SCIENCE AND PUBLIC POLICY

SCPP Co-Directors: Professor Tim Halpin-Healy (Physics & Astronomy) and Brian Morton (Biological Sciences)

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Department Administrator: Melissa Flores

Mission

As part of the College’s mission to prepare scientists, policy-makers, and an educated citizenry for the moral challenges presented by future scientific advances, Barnard offers a unique collection of courses focusing on issues at the frequently volatile intersection point where science, public policy, and societal concerns collide. These courses are interdisciplinary in nature, team-taught by Barnard faculty from a variety of departments, and held in seminar format with limited enrollments, typically juniors and seniors. Recent topics concern ecological vs. financial imperatives in developing Third-World biodiversity, manipulation of the human genome, privacy issues and ethical dilemmas arising from genetic testing, misguided eugenics programs and race science, the Manhattan Project, as well as the Cold War build-up of nuclear arsenals in the United States and former Soviet Union.

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Requirements for the Science, Policy, & Ethics Minor

The minor in Science, Policy, & Ethics requires five courses total: two core SCPP seminars, one introductory course in philosophy, and two additional courses.

1. Core SCPP Seminars

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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>SCPP BC3334</td>
<td>Science, State Power &amp; Ethics</td>
<td>4</td>
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<tr>
<td>SCPP BC3336</td>
<td>Genetics and Society</td>
<td>4</td>
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If course offerings restrict availability, then, with the approval of the SCPP Director, one of the SCPP core seminars may be replaced by a course from the list of Additional Courses below.

2. Introductory Philosophy

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<thead>
<tr>
<th>Course</th>
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<th>Points</th>
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<tbody>
<tr>
<td>PHIL BC1001</td>
<td>Introduction to Philosophy</td>
<td>3</td>
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<tr>
<td>or PHIL UN1010</td>
<td>Methods and Problems of Philosophical Thought</td>
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</table>

3. Additional Courses

Two courses from the following:

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL UN3995</td>
<td>Topics in Biology: Crossroads in Bioethics</td>
<td>1-2</td>
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<tr>
<td>COMS BC3420</td>
<td>Privacy in a Networked World</td>
<td>4</td>
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<tr>
<td>EEEB GU4005</td>
<td>Conservation Policy</td>
<td>3</td>
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<tr>
<td>EEEB GU4321</td>
<td>Human Nature: DNA, Race &amp; Identity</td>
<td>4</td>
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<tr>
<td>EEEB GU4700</td>
<td>Race: The Tangled History of a Biological Concept</td>
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<tr>
<td>EESC BC3040</td>
<td>Environmental Law</td>
<td>3</td>
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<tr>
<td>or SDEV UN2000</td>
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<tr>
<td>EESC UN2330</td>
<td>SCIENCE FOR SUSTAINABLE DEVPT</td>
<td>3</td>
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<tr>
<td>HIST BC3910</td>
<td>Global Politics of Reproduction: Culture, Politics, and History</td>
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<tr>
<td>HRTS UN3001</td>
<td>Introduction to Human Rights</td>
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HRTS BC3850 Human Rights and Public Health | 4
HSPB UN2950 Social History of American Public Health | 4
PHIL V2593 Science and Religion | 3
PHIL UN2702 Contemporary Moral Problems | 3
PHIL UN3654 Philosophy of Psychology | 3
PHIL UN3701 Ethics | 4
PHIL V3720 Ethics and Medicine | 3
PHIL UN3800 PHILOSOPHY, JUSTICE AND SOCIAL ACTIVISM | 3
PSYC BC3387 Topics in Neuroethics | 4
PUBH UN3100 Introduction to Public Health | 3
SDEV UN2050 Environmental Policy and Governance | 3
SDEV UN3355 | | 3
SOCI UN3246 Medical Sociology | 3
SOCI BC3750 How Race Gets Under Our Skin: The Sociology of Race, Health, and Biomedicine | 4
WMST BC3131 Women and Science | 4

SCPP BC3334 Science, State Power & Ethics. 4 points.

Seminar

A comparative study of science in the service of the State in the U.S., the former Soviet Union, Fascist Italy, and Nazi Germany during pivotal periods through the first half of the 20th century. Topics to be covered include the political and moral consequences of policies based upon advances in the natural sciences making possible the development of TNT, nerve gas, uranium fission and hydrogen fusion atomic bombs. Considers the tensions involved in balancing scientific imperatives, patriotic commitment to the nation-state, and universal moral principles and tensions faced by Robert Oppenheimer, Andrei Sakharov, Neils Bohr and Werner Heisenberg. Selected readings include: Michael Frayn’s play Copenhagen, Hitler’s Uranium Club by Jeremy Bernstein, Brecht’s Galileo, John McPhee’s The Curve of Binding Energy, Richard Rhodes’ The Making of the Atomic Bomb.

