

bio152: The Science of Race

spring 2001

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TA: Shveta Shah by learnlink

Resources:

Texts:

- Campbell, *Biology* 5th Edition
- Eisen, Westmoreland, *The Living Staircase*

Web (selected):

- PubMed at <http://www.ncbi.nlm.nih.gov/PubMed/>
- Galileo, accessible from Emory homepage
- Emory ejournals online (full text of many recent articles) at <http://170.140.53.96:591/e-journals/FMPro>

Other:

- Each other
- Learnlink bio152 conference
- Researchers

What it is

This is an entirely revamped and renovated bio152 course.

The goal of the course is to re-introduce the discussion and issues of race to the hard sciences, while at the same time continuing our evolution from last semester as independent and thinking experimental scientists. We have designed a course that integrates modern biological techniques into the rich and dangerous conversation of race, while addressing these, among many other, questions:

- Why did biology leave the issue and science of race (sometime in the 1960's) and rarely return?
- What is race?
- What, if anything, can rigorous biological research add to issues of race?
- If it can, should it?
- How does biology integrate with the history, sociology, psychology, and anthropology of race and culture and how has it influenced the way we view race and ourselves?

The first half of the semester we will address these questions focussing on disease via intensive readings and discussion interwoven with relevant experiments. Special guests will include some of the world's experts in different areas of this science, including Howard Kushner, medical historian, Doug Wallace, human geneticist, and George Ellis, South African physicist. The first half of the semester will culminate in a research paper each of you will write on a particular issue in science and race, *with significant emphasis on the science*. These papers may expand a topic we've touched or explore a new topic. They will lead into research proposals and projects, which you will carry out in April.

The second half of the term will begin with Shveta leading us around and through the sensitive but fascinating area of race and intelligence. We will then get to the heart of the course, your original experiments. They will be developed, performed, and presented as posters in groups. Additionally, each of you will write up an extensive individual lab report of your projects.

Challenge and reward

This is a new and different kind of biology class for all of us. We all know and respect each other already, which will help. It is important that we maintain that respect, but remain open to any and all ideas and not feel either overly restrained or overwhelmed by our discussion. Some of the things we will discuss will disturb us. We should feel free to express our opinions or at least hold them out there for consideration and hammer them to see if they hold up. The worst thing would be if we all agreed and hugged each other a lot; the best would be if we all learned and challenged each other and our ideas as much as possible.

Getting an A

Participation: 25%

- Much of this class, as last semester, is showing up, thinking, doing, the reading (and there's a ton of it).
- Note that many of the class sessions (many more than last semester) will go to 5:30.
- On Jan 25 and Mar 27, we go to 6 pm.
- You are expected to attend every class session in full. If you will be unable to do so, please find another class to take.

Paper: 15%

- This paper is due Tuesday March 6, **at the beginning of class**, no exceptions.
- 10 points off for every day late.
- Papers will lead to research proposals and projects

Research Proposal: 15%

- Due March 29 at beginning of class, 10 points off per day late
- Written as a group of folks with related research paper topics

Poster: 20%

- Due last two days of class
- Done as a group, will discuss 'how to make a poster' later

Write-up: 25%

- Each person does one
- Due my office Tues May 8, 5 pm, no late reports accepted
- Culmination of course, paper, proposal, experiment, poster

day by day

th jan 18

what is race?

- Tuskegee NOVA

for next time:

- Campbell, pp 446-450
- Ehrlich, from *Human Natures*
- Coon et al., from *Races: A Study of the Problems of Race Formation in Man*
- Snyderman, *How to Think About Race*, *Nat. Review*, Sept 12, 1994
- Marshal, *DNA studies challenge the meaning of race*, *Science* 282, 1998
- Rushton, from *Race, Evolution, and Behavior*

t jan 23

syphilis: infectious disease

- discussion/lecture

for next time:

- Orr, *Love it or Lose it, the Coming Biophilia Revolution*, from *Earth in Mind*
- Gorbach et al., from *Infectious Diseases: Syphilis*
- Diamond, *Race Without Color*, *Discover*, Nov, 1994 at <http://www.discover.com/archive/index.html>
- Rothman, *The Shame of Medical Research*, *NY Review of Books*, Nov 30, 2000
- Benedek and Erlen, *The scientific environment of the Tuskegee Study of Syphilis, 1920-1960*, *Persp Biol Med* 43, 1999.

th jan 25

- discussion

- **David Orr 4-6 pm Cox Hall

for next time:

- Campbell, protein structure, hemoglobin, oxygen-loading electrophoresis, pp. 68-76, 374, 438-440, 834-837
- Pauling, *Sickle cell anemia, a molecular disease*, *Science* 110, 1949
- History http://ublib.buffalo.edu/libraries/projects/cases/sickle_cell1.html

t jan 30

sickle-cell anemia: genetic disease

- experiment: protein electrophoresis

for next time:

- Provine, *Genetics and Race*, *Science as a Way of Knowing*
- Tapper, *An 'anthropathology' of the 'American Negro': anthropology, genetics, and the new racial science, 1940-1952*, *Soc Hist Med*, 10, 1997

th feb 1

- Guests: Howard Kushner on sickle cell, history, disease

Melissa Creary, former student on career in sickle cell, having it

for next time:

