HC70A Winter 2008
Genetic Engineering in Medicine, Agriculture, and Law
Professor Bob Goldberg

Lecture 8 (Revised)
Science & The Constitution: Regulating Science & Genetic Engineering

TEXT READING
Chapters 12 & 13
SELECTED REFERENCES


THEMES

1. Historical Attempts to Regulate Science—The Genetic Engineering Controversy
2. Government of the United States
3. What is in the Constitution About Science—Directly & Indirectly?
4. Can Scientific Inquiry and Research Be Regulated?
5. Can Experimentation Be Regulated Directly?
6. Case Studies in Regulating Science Directly
7. Can Science Be Regulated Indirectly?
8. Regulating Science—A Summary
Bonus Point Assignment
Inherit The Wind

In One 400 Word Paragraph (12 pt Font, Single Space)

What, Your Opinion, Is the “Take-Home” Message of “Inherit The Wind” and How Does It Relate To Science?

10,000 Bonus Points (Hand In Today)

I Viewed “Inherit The Wind” In Its Entirety

Signature______________________________

Attempts to Regulate Genetic Engineering at the Local, State, & Federal Levels

The Recombinant-DNA Debate

The four-year-old controversy over the potential biohazards presented by the gene-splicing method and the effectiveness of plans for their containment is viewed in a broader context

Cohen-Boyer-1973

Scientists Report Using Bacteria To Produce the Gene for Insulin

5/24/77

Rat Insulin Genes: Construction of Plasmids Containing the Coding Sequences

Abstract. Recombinant bacterial plasmids have been constructed that contain complementary DNA prepared from rat liver or Langerhans messenger RNA. Three plasmids contain cloned sequences representing the complete coding region of rat proinsulin I, part of the proinsulin I prepropeptide, and the carboxyl-terminal region of the mRNA. A fourth plasmid contains sequences derived from the A-chain region of rat proinsulin II.

RAEL ESLER, JIAO SHIH
JOHN CARREON, RAYMOND FUKET
EUGENIO YEH, WILLIAM J. ROTTEN
EDWARD RODRIGUEZ, LEWIS M. GREEN
Department of Medicine and Pediatrics, University of California, San Francisco, CA 94143

SCIENCE, VOL. 196 17 JUNE 1977

Scientists Fear Bid to Regulate Genetic Studies

By HAROLD M. SCHMECK Jr.
Special to The New York Times

2/20/77
GENE-SPLICING CONCERN IN BOSTON
SPECIAL TO THE NEW YORK TIMES
Published: May 31, 1981

HARVARD AND TOWN DEBATE GENE STUDY

Cambridge Council to Hear a Report urging Tight Controls—Some Fear Tests Could Create New Disease

By JOHN KIFNER
Special to The New York Times

"Threats of diseases and monsters that could be brought about by recombinant DNA…gene splicing should be banned within the city limits."

CALIFORNIA WEIGHING CURBS ON GENE STUDY

Proposed Safeguards in Research on Genetic Hybrids Would Be First Imposed by a State

Special to The New York Times

2/7/77
Congress is likely to delay until at least next year DNA research regulations once thought critical.

Cambridge Council Allows Harvard DNA Research

CAMBRIDGE, Mass., Feb. 7 (UPI) — The

PRINCETON RESEARCH ON DNA IS PERMITTED

Moderate-risk project is approved by Borough Council, 6 to 1

Special to The New York Times
June 21, 1986

**U.S. UNVEILS RULES ON BIOTECHNOLOGY**

By KEITH SCHNEIDER, SPECIAL TO THE NEW YORK TIMES

---

What About Recent Attempts to Regulate Science at the Local, State, & Federal Levels?
September 22, 2002

California Law Permits Stem Cell Research
Gov. Gray Davis today signed a law that explicitly allows research on stem cells from fetal and embryonic tissue.

