FRESHMAN SEMINAR PROGRAM
PROPOSAL FORM

Please include this form with the completed proposal. You may either send your proposal electronically as an email attachment to seminars@fas.harvard.edu or as hard copy to:

Freshman Seminars Program, 6 Prescott Street, Cambridge, MA 02138

The Faculty of the Committee on Freshman Seminars meets occasionally during the fall and regularly through the spring. All proposals will be reviewed by the Committee as soon as possible after they have been received.

Instructor’s Name: Jonathan Levy

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Title of the Seminar: Urban Environmental Health

State the semester and year in which you would prefer to hold the seminar: Spring 2009

Please attach to this cover sheet:

1) a 350-500 word course description

2) a draft syllabus outlining the structure, readings, and assignments of the course or, alternatively, a list of topics, required readings, and course assignments.

3) a list of projected course expenses (e.g., guest speakers, theater tickets, etc.); please list as well any course-related trips. A field trip proposal form must be submitted for any off-campus outing, once your seminar proposal has been approved

4) a C.V., if you are a lecturer in the Faculty of Arts and Sciences
1) Course description:

The United Nations estimated that 2008 will mark the first time in human history when more than half of the population of the Earth will be living in urban settings. Although there are many benefits to urbanization, it often comes with significant environmental challenges, both in developing and developed countries. Urban residents are exposed to many different chemical and non-chemical stressors; some of these stressors may adversely influence health, some may be a consequence of activities with tremendous societal benefits, and many may do both. Other exposures and stressors may be reduced as a consequence of development and urbanization. What type of evidence and methods can be used to understand the complex effects of global urbanization? How does the nature of urban environmental health problems and their solutions differ between developed and developing countries, or between low-income and high-income people within the same country? This seminar will introduce the methods used to formally evaluate urban environmental health risks, considering these methods from scientific, quantitative, and ethical perspectives. The seminar will use multiple case studies to illustrate the key environmental health concerns and tradeoffs related to urbanization, including the various health and safety risks associated with traffic around the world, environmental implications of energy usage and generation patterns in the United States and China, and health risks related to substandard drinking water in mega-cities in developing countries. All case studies will involve both evaluation of the social and scientific underpinnings of the problem and the use of quantitative methods to better understand the magnitude of the problem and the implications of potential solutions. Seminar participants will also prepare final group projects tied to real-world cases, which may involve environmental sampling in urban areas of Cambridge/Boston or modeling of health risks in selected cities around the world. No prior academic background is necessary.
2) Draft syllabus: Topics, readings, and assignments

Note that core readings have been identified and listed below each of the class session topics, but that additional readings will be included within the course depending on the interests of the students, their identified group projects, and the nature of the weekly assignments. In addition, some readings will be divided into sections and addressed by different groups within the weekly assignments.

There will be one primary text for the course, anticipated to be:


Additional readings are drawn from the peer-reviewed literature and are generally available through the Harvard library system.

Topics/Readings:

January 28  Introduction – Mega-cities and the global burden of disease


Building Blocks

February 4  Key urban environmental exposures in developed and developing countries

Frumkin, Introduction and Chapter 13


February 11  Measuring and modeling environmental exposures

Frumkin, Chapter 4


February 18  Understanding health effects - Epidemiology and toxicology

Frumkin, Chapters 2 and 3


February 25  Quantifying environmental risks – Empirical and ethical dimensions

Frumkin, Chapter 32 and 33

Case Examples

March 4  Traffic – air pollution and health effects
Frumkin, Chapter 14 and 17

March 11  Traffic – urbanization and multiple health risks
Frumkin, Chapter 16

March 18  Electricity generation – air pollution and health effects (US)
Frumkin, Chapter 15

March 25  SPRING BREAK – NO CLASS

April 1  Electricity generation – air pollution and health effects (China)

April 8  The urban indoor environment: Developed and developing countries
Frumkin, Chapter 22

April 15  Drinking water in mega-cities in developing countries
Frumkin, Chapter 18

Final Projects

April 23  Student group presentations I

April 30  Student group presentations II
Assignments:

There will be small weekly assignments with the primary intent of helping to stimulate discussion in the subsequent class session. These will include some quantitative assignments, some field measurement or other data collection activities, and some thought questions about assigned readings. There will also be a combination of individual and group assignments. Some of the completed assignments will be posted on a class blog, to allow for information exchange within the class and discussion outside of class hours.

In addition, there will be a final group project. This will be on a topic of interest to the student group related to issues of urban environmental health, and will either be chosen from a list of topics provided by the instructor or developed independently and approved by the instructor. Each of the topics must be linked to a problem of interest to community organizations or researchers around the Boston area (although the projects themselves may address issues in any urban area around the world). This will provide a link between the student group and someone interested in the outcome of their study. When possible, the final group projects will involve either new data collection (e.g., surveys, air pollution measurements) or new analyses (e.g., evaluation of the health risk of a proposed power plant). The final products from this project will include a presentation to classmates and to the stakeholders interested in the problem, and a final paper. Note that the presentations will be done as a group but the papers will be individually written.

3) Course expenses: No significant course expenses are anticipated; any air pollution monitoring equipment to be used by the students will be provided by the School of Public Health and will have no laboratory expenses, and no field trips are planned during the semester. Any guest speakers or participants in final presentations will be from the Boston area.