

History 488/884
Phil 871

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OFFICE HOURS
Mon or Wed 5:30-6:30 pm
or by appt

Nobel Prize in Medicine: Who won it; Who didn't; and Why?

Since 1901 the Nobel Prize has been the ultimate recognition of major contributions in medical science. Yet, some Nobel achievements are now viewed with disdain (eg lobotomy, DDT); others seem incomplete or undeserved because they overlook workers who made key discoveries.

The course will begin with three classes to review the philosophy and sociology of scientific discovery. Then it will shift to an exploration of the application of these theories in specific cases. By studying the work and careers of some laureates, students will become familiar with and educate each other about landmarks in twentieth-century science. In exploring the acclaim and the controversies, they will be encouraged to utilize a wide range of sources including scientific journals, newspapers, magazines, archives, and the work of other historians and philosophers.

The course will end with a consideration of the nature of commemoration as a cultural phenomenon. Although medicine is the main focus, study of relevant Nobel prizes in physics, chemistry, or peace is possible. Students may also choose to organize their readings around sub-themes, e.g., disasters, genetics, treatments, behaviour, women scientists, national or commercial interests, global health, or scientists as philosophers.

One half-term graduate/undergraduate seminar; 3 hours/wk

Mechanism: core and secondary readings,
two major essays each 30%--ie 60%
(one on a single prize; one on a general theme in several prizes)
student presentation on single Nobel prize (topic for essay #1) 25%
one essay proposal for essay #2 (two pages max!) 15% **DUE Week 7**

Educational Objectives for all students

To study some of the medico-scientific achievements recognized by the Nobel prize, be they enduring or transient.

To explore the cultural nature of celebration and commemoration.

To examine historians' work on Nobel laureates and learn to criticize their deficiencies and lacunae.

To understand the meaning of epistemology and how it applies to medical science.

To understand how some philosophers have addressed the epistemology of scientific discovery.

See also the Nomination Database

http://www.nobelprize.org/nobel_prizes/medicine/nomination/database.html

Week 1. Introduction: course business and sources.

List of prizes, Bibliography, and discussion.

Read the Will of Alfred Nobel (1 page) in course pack.

Examine Damadian advertisements in NYTimes in course pack

Judson, H. F. 2003. "No Nobel for Whining." *New York Times*, 20 October

Week 2. Alfred Nobel and the Dynamite Idea

Readings:

1. Alfred Nobel biography at the Nobel website: (See miniproject below)

http://nobelprize.org/alfred_nobel/

2. Luttenberger, Franz. "Excellence and Chance: The Nobel Prize; Case of E. Von Behring and É. Roux." *History and Philosophy of Life Sciences* 18 (1996): 225-38.

3. Zuckerman, Harriet. "The Sociology of the Nobel Prizes." *Scientific American* 217.5 (1967): 23-33.

4. Zuckerman, Harriet. "The Sociology of the Nobel Prize: Further Notes and Queries." *American Scientist* 66.Jul-Aug (1978): 420-425.

Miniproject select any other biography of Nobel be prepared to briefly analyze it in class in comparison to the short history biography at the Nobel Prize website. (use LIBRARY!)

Week 3 CHOOSE DATE AND TOPIC FOR YOUR PRESENTATION

What is a discovery in the history and philosophy of science and medicine?

Pt I Paradigms, Normal Science, and Chance

Pt II Sociology of Science: Competition, Priority, and Conflict

Readings:

1. Duffin, J. "Poisoning the Spindle," *Can Bull Med Hist* 2000, excerpt

2. Excerpts from Merton, Robert K. *The Sociology of Science: Theoretical and Empirical Investigations*. Ed. Robert K. Merton. Chicago and London: University of Chicago Press, 1973.

a) "Singletons and Multiples in Science [1961]." 352-364.

b) "Priorities in Scientific Discovery [1957]." 286-324 and

3. Brannigan, Augustine. *The Social Basis of Scientific Discoveries*. Cambridge: Cambridge University Press, 1981, 59-62, , 70-78.

Mini-project: look into the history of your favorite discovery in your own discipline—history, biochem, anatomy, etc (ask a prof if you don't have one)—relate that discovery to the readings below.

Week 4 A Nobel prize—1923, Insulin: Macleod and Banting.

Relate the history of this prize according to Bliss to the readings of the previous weeks.

Readings: Michael Bliss, *The Discovery of Insulin*

Week 5 A Nobel prize—1962, Structure of DNA: Watson, Crick, and Wilkins. Relate the history of this prize according to Watson to the readings of weeks 1-4.

Readings:

1. Book James D. Watson. *The Double Helix*

2. Klug, A. 1974. "Rosalind Franklin and the Double Helix." *Nature* 248(451): 787-788.

3. Stroh, Michael. 2003. "50th Anniversary for 'secret of life.'" *Toronto Star* 27 Feb. A4.

4. Johnson, George. 2007 "Bright Scientists; Dim Notions [Watson resigns]. *New York Times*, 28 October.

Week 6-11 student presentations on selected Nobel prizes

Presenting students must provide one article for all their classmates to read in advance of the presentation.