SCPP BC3336 Genetics and Society. 4 points.

An exploration of the growing knowledge and technological advances in genetics, with a focus on human genetics, using scientific, popular and artistic sources. The course will cover areas such as genetic testing, personalized medicine, ancestry analysis, genome editing with CRISPR-Cas9, stem cells and cloning. It will involve an examination of scientific sources, portrayals in popular culture and discussions of some of the ethical implications and social/political impacts.

Fall 2020: SCPP BC3336

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<th>Course</th>
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<tr>
<td>SCPP 3336</td>
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<td>Brian Morton</td>
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SCPP BC3340 Exhibitions: Engaging Public Understanding. 1 point.

Not offered during 2020-21 academic year.

Corequisites: Enrollment limited to 18 students.

Museum exhibitions educate the public, inform discourse, and shape opinion. Students work with curators and exhibition designers on conceptuation and research, design and preparation, writing interpretative material, and developing media and ancillary programming. Students engage in the communication of learning goals through both the exhibition’s content and its physical manifestation.
Cross-Listed Courses

PHIL BC1001 Introduction to Philosophy. 3 points.
Survey of some of the central problems, key figures, and great works in both traditional and contemporary philosophy. Topics and texts will vary with instructor and semester.

PHIL UN1010 Methods and Problems of Philosophical Thought. 3 points.
Critical introduction to philosophical problems, ideas and methods.

Fall 2020: PHIL UN1010

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BIOL UN3995 (Section 1) Topics in Biology: Crossroads in Bioethics. 1-2 points.
Prerequisites: at least one introductory course in biology or chemistry. This two credit multidisciplinary and interactive course will focus on contemporary issues in bioethics. Each topic will cover both the underlying science of new biotechnologies and the subsequent ethical issues that emerge from these technologies. Classroom time will be devoted to student discussions, case presentations, and role playing. Topics include human trafficking, stem cell research, human reproductive cloning, neuroethics, genetic screening, human-animal chimeras, synthetic biology, bioterrorism, and neuroimaging.

COMS BC3420 Privacy in a Networked World. 4 points.
The ubiquity of computers and networks in business, government, recreation, and almost all aspects of daily life has led to a proliferation of online sensitive data: data that, if used improperly, can harm the data subjects. As a result, concern about the use, ownership, control, privacy, and accuracy of these data has become a top priority. This seminar course focuses on both the technical challenges of handling sensitive data, the privacy implications of various technologies, and the policy and legal issues facing data subjects, data owners, and data users.

EEEB GU4005 Conservation Policy. 3 points.
Prerequisites: Students should have completed at least one course in ecology, evolution or conservation biology.
The purpose of this course is to arm emerging scientists with an understanding of conservation policy at the city, state, federal and international levels. Our focus will be on understanding the science that informs conservation policy, evaluating the efficacy of conservation policies for achieving conservation goals, and learning about the role that scientists play in forming policy.

EEEB GU4321 Human Nature: DNA, Race & Identity. 4 points.
The course focuses on human identity, beginning with the individual and progressing to communal and global viewpoints using a framework of perspectives from biology, genetics, medicine, psychiatry, religion and the law.

Fall 2020: EEEB GU4321

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Spring 2021: EEEB GU4321

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<tr>
<td>EEEB 4321</td>
<td>001 / 10448</td>
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<td>Robert Pollack, 4</td>
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EEEB GU4700 Race: The Tangled History of a Biological Concept. 4 points.
Enrollment limited to 15. Priority given to EBHS majors/concentrators. Not offered during 2020-21 academic year.

From Aristotle to the 2020 US census, this course examines the history of race as a biological concept. It explores the complex relationship between the scientific study of biological differences-real, imagined, or invented and the historical and cultural factors involved in the development and expression of ‘racial ideas.’ Scientific background not required. [Additional hour for film screenings weekly in second half of the semester—attendance at films is mandatory.] Please note that this course DOES NOT fulfill the SC requirement at the College or GS.

