

**Nobel Discoveries in Biochemistry and Medicine: Dynamite to Viagra®**  
**UDCC 1050-05**

Instructor: Prof. Lawrence J. Berliner, Dept. Chemistry & Biochemistry, Olin Hall 202A; 303-871-2436, 2435;  
Email: berliner@du.edu  
Date/time: Mondays/Wednesdays 1:00-2:50 (Olin Hall 103)

Texts:

*The Double Helix : A Personal Account of the Discovery of the Structure of DNA*

James D. Watson, S&S Paperback, 1998 \$14.00/new \$10.50/used

*Taking Sides: Clashing Views on Controversial Bioethical Issues*, 11<sup>th</sup> Edition; Carol Levine, McGraw-Hill, 2006 \$26.50

How does science work; how does it relate to business and society? Students from the arts, business and humanities with any interest in science will find this course challenging and exciting. High school chemistry, physics or biology is sufficient background. We will examine the thread between the discoveries of some controversial Nobel Prize laureates, explore what connects them, and how that thread might enable the next discovery. Some of the figures may be George Beadle, Francis Crick, Fredrick Sanger, James Watson, Kerry Mullis, and the businessman and scientist, Alfred Nobel.

The goal of this course is to understand the function of the scientific community and to demonstrate the connectivity of subsequent discoveries in biochemistry and the medical sciences. We will also cover salient examples in chemistry, physics, astronomy and engineering. We will discuss those most influential discoveries in the broader area of science and see how the 'scientific system' evolved from the Royal Society through the National Academies of Science, the National Institutes of Health, and European counterparts. Instead of reviewing major breakthroughs in the life sciences, we look at how and why these discoveries will affect the future careers of the students of today.

Academic expectations: a major part of the classroom time will be to weave discussion, discovery and analytical thinking. We will utilize a cooperative learning environment with student team/group projects and presentations. Class attendance/participation/discussion will be an evaluated component.

Skill improvement: the major objectives are writing skills, analytical thinking and critical discussion.

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**REVISED SYLLABUS (Rev. 1, 9/14/2005)**

Week

M, Sept 12 course objectives, plans, outings, expectations, reading/writing assignments, grading

W, Sept 14 Worksheets on group ethics discussion material; Nobel Prize trivial pursuit

Sept. 14: 7:00 p.m. *Geoslavery or Cyber-Liberation: Freedom and Privacy in the Information Age*, Gates Concert Hall, Newman Center, A panel discussion in the Bridges to the Future Lecture Series '05-'06

M, Sept 19 Group 1 –Issue 19; Group 2 –Issue 21; Group 3 -Issue 3 Group 4 -Issue 12; Group 5 –Issue 5

Tues., Sept 20, 7PM, Boettcher Aud., Dr. A. Ternay, Rocky Mtn. Ctr. Homeland Defense, "Meet the Threats" (refreshments!)

W, Sept 21 Autopsy of the presentations (Discussion of the content and process); Alfred Nobel

Sept 21, 6PM-10PM: "The Dead Guy," Acoma Center, bus leaves 6PM Schwayder Art Building

The Double Helix (J. D. Watson's) – start reading pages. vii - 74 by Oct 10 deadline; Sept 22-Sept 30: LJB in Russia

M, Sept 26 DU Student Services

1:00PM Stress and Time Management (Carrie Best, Student Health & Counseling Center)

2:00PM First-Year Student Transitions, Kristin Olson, Citizenship & Community Standards

W, Sept 28 Career Center overview, Marciso Internships, decision making, writing resume (Pat O'Keefe)

M, Oct 3; Nobel Prize Week I: Worksheets on next group discussion material; Alfred Nobel

Oct 3, 6PM-8PM, Chancellor's dinner; Ritchie Center, 4<sup>th</sup> floor

W. Oct 5 Group 1– Issue 20; Group 2– Issue 8; Group 3– Issue 9; Group 4 - Issue 10; Group 5 – Issue 14

Thurs. Oct. 6, 7PM-11PM: *El Sol Que Tu Eres (The Sun that you are)*, El Centro su Teatro, bus leaves 6PM Schwayder Art Building

The Double Helix (J. D. Watson's) – start reading pages 75-140 by Oct 26 deadline

M, Oct 10 Nobel Prize Week II; worksheets on first 74 pages of Watson's book; Alfred Nobel

Tues, Oct 11, 7PM, Boettcher Aud., Dr. J. Soma (DU Law School), John Mencer (FBI retired), "The Patriot Act" (refreshments!)

W. Oct 12 Nobel Prizes; Group Presentations - discussion of issues in first 74 pages in Watson's book (each group provides a 10 minute presentation);

M, Oct 17 Worksheets on next group ethics discussion material; Alfred Nobel and others

W. Oct 19 Group 1– Issue 1; Group 2 –Issue 2; Group 3 –Issue 3 Group 4 –Issue 15; Group 5 –Issue 7

Oct 19, 4PM-6PM: *Hunger Banquet*, Driscoll Center Ballroom (food will be provided!)

Term paper planning – all groups should schedule informal, short meetings with LJB for topic approval, help, input, advice

M, Oct 26 Worksheets on pages 75-140 of Watson's book; Nitric Oxide and nitroglycerin

Thurs, October 27th – 7:00pm Dr. Amitai Etzioni: "Rights and Responsibilities in the Age of Terrorism, Bridges to the Future Lecture Series

W. Oct 28 Group Presentations - discussion of issues on pages 75-140 in Watson's book (each group provides a 10 minute presentation); Nitric Oxide and nitroglycerin

Term paper planning – all groups should schedule informal, short meetings with LJB for topic approval, help, input, advice

M, Oct 31 Term paper planning discussions/worksheets: all Groups;

W. Nov 2 Nitric Oxide and nitroglycerin;

M, Nov 7 Watson's book Group 1– TBA; Group 2– TBA; Group 3–TBA;

Tues., Nov 8, 7PM, Boettcher Aud., Dr. Andrea van Steenhouse, "Interactions Between Stress, Psychology and Terrorism"

W. Nov 9 Watson's book Group 4 – TBA; Group 5– TBA

Frid. Nov 11, 7pm, Jeff Rosen "The Naked Crowd: How to Protect Security and Privacy in the Age of Terror, Bridges to the Future Series

M, Nov 14. Term paper presentations: Group 1; Group 2; Group 3; Group 4; Group 5

W Nov 16 last day of classes – loose ends

Friday, Nov. 16 Term paper deadline: 5PM Olin 204 (late submissions not advised as you need time to study for Final Exams)