imperialism can include complex formations like economic domination, the waging of war, processes of cultural assimilation, or formal territorial dispossession. Medicine, on the other hand, can include sets of beliefs and interventions ranging from vaccination campaigns, to the collection of biological specimens, to humanitarian aid, to biomedical research. Throughout the class, we question how historians have navigated these complex and shifting definitions and, in doing so, tried to make sense of the historical relationship between medicine and American empire. While this class is broadly chronological, its approach is more episodic than comprehensive. Instead of presenting a synthetic historical narrative, it offers students a nuanced understanding of important chapters in American history and leaves them with a set of conceptual and critical tools, which they can then apply to their own original research papers. HU