Spring 2021: EEEB GU4700

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EESC BC3040 Environmental Law. 3 points.
Process-oriented introduction to the law and its use in environmental policy and decision-making. Origins and structure of the U.S. legal system. Emphasis on litigation process and specific cases that elucidate the common law and toxic torts, environmental administrative law, and environmental regulation through application and testing of statutory law in the courts. Emphasis also on the development of legal literacy, research skills, and writing.

EESC UN2330 SCIENCE FOR SUSTAINABLE DEVPT. 3 points.
CC/GS: Partial Fulfillment of Science Requirement

The course provides students with the natural science basis to appreciate co-dependencies of natural and human systems, which are central to understanding sustainable development. After completing the course, students should be able to incorporate scientific approaches into their research or policy decisions and be able to use scientific methods of data analysis. The semester will highlight the climate system and solutions from both physical and ecological perspectives; water resources; food production and the cycling of nutrients; and the role of biodiversity in sustainable development. The course emphasizes key scientific concepts such as uncertainty, experimental versus observational approaches, prediction and predictability, the use of models and other essential methodological aspects.

Fall 2020: EESC UN2330

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<td>Ruth Defries</td>
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HIST BC3910 Global Politics of Reproduction: Culture, Politics, and History. 4 points.
Prerequisites: Permission of the instructor. Enrollment limited to 15. Preregistration required.
Comparative, cross-cultural examination of social organization and historical construction of human reproduction, with emphasis on 20th century. Topics include role of states and local and transnational ‘stratification’ of reproduction by race, class, and citizenship; eugenics; population politics; birth control; kinship as social and biological relationship; maternity; paternity; new reproductive technologies.
HRTS UN3001 Introduction to Human Rights. 3 points.
Evolution of the theory and content of human rights; the ideology and impact of human rights movements; national and international human rights law and institutions; their application with attention to universality within states, including the U.S., and internationally.

HRTS BC3850 Human Rights and Public Health. 4 points.
Prerequisites: Enrollment in the course is open to 18 undergraduates who have completed at least one core course in human rights and/or international law.
This seminar introduces students to the field of health and human rights. It examines how to advocate for and implement public health strategies using a human rights framework. It takes note of current international and domestic debates about the utility of a "human rights-based approach" to health, discusses methods and ethics of health-related human rights research, and examines case studies of human rights investigations to explore the role of human rights analysis in promoting public health.

HSPB UN2950 Social History of American Public Health. 4 points.
The purpose of this course is to provide students with an historical understanding of the role public health has played in American history. The underlying assumptions are that disease, and the ways we define disease, are simultaneously reflections of social and cultural values, as well as important factors in shaping those values. Also, it is maintained that the environments that we build determine the ways we live and die.
The dread infectious and acute diseases in the nineteenth century, the chronic, degenerative conditions of the twentieth and the new, vaguely understood conditions rooted in a changing chemical and human-made environment are emblematic of the societies we created. Among the questions that will be addressed are: How does the health status of Americans reflect and shape our history? How do ideas about health reflect broader attitudes and values in American history and culture? How does the American experience with pain, disability, and disease affect our actions and lives? What are the responsibilities of the state and of the individual in preserving health? How have American institutions—from hospitals to unions to insurance companies—been shaped by changing longevity, experience with disability and death?

PHIL V2593 Science and Religion. 3 points.
Open to all undergraduates. Not offered during 2020-21 academic year.
The course investigates what many people have viewed as a ‘quarrel’ between science and religion. It explores what science is, and what religion is, and asks what authority can offer for the various claims they make. As the natural sciences provide increased knowledge of the cosmos, is there still a place for religion? The course has no prerequisites.

PHIL UN2702 Contemporary Moral Problems. 3 points.
Questions about how people should act have historically been central to philosophy. This course introduces students to philosophy through an examination of some important moral problems that arise in the twenty-first century. The aim is not only to offer ideas for thinking through the issues covered, but also to provide tools for general moral reflection. Topics covered will include: the legitimacy of asking migrants to abandon their traditional practices, responsibilities to distant people and to future generations, abortion and genetic testing of the unborn, the proper treatment of animals, and the permissibility of war and terrorism.

PHIL UN3654 Philosophy of Psychology. 3 points.
Considers psychology from the perspective of philosophy of science and the plausibility of various philosophical positions in light of the best current theories of psychology. Examines the assumptions and explanatory strategies of past and present ‘schools of psychology’ and the implications of recent work in psychology for such perennial philosophical problems as moral responsibility and personal identity.

