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 program explores questions such as whether science is universal, or whether each culture has its own approach to trustworthy knowledge; the relationship between medical expertise, social structure, and everyday life; the nature of technology and its relationship to political, economic, and military power; reasons why 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 Courses taken Credit/D/Fail may not 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 Professor** Paola Bertucci

**Assistant Professors** Henry Cowles, Joanna Radin, William Rankin

**Lecturers** Sakena Abedin, Ivano Dal Prete, 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 002b / CLCV 034b / HIST 037b, Medicine and Disease in the Ancient World**  Jessica Lamont

Examination of ancient medicine considering modern fields of pathology, surgery, pharmacology, therapy, obstetrics, psychology, anatomy, medical science, ethics, and education, to gain a better understanding of the foundations of Western medicine and an appreciation for how medical terms, theories, and practices take on different meanings with changes in science and society. All readings in English. Enrollment limited to freshmen. Preregistration required; see under Freshman Seminar Program.  **HU**

**HSHM 003b / HIST 077b, Revolutions and Environment in Latin America**  Jose Ragas

The seminar offers a close examination of environmental history in modern Latin America. Students analyze the multiple ways in which people and environment have mutually—and radically—shaped each other from the Age of Revolutions to Neoliberalism.  **HU**

**HSHM 004a / HIST 062a, Technology and American Medicine**  Rachel Elder

Drawing on perspectives from history and sociology, students explore how technology transformed medical knowledge and practice during the 20th century. Consideration of how technology came to occupy a central role in defining modern medicine through focus on the rise of hospital medicine, domestic medical devices, and numerous diagnostic and information technologies.  **HU**

**HSHM 005b / HIST 006b, 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 freshmen. Preregistration required; see under Freshman Seminar Program.  **WR, HU**

**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 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**

**HSHM 210a / HIST 443a, Global Histories of Identification and Surveillance**  Jose Ragas

Investigation of surveillance technologies that emerged in the last two centuries as the result of transnational cooperation between East and West and South and North. Traditional forms of identification, such as tattoos, family names, and physical features, along with sophisticated technologies, such as fingerprinting, photography, and iris recognition, and the crucial role they play in helping institutions classify, identify, and monitor populations. Consideration of how biometrics and identity cards shape the lives of millions of people worldwide, eroding or empowering them as citizens.  **HU**

**HSHM 214a / HIST 402a, Extraterrestrials in History**  Ivano Dal Prete

The notion of extraterrestrials and “radical others” in history and culture from antiquity to the present. Topics include other worlds and their inhabitants in ancient Greece; medieval debates on the plurality of worlds; angels, freaks, native Americans, and other “aliens” of the Renaissance; comet dwellers in puritan New England; Mars as a socialist utopia in the early twentieth century; and visitors from space in American popular culture.  **HU**

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

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**
HSHM 234b / HIST 471, Medicine and Health in Society  Rachel Elder
The history of Western medical knowledge and practice from antiquity to the present. Focusing on the role of medicine in daily life, this course considers patients and practitioners, various approaches to healing, as well as changing understandings of health, disease, and the body across time and place.  HU

* HSHM 401a / HIST 412Ja, Critical Issues in the History of Technology  Jose Ragas
A historical approach to current debates on the role of technology in society and the multiple ways people have imagined, designed, and resisted technological developments since the Industrial Revolution. Topics include how technology is transforming the world; reliance on technology to connect, to combat social inequality, and to promote democracy; whether technology has created a gap between rich and developing countries and isolated users; and how people in the past engaged with technology and what we learn from those experiences.

* HSHM 402a / ASTR 192a / CLCV 213a / HIST 468Ja / NELC 352a, Ancient and Medieval Astronomy  Kevin Van Bladel
The history and methods of classical astronomy, one of the seven classical liberal arts, as practiced by ancient and medieval astronomers of Assyria and Babylonia, Greece, Rome, Persia, and by medieval scholars in Latin, Arabic, and Sanskrit, down to the time of Copernicus and Kepler.  QR, HU, SC

* 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.  WR, HU

* HSHM 415b / HIST 179Ja, 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.  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 422a / HIST 467Ja, Cartography, Territory, and Identity  William 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 423a /ER&M 377 / HIST 417Ja, Biomedical Futures Since 1945  Joanna Radin
Ideas about biomedicine's promises and perils as they have been realized differently across place and time. Visions of the future of biomedicine that have shaped public policy, medical practice, and therapeutic innovation. Speculation about what medicine would come to look like in time. Ideas from literature, film, advertisements, policy documents, and medical texts around the world since World War II.  WR, HU