April 12, 2007

Stem Cell Bill Clears Senate, and Bush Promises a Veto
By MICHAEL LUO
March 6, 1997

G.O.P. Lawmaker Proposes Bill to Ban Human Cloning

By KATHARINE Q. SEELYE

December 1, 2002

National Briefing | West: California: No-Glow Zone

State regulators refuse to allow sales of the first bio-engineered household pet, a fish that fluoresces. The so-called GloFish are expected to go on sale elsewhere next month. California is the only state with a ban on genetically engineered species.
What About Other Legal Issues Dealing With Genetic Engineering?

Life Is Patentable

SCIENCE MAY PATENT NEW FORMS OF LIFE, JUSTICES RULE, 5 TO 4

6/17/1980
A Brief History of Patenting "Life"

**1969**
The Supreme Court rules that bacteria are not products of nature and are not eligible for patenting.

**1980**
The Patent and Trademark Office removes patents on the human genome.

**1990**
The Human Genome Project begins.

**1995**
A Supreme Court ruling holds that simply combining naturally occurring genetic material into a new organism is not patentable.

**2012**
Congress passes the Biopiracy Act, which prohibits the taking of genetic material from public lands and publicly funded research without proper consent.

**2015**
The patent system for natural products is modified to include more protection for naturally occurring substances.
One-Fifth of Human Genes Have Been Patented, Study Reveals

Stefan Lovgren
for National Geographic News
October 13, 2005

A new study shows that 20 percent of human genes have been patented in the United States, primarily by private firms and universities.

Who Has Patents on Your Genes?

**WHO OWNS THE PATENTS?**

YEARLY U.S. PATENTS RELATED TO DNA OR RNA
The granting of patents involving parallel Elias, including from recombinant, patented humans and transgenic (“knockout”) genes, probably because of tightening regulations. The numbers of most of these patents are listed in the table (below).

**PATENTS HUMAN GENES**
As the pie chart shows, private interest in the US was the largest holder of patents from the 1939 homogenization in the National Center for Biotechnology Information database as of 1/1/2006.

**LARGEST HOLIDERS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Number of Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genentech, Inc.</td>
<td>1,000</td>
</tr>
<tr>
<td>Genzyme Corporation</td>
<td>1,500</td>
</tr>
<tr>
<td>Roche Diagnostics</td>
<td>800</td>
</tr>
<tr>
<td>Amgen</td>
<td>600</td>
</tr>
<tr>
<td>Merck</td>
<td>500</td>
</tr>
<tr>
<td>Abbott</td>
<td>400</td>
</tr>
<tr>
<td>Genomics, Inc.</td>
<td>300</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>200</td>
</tr>
<tr>
<td>Wyeth</td>
<td>100</td>
</tr>
<tr>
<td>Eli Lilly</td>
<td>100</td>
</tr>
</tbody>
</table>

**CATEGORIES OF PATENTS**
- Private A/B
- Public A/B
- University
- Other

Scientific American, February 2006

Organization of the United States Government

NO Precedent For This Form of Government in 1789—“Invented” From Scratch!

CONSTITUTION

Checks & Balances

CONGRESSIONAL

EXECUTIVE

JUDICIAL

The Constitution

The House of Representatives

The Senate

The President

The Vice President

The Supreme Court

The Constitution
Marbury v. Madison-1803

The critical importance of Marbury is the assumption of several powers by the Supreme Court. One was the authority to declare acts of Congress, and by implication acts of the president, unconstitutional if they exceeded the powers granted by the Constitution. But even more important, the Court became the arbiter of the Constitution, the final authority on what the document meant. As such, the Supreme Court became in fact as well as in theory an equal partner in government, and it has played that role ever since.

Chief Justice John Marshall

Activist Judges?
Voting Rights, Civil Rights, Age & Gender Discrimination
Affirmative Action, etc.

How Does the Constitution Affect Science Directly or Indirectly?