PHIL UN3701 Ethics. 4 points.
Prerequisites: one course in philosophy.
Corequisites: PHIL V3711 Required Discussion Section (0 points).
This course is mainly an introduction to three influential approaches to normative ethics: utilitarianism, deontological views, and virtue ethics. We also consider the ethics of care, and selected topics in meta-ethics.

PHIL V3720 Ethics and Medicine. 3 points.
BC: Fulfillment of General Education Requirement: Reason and Value (REA).
Not offered during 2020-21 academic year.
Prerequisites: Limited enrollment by permission of the instructor. First-day attendance required.
Philosophical examination of moral issues in medical theory and practice. Analysis of the ethics of the doctor-patient relationship, e.g., informed consent, truth-telling, paternalism; topics in bioethics, e.g., abortion, euthanasia, experimentation on humans; justice and access to health care; human genetics.

PHIL UN3800 PHILOSOPHY, JUSTICE AND SOCIAL ACTIVISM. 4 points.
In his Theses on Feuerbach, Karl Marx writes, “Philosophers have only interpreted the world in various ways; the point is to change it.” The questions to ask in response to Marx’s exhortation include: how do we recognize the need for change and appropriately effect it? What are the relations between our goals and the means to them? How can we better understand our goals to make the means more suitable? When we organize to produce results, what are we doing? Do we know exactly who and what we want to change? What are the “ethics of process”? What exactly do we do when we organize? A tentative definition: to organize is to bring together individuals who have common interests in a way that will enhance their power. What kind of power is this? What other forms of power are there? What is the best form of coordinating among individuals? If we better understand the dynamics of organizing, should we reconceive our goals accordingly? How do we better tap into shared values and concerns? What temptations and distractions get in the way of our goals? What problems prevent us from achieving them? Do we have goals that can be achieved? If not, how can we revise them?
**PSYC BC3387 Topics in Neuroethics. 4 points.**

BC: Fulfillment of General Education Requirement: Reason and Value (REA).

Prerequisites: BC1001 and one of the following: Neurobiology, Behavioral Neuroscience, Fundamentals of Neuropsychology, or permission of the instructor. Enrollment limited to 20 students.

Recent advancements in neuroscience raise profound ethical questions. Neuroethics integrates neuroscience, philosophy, and ethics in an attempt to address these issues. Reviews current debated topics relevant to the brain, cognition, and behavior. Bioethical and philosophical principles will be applied allowing students to develop skill in ethical analysis.

**PUBH UN3200 Introduction to Public Health. 3 points.**

An introduction to and overview of public health. Through a series of sessions with leading public health experts, this course views the multifaceted nature of public health through a prismic lens addressing key concepts, approaches, and issues of historical and contemporary import: What is public health and how has public health evolved over time? What are the core methods of public health? What are the approaches to understanding and addressing both infectious and chronic, non-communicable diseases? What role do micro- and macro-level determinants (i.e., biology and social context) play in public health? What are the global trends in population health? How does the individual life course bear on population health? How do systems, policy, and population health mutually shape each other? How are public health programs designed and evaluated? What are the limits of public health?

**SOCI UN3246 Medical Sociology. 3 points.**

Prerequisites: None

Examines the ways sociologists have studied the field of medicine and experiences of health and illness. We cannot understand topics of health and illness by only looking at biological phenomena; we must consider a variety of social, political, economic, and cultural forces. Uses sociological perspectives and methods to understand topics such as: unequal patterns in health and illness; how people make sense of and manage illness; the ways doctors and patients interact with each other; changes in the medical profession, health policies and institutions; social movements around health; and how some behaviors but not others become understood as medical problems. Course is geared towards pre-med students as well as those with general interests in medicine, health and society.

**SOCI BC3750 How Race Gets Under Our Skin: The Sociology of Race, Health, and Biomedicine. 4 points.**

One of the glaring forms of inequalities that persists today is the race-based gap in access to health care, quality of care, and health outcomes. This course examines how institutionalized racism and the structure of health care contributes to the neglect and sometimes abuse of racial and ethnic minorities. Quite literally, how does race affect one's life chances? This course covers a wide range of topics related to race and health, including: racial inequalities in health outcomes, biases in medical institutions, immigration status and health, racial profiling in medicine, and race in the genomic era.

**WMST BC3131 Women and Science. 4 points.**

Prerequisites: Enrollment limited to 18 students.

History and politics of women's involvement with science. Women's contributions to scientific discovery in various fields, accounts by women scientists, engineers, and physicians, issues of science education. Feminist critiques of biological research and of the institution of science.