- Campbell 412-464: think *Race* and what we've done so far as you read
- Feldman and Lewontin, *The heritability hang-up*, *Science* 190, 1975.

t feb 6

Population genetics and heritability discussion

for next time:

- Campbell, 143, 811-826, 846
- Reading: Cholesterol synthesis, precursor of vitamin D, testosterone, etc
- The Physiology and Pharmacology Teaching Webserver
<http://plpk04.plpk.uq.edu.au/pracbooks/pracs/Hcn/hcn.htm> (just read part on how to take blood pressure and what it means)
- Cabe, Saving hearts that grow old, *Sci Amer Presents*, June, 2000, at <http://www.sciam.com/specialissues/0600aging/0600cabe.html>

th feb 8

blood pressure, cholesterol: genetic? infectious? environment?

• experiments: Blood pressure and HDL/LDL determination

for next time:

- Klag et al., The association of skin color with blood pressure in US Blacks with low socioeconomic status, *JAMA* 265, 1991
- Keil et al., Skin color and mortality, *Amer J of Epidemiology* 136(11), 1992

t feb 13

• discussion

for next time:

- Satel, The Indoctrinologists are Coming, *Atl Monthly* Jan 2001 at <http://www.theatlantic.com/issues/2001/01/satel.htm>
- Krieger and Sidney, Racial discrimination and blood pressure: The CARDIA Study of Young Black and White Adults, *Amer. J. Pub Health* 86(10), 1996—available through Emory ejournals.

th feb 15

for next time:

- Selected newspaper articles on James Watson's talk on PomC
- responses to the article
- Mullis, The Unusual Origin of PCR, *Sci Amer* April, 1990
- Specific article on PCR will perform

t feb 20

proopiomelanocortin (pomC): hormonal issues

• experiment: PCR, PCR-CD

for next time:

- Specific articles on the many effects of pomC
- Campbell, Chap 45: read carefully—how does pomC fit in?

th feb 22

• discussion

for next time:

- *Living Staircase*, Chap 6

t feb 27

• experiment: evolutionary enzymes

for next time:

- Rajakumar, Pellagra in the US: A historical perspective, *South Med J* 93, 2000 (available from ejournals)
- King, Pellagra—ancient and modern, *JAMA*, LIII, 1909 (**CONT next page**)

<ul style="list-style-type: none"> •Siler et al., Summary of the first progress report of the Thompson-McFadden Pellagra Commission, <i>JAMA</i>, LXII, 1914 •Folkes, The Negro as a health problem, <i>JAMA</i>, 1910
<p><u>th mar 1</u> pellagra: dietary deficiency <ul style="list-style-type: none"> •discussion for next time: <ul style="list-style-type: none"> •Read over measurement of niacin protocols •Niacin background at www.roche.com/vitamins/what/basics/niacin.html •Henderson, Niacin, <i>Ann Rev Nutr</i> 3, 1983 </p>
<p><u>t mar 6</u> <ul style="list-style-type: none"> •experiments: determination of niacin in organism and food samples for next time: <ul style="list-style-type: none"> •research paper due </p>
<p><u>th mar 8</u> <i>Paper due</i> for next time: <ul style="list-style-type: none"> •Herrnstein and Murray, from <i>The Bell Curve</i> •Gould, from <i>The Mismeasure of Man</i> •Devlin, ed., from <i>Intelligence, Genes, and Success: Scientists Respond to the Bell Curve</i> </p>
<p><u>t mar 20</u> Intelligence <ul style="list-style-type: none"> •Proposal prep, brainstorming </p>
<p><u>th mar 22</u> Proposal prep, brainstorming for next time: <ul style="list-style-type: none"> •George Ellis readings •Pennisi, Genetic Study Shakes Up Out of Africa Theory, <i>Science</i> 283, 1999, through Emory ejournals •Bower, DNA's Evolutionary Dilemma, <i>Science News</i>, Feb 6, 1999 </p>
<p><u>t mar 27</u> <ul style="list-style-type: none"> •Guests: Doug Wallace on 'Out of Africa hypothesis' George Ellis, 4-6 Cox Hall on science, race, South Africa for next time: <ul style="list-style-type: none"> •research proposal due </p>
<p><u>th mar 29</u> <i>Proposal due (group)</i> <ul style="list-style-type: none"> •Discuss proposals, start projects, get materials for next time: <ul style="list-style-type: none"> •continue original lab projects </p>
<p><u>t apr 3</u> Original group lab projects thru apr 23 for next time: <ul style="list-style-type: none"> •<i>Living Staircase (LS) Chap 1-2</i> </p>

<u>th apr 5</u> for next time: <ul style="list-style-type: none"> •LS Chap 3-4
<u>t apr 10</u> for next time: <ul style="list-style-type: none"> •LS Chap 5-6 (again)
<u>th apr 12</u> for next time: <ul style="list-style-type: none"> •LS Chap 7-8
<u>t apr 17</u> for next time: <ul style="list-style-type: none"> •LS Chap 9-10
<u>th apr 19</u> for next time: <ul style="list-style-type: none"> •posters
<u>t apr 24</u> Posters on res. projects
<u>th apr 27</u> more posters

TUESDAY MAY 8, 5 pm LAB REPORT DUE