EPI/HIST 805
Readings in the Historical Roots of Epidemiological Thought
Fall Semester 2018 (3-credits)

Instructor
Dr. David Barondess
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College of Human Medicine

Room
Central Conference Room (B656)

Day & Time
Monday (12:40-3:30 p.m.)

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Office Hours
By appointment

OFFICIAL COURSE LISTING:
"FS18-EPI-805-001 – Historical Roots of Epidemiological Thought"

READINGS
No textbook is required. All required readings are available on the course's D2L web site or are readily available on line. From time-to-time I may distribute less accessible readings. Please check your course web site regularly as I will update readings from time-to-time as I find timely/provocative materials.

OBJECTIVES
Understand the historical evolution of models of disease from biological and cultural perspectives. Critical thinking skills acquired in this class will help you contextualize and evaluate the rich societal backdrop that has formed, and continues to influence, key thought processes in modern epidemiology and public health.

GRADING
Grades will be determined as follows:

(1) Weekly class participation (25%)
(2) Weekly writing assignments (25%)
(3) Discussion Leader -- DL (25%)
(4) Final writing assignment (25%)

All students are expected to come to class ready to participate in a vigorous discussion concerning the weekly reading assignments.

Time permitting, we will also review my comments on your writing assignments as a group activity.
Students will be responsible for being the Presenter/Discussion Leader (DL) for one weekly (~ half the class time) discussion on a topic chosen by you, but approved by me. These are not fly-by-the-seat-of-one’s–pants efforts. Your presentation is expected to be a professional-level effort that attests to your preparation, presentation, and discussion skills. Think professional conference-level presentation in quality.

**MISSING CLASSES**
Please advise me ahead of time that you will be missing class. Please DO NOT miss the class where you are the assigned DL.

**RELIGIOUS OBSERVANCE**
Students are able to miss class to observe ANY religious occasion. However, it is your responsibility to catch up the notes on those days you are not in class. I am happy to assist you under these circumstances.

**ETIQUETTE**
The focus in each lecture is on active learning, critical thinking, and classroom participation. Please ensure your cell-phone and/or pager is switched to the 'quiet' mode during class.

**ACADEMIC HONESTY**
The Department of Epidemiology adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades, and in the all-University Policy on Integrity of Scholarship and Grades, which are included in Spartan Life: 1998 Student and Handbook and Resource Guide, and on the MSU Web site.

**PLAGIARISM**
Plagiarism is defined as presenting another person’s work or ideas as one's own. You are expected to do your work on all assignments. Students who plagiarize will receive a 0.0 grade on the assignment or test, or perhaps fail the entire course.

**ACCOMMODATIONS FOR DISABILITIES**
If you are a student with a disability who requires reasonable accommodations, please call the OPHS Disability Resource center at 353-9642 (voice) or 355-1293 (TTY). In addition, if a professional has diagnosed you to have a learning disability, please submit your diagnosis and the type of assistance you require in writing to me during the first week of classes.

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EPI/HIST 805

THE HISTORICAL ROOTS OF THE DISCIPLINE OF EPIDEMIOLOGY

Fall Semester 2018

TOPICS and READINGS
1. **SKELETAL HEALTH EPIDEMIOLOGY**

In-depth, historically-focused, case study highlighting many of the oft-confronted challenges in epidemiology and public health practice: definitional insufficiencies, complexity of appropriate case definitions, sample stratification, measures of exposure, risks, outcome measures, incorporation of evolving diagnostic modalities into therapeutic approaches, primary prevention strategies and cost containment issues.


2. **EVOLUTION of THOUGHT IN EPIDEMIOLOGY**

Here we will examine several of the macro-level concepts and ‘disciplinary trajectories’ that have guided epidemiological thought within theoretical and ‘applied’ domains. We want to examine where we have been as a discipline, and how we have evolved to see the world through the lens of contemporary epidemiological thought processes. The discussion that emerges from this week should lay the groundwork for understanding the ‘historiography’ of epidemiology, as a stand-alone discipline, and as one informing methodological approaches to health and disease. We will read from the historical roots of our discipline and tackle many of the works that represent ‘true classics’ in the history of epidemiological thought.

3. EARLY CONCEPTS OF CONTAGION

Germ theory is one of the great breakthroughs in disease understanding. But how did people think of diseases that appeared to be communicable before then. Insights into this question will emerge from reading the work of figures such as John Hunter (1728-1793), Edward Jenner (1749-1823), the discoverer of vaccination against smallpox, Jacob Henle (1809-1885), Joseph Lister (1827-1912), and Robert Koch (1843-1910).

Miasma theory was a very influential view of the origins of disease from the days of Sydenham well into the germ era. It was the force behind many sanitary improvements. We will read the work of three of the most important British sanitary reformers of the 19th century Thomas Southwood Smith (1788-1861), John Simon (1816-1904) and Edwin Chadwick (1800-1890).

- **On Continuous Molecular Changes, More Particularly in their Relation to Epidemic Diseases**: Oration delivered at 80th Anniversary of Medical Society of London by John Snow; London: John Churchill, Princes Street, Soho. 1853, pp. 146-175.


