

MCDB 22
“Biotechnology and Society”
Summer Session 2002

Instructor: Dr. Pat Johnson

Week # 1 (June 24 and 25))

Lecture: Introduction to Class

Basic Biology Lectures;

Central Dogma, Proteins, Nucleic Acids, Immune System

Discussion: "Necessity's Mother" by Jared Diamond from Guns, Germs and Steel

"Why the Future Doesn't Need Us" by Bill Joy from *Wired*

Week # 1 (June 26 and 27)

Lecture: Basic Biology

Medicine and the Pharmaceutical Industry

Discussion: "Consulting Biotech's Oracle" by John Cohen from *Technology Review*

Week # 2 (July 1, 2 and 3)

Lecture: Medicine and the Pharmaceutical Industry

Discussion: "Speeding Drug Discovery" by Gary Taubes from *Technology Review*

Week #3 (July 8 and 9)

Lecture: Human Genome-Genomics

Proteomics

DNA MicroArrays/gene chips

Discussion: "The Genome Warrior" by Richard Preston from *The New Yorker*

"The Proteomics Payoff" by John Cohen from *Technology Review*

"Glycomics" by Erika Jonietz from *Technology Review*

"DNA Chips Target Cancer" by Marc Whortman from *Technology Review*

Week #3 (July 10 and 11)

Lecture: Stem Cell Research

Genetic engineering

Discussion and Lecture: finish reading book, The Second Creation

Week #4 (July 15 and 16)

Lecture: Midterm (30% of grade)

Cloning

Discussion: "The First Human Cloned Embryo" by Cibelli et. al. from *Scientific American*

Week # 4 (July 17 and 18)

Lecture: Forensics

DNA Fingerprinting

Discussion: "DNA on Trial" by Peter Boyer from *The New Yorker*

Week #5 (July 22 and 23)

Lecture: Bioweapons

 Anthrax

 SmallPox

Discussion: "The Ames Strain" by Peter Boyer from *The New Yorker*

 "The Demon in the Freezer" by Richard Preston from *The New Yorker*

Week #5 (July 24 and 25)

Lecture: Agriculture Biotech

Discussion: "Tragically, New Zealand might be headin' down the transgenic treadmill" published

by Cropchoice.com

 "The Pharmageddon Riddle" by Michael Specter from *The New Yorker*

 "The Trouble with Fries" by Malcolm Gladwell from *The New Yorker*

Week #6 (July 29, 30, 31)

Lecture: catch up, Guest Lecture, Review

 Paper Due (Aug. 1--20% of grade)

FINAL EXAM: (50% of grade--time TBA)

Discussion: "In the Forests of Gombe" by Jane Goodall from *Orion*

***Books:

The Second Creation: Dolly and the Age of Biological Control by Wilmut, Campbell and Tudge
 Molecular Biology (Instant Notes) by Turner, McLennan, Bates and White (2nd edition)