<table>
<thead>
<tr>
<th>Article or Amendment</th>
<th>What Is Application?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article I, Section 8.1</td>
<td>Promote the General Welfare</td>
</tr>
<tr>
<td>Article I, Section 8.8</td>
<td>Patents &amp; Copyrights</td>
</tr>
<tr>
<td>Article I, Section 8.18</td>
<td>Make All Laws to Execute (Police Powers)</td>
</tr>
<tr>
<td>Amendment I</td>
<td>Freedom of Speech</td>
</tr>
<tr>
<td>Amendment IV</td>
<td>Searches &amp; Seizures</td>
</tr>
<tr>
<td>Amendment V</td>
<td>Due Process-Privacy-Federal</td>
</tr>
<tr>
<td>Amendment X</td>
<td>Powers Reserved to the States (Police Powers)</td>
</tr>
<tr>
<td>Amendment XIII</td>
<td>Slavery</td>
</tr>
<tr>
<td>Amendment XIV</td>
<td>Due Process-Privacy-State</td>
</tr>
<tr>
<td>Preamble</td>
<td>Promote the General Welfare</td>
</tr>
</tbody>
</table>
What Does the Constitution Say Directly About Science?

Is the Word “Science” in the Constitution?

1. Article I - Section 8.8

The Congress shall have the Power:

[8] “To Promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their Writings and Discoveries”

**Keyword**: Inventors not Science. Wanted to Promote Economic Development & Promote a National Economics Policy Grounded in Property Rights. That is, Entrepreneurship!

**PATENTS!!**
2. **Article I - Section 8.18**

The Congress shall have the Power:

[18] “To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department of Officer thereof.”

**Key Concept:** Congress Established Patent and Trademark Office (USPTO) and Intellectual Property laws

---

How Does the Constitution Deal *Indirectly* With Science?

Without Using the Word Science or Mentioning the Progress of Science and Discoveries?
1. Preamble

“We the People of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defense, promote the General Welfare......”

**Key Concept:** General Welfare-Which Can Apply to Almost Everything Dealing With Science, Health, Medicine, Agriculture, and Safety!

2. Article I - Section 8.1

The Congress shall have the Power:

[1] “To lay and collect Taxes, Duties, Imposts, and Excises, to pay the Debts and provide for the common Defense and general Welfare of the United States; but all Duties, Imposts, and Excises shall be uniform throughout the United States”

**Key Concept:** Provide For the General Welfare-Which Can Apply to Almost Everything Dealing With Science, Health, Medicine, Agriculture, and Safety!
2. **Article I - Section 8.1**

**Congress Established Under This Article:**

- Smithsonian Institute (1846)
- National Academy of Sciences (1863)
- National Bureau of Standards (1901)
- Public Health Service (1912)
- National Institutes of Health (1930)
- National Science Foundation (1946)
- USDA, EPA, FDA, CDC, NASA, etc., etc.

**Key Concept:** All Vested Under Constitutional Grant to Congress to Promote the General Welfare—All Involved in Science, Medicine, Agriculture, & Technology Activities

3. **Amendment I**

**Freedom of Speech and Expression:**

“Congress shall make no Law respecting an establishment of religion, prohibiting the free exercise thereof; or abridging freedom of speech, or of the press, of the right of the people peacefully to assemble, and to petition the Government for a redress of grievances.”

**Key Concepts:** Freedom to Think About Science, Publish, and Discuss Science in Meetings and Laboratories
4. **Amendment IV**

Searches and Seizures:

“The right of the people to secure their **persons**, houses, **papers**, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon **probable cause**, supported by Oath or affirmation, and particularly describing the place to be searched and the **persons or things** to be seized”

**Key Concepts:** Right Against Unreasonable Searches to Your Own “Body Parts,” Science Writings, and Experimental Materials

4. **Amendment V**

Due Process:

“No Person shall be held to answer for a capital, or otherwise infamous crime, unless on presentment or indictment of a **Grand jury**, except in cases arising in the land or navel forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be a subject for the same offense to be twice put in jeopardy of life and limb, nor shall be compelled in any criminal case to be a witness against himself. **Nor be deprived of Life, liberty, or property, without due process of law**; nor shall any property be taken for public use without just compensation.”

**Key Concepts:** Right to Life & Liberty=Privacy=Reproductive Rights  
Medical Treatment (Refusal/Acceptance)
5. Amendment XIII

Involuntary Servitude:

Section 1: “Neither slavery nor involuntary servitude, except as punishment for crime whereof the party shall have been duly convicted, shall exist with the United States, or any place subject to their jurisdiction.”