* HSHM 433a / HIST 419Ja / WGSS 419a, Gender and Science  Deborah Coen
Exploration of the dual potential of the sciences to reinforce received ideas about gender or to challenge existing sexual and racial hierarchies; the rise of the ideas and institutions of the modern sciences as they have reflected and shaped new notions of femininity and masculinity.  HU

* HSHM 435b / HIST 438Ja, New Approaches to Early Science, Medicine, and Technology  Ivano Dal Prete
Discussion of the history of science, medicine, and technology from the ancient Middle East to the Early Modern period. Topics include the history of the interaction between theories of generation and social practices; politics and policies of conception and birth; social control of abortion and infanticide in western and non-western societies; theories of life and gender; the changing status of the embryo; and the lure of artificial life.  HU

* HSHM 438b / HIST 473Ja, The Neurological Condition  Rachel Elder
Exploration of how science, medicine, and technology have shaped understanding the brain and nervous system as the center of human identity. Consideration of the theories of diminishing “nerve force,” the electric cures of the Victorian era, fMRIs, and the current Century of the Brain research. Topics include the rise of professional neurology and neuroscience, cultural meanings of nerves and the brain, and the intimate role of patients and human subjects in formulating this science from the nineteenth century to the present.  HU
* HSHM 439b / HIST 444Jb, Scientific Instruments and the Making of Knowledge  Charlotte Abney Salomon
A survey of the design and use of instruments for making scientific knowledge from the Renaissance to the present. Topics include
visualizing the invisible; proof and credit; standardization and precision; exploration, geography, and politics; doctor-patient interaction;
and science and the public. Students have weekly hands-on interactions with historical scientific instruments from the Peabody museum
collections. WR, HU

* HSHM 453b / E&E 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 454a / HIST 445Ja, Natural History in History  Paola Bertucci
The changing meaning and practice of natural history, from antiquity to the present. Topics include: technologies and epistemologies
of representation, the commodification of natural specimens and bioprospecting, politics of collecting and display, colonial science and
indigenous knowledge, and the emergence of ethnography and anthropology. Students work on primary sources in Yale collections. HU

* HSHM 463b / AMST 418b, Social Governance in Early America  Greta LaFleur
The management of bodies and populations in North America from c. 1790 to c. 1850. Focus on the creation, management, and
hierarchization of populations through the science of classification, including categories such as race, nation, wealth, and work. Relations
between new forms of government and emerging strategies of governance. The specific shape taken by the state’s investment in the
management of birth, life, and death, and the legacies of that investment. 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.
HU

HSNM 470a and HSNM 471b, Directed Reading  William Rankin
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.

* HSNM 480a / AFST 390a / HIST 390Ja / WGSS 381a, Black Bodies and White Science in South Africa  Efeoghene Igor
A historical perspective on the relationship between science, medicine, aesthetics, and racial embodiment in South Africa. Consideration
of the ways in which science and aesthetics can offer new ways of thinking about citizenship in colonial and apartheid South Africa;
investigation of the grammar of racialized science and its role in colonial and apartheid policies. HU

* HSNM 481b / AFAM 213b / HIST 383Ja, Medicine and Race in the Slave Trade  Staff
Examination of the interconnected histories of medicine and race in the slave trade. Topics include the medical geography of the slave
deportation 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. HU

* HSNM 483b, Health, Disease, and Racial Difference in Modern America  Sakena Abedin
Exploration of the meanings attributed to black-white differences in health from the late-nineteenth century to the present with an
emphasis on the mutual construction of race and health/disease. Topics include specific diseases, (cancer, heart disease, tuberculosis,
HIV) as well as health activism, ‘health disparities’ research, and genomics. HU

* HSNM 485b / HIST 477Ja, Health and Medicine in the Global South  Jose Ragas
The Global South is a crucial site to examine the expansion of health services and the transformation of medical practices over the
last two centuries. Rather than being an area dependent on experts, medical knowledge, and infrastructure from the North Atlantic,
recent scholarship has revealed the Global South as a dynamic space where medicine and health were constantly reinvented through the
circulation between Africa, Asia, and Latin America. Students examine the interconnectedness of such spaces as well as the complexity of
the practices and actors that moved across the Atlantic and the Pacific, whether as doctors, healers, policy makers, or patients. HU

* HSNM 490a or b and HSNM 491a or b, Yearlong Senior Project  Staff
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 HSNM 490 during the fall term and complete their projects in HSNM 491 in the spring
term. December graduates enroll in HSNM 490 in the spring term and complete their projects in HSNM 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 HSNM 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 HSNM 490. For details about project requirements and deadlines,
consult the HSNM Senior Project Handbook. Students enrolled in HSNM 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  Staff
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.