Readings TBA—number of weeks depends on course enrolment

Students may collaborate. Two students have double the presentation time of one student.

Week 7 ESSAY #2 PROPOSAL DUE!!

Week 12 Nobel Laureates as philosophers, priests, mavericks, & crooks. And Discussion of major papers on the prizes. ESSAY #2 DUE

Recognition and Commemoration as an act of creation.

Readings:

1. Medawar, Peter. "Can Scientific Discovery Be Premeditated?" *The Limits of Science*. New York: Harper and Row, 1984. 45-54
2. On Kary Mullis: "No Proof HIV Causes AIDS, Says Speaker [Mullis]: Biochemist Describes AZT as a Poison." *Globe and Mail* October 19 1998,; A9; "Nobel Scientist [Mullis] Questions Cause of AIDS: Us Chemist Says He Doubts HIV to Blame." *Toronto Star*. (1998): A15.
3. Mims, C. 1976." Antipodean. Carleton Gajdusek's attainments stretch beyond virology." *Nature* 263: 716-17.
4. McCarthy, M. "Nobel Prize Winner Gajdusek Admits Child Abuse." *Lancet* 349 (1997): 623.
5. Sun, M. "At Long Last, Dr Pauling Lands NCI Grant [News]." *Science* 212 (1981): 1126-7.
6. Horgan, John. "Profile: Francis H. Crick, the Mephistopheles of Neurobiology." *Scientific American*. February (1992): 32-33. 6. Various other readings.
7. Anon. 2003 Duranty's Award [Pulitzer], *Globe and Mail* 25 Oct. 2003
8. Comic book on Alexis Carrel.
9. Abbadessa G. et al. 2009 Unsung hero Robert C. Gallo. *Science*. 323(5911):206-7.
10. Charlton BG. 2007. Why there should be more science Nobel prizes and laureates - And why proportionate credit should be awarded to institutions. [Editorial] *Medical Hypotheses*. 68(3):471-3.
11. Davidson, Amy. Ralph Steinman; Death and the Nobel. *The New Yorker*, 3 October 2011.

ASSIGNMENTS. An extensive Bibliography is at the course website

Essay 1. (30%) A specific Nobel. Pick one Nobel Prize and explore the achievement, the winners, the losers, the stakeholders, and its impact. Consider why that particular discovery was seen to be important at that particular time, and consider what other historians have said (or not said) about it. How does your research on this prize relate to early course readings on discovery in science? Primary sources should include publications and autobiographical statements by the laureates themselves, contemporary reception in newspapers and journals, and historical work on the subject. *Due 1 week after your own presentation.*

Class Presentation: (25%) should be based on the research for Essay no. 1. Assign the class a related reading (needed 2 weeks before your presentation). Your presentation must include a short summary on the Nobel achievement and should foster a discussion on the subject knowing that the class will have read the one article related to your topic. *Date & topic chosen by week 3.*

Essay Proposal for 2nd Essay (15%)—select topic (see below), frame question, identify some sources. *Due by week 7.*

Essay no. 2 (30%) A more general, historiographic topic. Examine a theme in Nobel lore by comparing and contrasting at least two Nobel prizes and the histories of them. *Due end of course.*

Choose your own topic! Sample topics

Names refer to Nobel laureates or to items in bibliography.

- Nobel controversies (eg. Kantha, McCarthy, Sayre, Wainright, Watson, Weatherall)
- Nobel surgery (eg Swan, Schlich, Feliciano)
- Nobel psychiatry (eg Gorelick)
- Nobel disasters (eg. 1926, 1948, 1949)
- Nobel psychiatry (eg Gorelick, Lopez-Munoz, Frankenberg)
- Nobel Labs and Universities (eg Thorndike, Rockefeller, etc.)
- Trends in Nobel genetics/immunology/vitamins/hormones/virology/cancer
- Future laureates--topics that generate a "race"(eg. Charlton, Kevles, Dechend)
- Nobel philosophers (eg. Jacob, Monod, Medawar, Carrel, Kandel)
- Women laureates (eg. Hackier, Opfell, Quinn, Sayre, Zuckerman)
- Jewish laureates (eg Levitan)
- Canadian Laureates and their Reputations (eg. Banting, McLeod; Polanyi; Smith; Hubbel; Taube)
- Other National laureates (eg Australia, Italy, etc.)
- Nobel tales for children (eg Aaseng, Hacker, McGrayne, Worek)
- Non-laureates--people/topics who should have won? Unsung heroes (eg. Avery, Chagas, Dubos, Funk, Gallo, Rossiter, Sayre, Sime, Wainwright)
- Nobel credibility gap: autobiography vs. historical account (hard work! contrast acceptance speeches with historical accounts)
- Debunking Nobel Laureates (Carrel, Fleming, Gadjusek, Baltimore, Mullis)
- Drug Industry, Commerce, and Scientific Research (1939, 1988)
- Lag time—discovery to prize—any change? grow longer, shorter? why?