Section 2: “Congress shall have the power to enforce this article by appropriate legislation.

Key Concept: No Slavery or Involuntary Servitude—Clones or Patenting Humans

6. Amendment XIV

State Due Process:

Section 1: “All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and the State where they reside. No State shall enforce any law which shall abridge the privileges and immunities of the United States; nor shall any State deprive a person of life, liberty, or property without due process of law; nor deny any person within its jurisdiction the equal protection of the laws.”

Sections 2, 3, and 4: (2) Proportional reduction of representatives by number of males who participated in rebellion; (3) exclusion of previous members of congress, judiciary, etc. who participated in rebellion from holding public office, (4) pay no debt related to rebellion or owning slaves.

Key Concept: Right to Life & Liberty=Privacy=Reproductive Rights Medical Treatment (Refusal/Acceptance) at State Level
6. **Amendment X**

Powers Not Delegated to the United States:

“The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.”

- *Gibbons vs. Ogden (1824)* - Justice John Marshall - “that immense mass of legislation which embraces everything within a territory or state....”
- *Brown vs. Maryland (1827)* - Justice John Marshall - defined the totality of state legislative power the “police powers.”
- *Barnes vs. Glen Theatre, Inc. (1991)* - Justice William Rehnquist - “the traditional police powers of the states is defined as the authority to provide for the public health, safety, and morals”

**Key Concept:** State Promotion of General Welfare=Police Powers

---

How Do These Articles and Amendments Apply to Science?
Article I - Section 8.1

Promote the General Welfare: Federal “Police” Powers

- Fund Science Research & Exploration
- Regulate Health (e.g., disease outbreaks)
- Regulate Medical Testing Devices/Services (DNA Testing)
- Regulate Drugs
- Regulate Food Additives
- Regulate Releases Into the Environment (GMOs)
- Regulate Lab Conditions
- Regulate Private DNA Testing/Sequencing Services
- Establish DNA Databases

Article I - Section 8.8

Intellectual Property

- Regulate Patents (genes, genetic engineering, cells)
- Regulate Copyrights (software)
- Regulate Trademarks (biotech companies, drugs)

What IS Patentable & What Are the Rules (e.g., 20 y)?
Article I - Section 8.18

Make Laws to Execute Powers

- Intellectual Property Laws & USPTO
- Agencies to Promote and Regulate Science (NSF, NIH, CDC)
- Public Health Laws
- Laws Regarding Science Funding
- CODIS (FBI)-DNA Database
- OSHA-Lab Safety
- FDA, CDC, etc.

Amendment X

Police Powers to States & Localities

State Funding and Regulation of:
- Science Research & Exploration
- Health (e.g., disease outbreaks)
- Medical Testing Devices/Services (DNA Testing)
- Drugs (as long as not interstate commerce)
- Food Additives
- Releases Into the Environment (GMOs)
- Etc.
Amendment IV

Searches and Seizures

- Body Parts (e.g., hair)
- Saliva (DNA testing)
- Blood (DNA testing)

Must Have Probable Cause
∴ No DNA Sampling “Sweeps”-For Example an Entire An Entire Neighborhood

Amendments V and XIV

Federal Due Process (Right to Privacy)
State Due Process (Right to Privacy)
Right to Life (Medical Treatment)

- Procreative Choice-Terminate Pregnancy (genetic testing: PGD, amniocentisis, chorionic villi sampling)
- In Vitro Fertilization
- Stem Cells
- Birth Control
- Cloning
- Medical Treatment (life)
Amendment XIII

Slavery and Involuntary Servitude

- Patenting Humans
- Owning Human Clones

Can Scientific Inquiry and Research Be Regulated?
HAVE AN ABSOLUTE RIGHT TO CARRY OUT SCIENTIFIC INQUIRY AND RESEARCH


2. Freedom of the Press Includes Right to Publish - Have Right to Publish Scientific Theories, Hypotheses, and Results. BUT NOT ABSOLUTE (Freedom of Speech is not absolute). Therefore, could be outweighed by PUBLIC INTEREST (e.g., publishing how to make bioweapons or a nuclear bomb).