### Water Supplies in Enteric Diseases OCT 12

Among the best known historical work in epidemiology is that of John Snow (1813-1858) in working out the mode of transmission of cholera, and the efforts of William
Budd to explicate the way in which typhoid fever is transmitted. Both turned out to be importantly related to water supplies.


6. THE ROLE OF OCCUPATION  

This session addresses the perceived role of the kind of work in leading to disease. The readings are from Bernardini Ramazzini on occupational diseases in general (1633-1714), Louis Villerme on factory work (1782-1863), and the first important 20th century industrial physician, Alice Hamilton (1869-1970). We will examine Hamilton’s contributions to understanding lead and benzene as environmental poisons. From this perspective we tackle the role of occupation and SES in disease risk.

- Lippmann, M. 1989 Alice Hamilton Lecture. Lead and Human Health: Background and Recent Findings. (Presentation for the National Institute for


7. **PELLAGRA INVESTIGATIONS**

We will first focus on the seminal investigations of Casal and Goldberger, and then extend the discussion to a broader view of dietary deficiency by examining in detail the role of social identity (e.g., ethnicity, poverty, gender) within the construct of the diseased “Other.”

- Casal, Gaspar, “About the Disease Commonly called “Mal De La Rosa” in this Province” *Memorias de la Historia Natural y Medica de Asturias,* 1762, pp. 24-26.


8. **PATHOLOGY AND THE NUMERICAL METHOD (DB – paper reviews) OCT 29**

Epidemiology is very dependent upon accurate definition of cases and types of disease. It was not until pathologic changes in tissues and organs were studied systematically that a useful way of organizing disease came about. Early figures in this effort were PCA Louis and William Gerhard. Louis was also notable for the practice of assembling cases of the same disease into series and studying their characteristics, including their response to different treatments. The work of Von Reyn and colleagues will bring us to a discussion of the construction of strict case definitions (via use of infective endocarditis diagnoses) in the context of defining ‘caseness’ and in comparing clinical studies.


9. **STUDIES OF Puerperal Sepsis NOV 5**

Death of a mother in childbirth was once very much more common than now, and still causes substantial mortality in some parts of the world. In the 19th century, a remarkable number of women died in labor of a form of disseminated infection called puerperal sepsis. The ideas of Oliver Wendell Holmes and the investigations of Ignac Semmelweis led to understanding and control of this disease. But their views were controversial, and often led to heated disagreements among physicians.


10. YELLOW FEVER AND THE ROLE OF VECTORS

Yellow fever is the best example of a disease controlled very quickly, not by understanding its agent, but by understanding its insect vector. The works of Carlos Finlay, Walter Reed (1850-1906) and William Gorgas were central in this effort. Barnett provides a more contemporary view of the problem, especially as relates to Yellow Fever vaccine-induced adverse events.


11. EVOLUTION OF THE COHORT STUDY

The cohort study is viewed by Kenneth Rothman as “the archetype for all epidemiologic studies.” How did it evolve? Who first used this method? We will examine several early cohort studies, particularly focusing on the transition in epidemiology from the study of infectious diseases to chronic non-infectious diseases, and the role of chronic infectious disease (e.g., syphilis, tuberculosis) in the evolution of the new methodology.


12. SMOKING & LUNG CANCER: CASE CONTROL STUDIES  

One of the most important discoveries of 20th century epidemiology was that cigarette smoking causes lung cancer. This observation was initially made by case-control studies, four of which appeared in 1950. We will read all four of them to appreciate the subtle distinctions in emphasis among them. The works of Risch and Peto (with colleagues) provide contemporary insights into the smoking/lung cancer dynamic via case-control research strategies that focus on gender and behavioral cessation as a modifiable risk factor, respectively.


13. DEVELOPMENT OF THE RANDOMIZED TRIAL  

Randomized trials had to overcome a great deal of resistance before their acceptance as the last word in evaluation of therapy and prevention. We will read the famous trial of streptomycin treatment of pulmonary tuberculosis developed by Austin Bradford Hill (1897-1991) and the U.S. Salk vaccine polio trial of 1953-54, one of the largest prevention trials ever undertaken. We will discuss the urgency with which the research
community marshalled resources to confront the seasonal nature of the polio epidemic, examine the controversy surrounding the research design, delve into the statistical approach used to analyze/stratify the study groups, and finally, attempt to understand the potential biases introduced as a consequence of volunteers from different socio-economic strata voluntarily participating in the vaccine trials.


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**Related Literature for Those Interested in Reading Beyond the Course Requirements**

*You may find these provocative while in pursuit of your graduate degree*


[link](http://za2uf4ps7f.scholar.serialssolutions.com/?sid=google&auinit=WM&aulast=Kohrt&atitle=Physical+activity+and+bone+health&id=pmid:15514517)


Fausto-Sterling, Anne. The Bare Bones of Sex: Part 1-Sex and Gender. *Journal of Women in Culture and Society*, 2005; 30(2): 1491-1527. (Read in conjunction with the OP hx unit.)