3. Freedom to Assemble Peacefully - Have Right to Come Together in a Meeting, Conference, and/or Laboratory to Do Research and Communicate Research Results and Exchange Ideas, Seek Truth, and/or Learn About Science and Nature.

YES-HAVE AN ABSOLUTE RIGHT TO THINK, IMAGINE, FORM GROUPS, ARGUE IDEAS, AND DO RESEARCH

BUT WHAT ABOUT ACTUALLY CARRYING OUT EXPERIMENTS IN A LABORATORY OR IN A HOME, OR BUSINESS?

CAN EXPERIMENTATION (e.g., recombinant dna, stem cells) BE REGULATED?
THERE IS NO FUNDAMENTAL RIGHT OF SCIENTIFIC INQUIRY TO CARRY OUT EXPERIMENTS!

1. When Moving From Reflection, Theory, Hypothesis, and Thought to TESTING AND EXPERIMENTATION - Move From World of Speech (talking, publishing) to WORLD OF ACTION AND CONDUCT.

2. Can Distinguish Between Research That is Hazardous or Potentially Hazardous and That Which is Not Hazardous (e.g., testing bombs in your house; recombinant DNA).

3. Experimentation Triggers Public Welfare Considerations

4. Freedom to Pursue Knowledge is Distinguishable From Right to Choose Method For Achieving That Knowledge (e.g., experimentation methods and approaches).

Experimentation CAN BE Regulated Directly By Law and/or Indirectly By Funding!

How Can Experimentation Such As Genetic Engineering Be Regulated Directly?

“If Inherently Hazardous to Protect the Welfare of the Public and/or an Individual”

Case #1—Recombinant DNA
Cambridge, MA. City Council—1977

• Facts: Cambridge City Council Tried to Ban All Recombinant DNA Experiments in the City of Cambridge, Including Harvard University. "Threats of diseases and monsters that could be brought about by recombinant DNA…..gene splicing should be banned within the city limits."

• Outcome: After a Heated Debate, the Cambridge Experimental Review Board (CERB) Recommended Going Forward With recombinant DNA Under NIH Guidelines. “A citizen’s jury (CERB) of lay people and scientists came to a sensible conclusion, and that was the ordinance that passed.”
Case #2-Sale of Genetically Engineered GloFish in CA-2003

• **Facts:** Fish and Game Commission of CA Was Asked to Renew License to Do Research on Genetically Modified Fish
• **Outcome:** Citing ethical concerns, state regulators Wednesday refused to allow sales of the first bio-engineered household pet, a zebra fish that glows fluorescent. The 3-1 vote came moments after commissioners approved the state's 14th license for research into genetically modified fish. But commissioners drew the line on permitting widespread sales of a biotech fish for pure visual pleasure.

**Background:** California adopted its regulations for fear genetically modified farmed fish, such as salmon, could get loose and devastate the state's wild populations. "Welcome to the future. Here we are, playing around with the genetic bases of life," Schumchat said. "At the end of the day, I just don't think it's right to produce a new organism just to be a pet. To me, this seems like an abuse of the power we have over life, and I'm not prepared to go there today."

Case #3-Release of Transgenic Rice Containing Human Proteins in KS-2007

• **Facts:** Ventria, Inc. Applied For a Permit to Grow Rice With Human "Pharmaceutical" Proteins in Kansas
• **Outcome:** SUPPLEMENTAL PERMIT CONDITIONS For Release of Rice Containing Genes for Lactoferrin, Lysozyme or Serum Albumin. USDA-APHIS-BRS Permits 06-278-01r, 06-278-02r and 06-285-02r.

**Background:** Farmers Worry About Genetically Modified Rice Approval
WASHINGTON, DC, May 21, 2007 (ENS) - The National Farmers Union expressed "great concern" over today's approval by the U.S. Department of Agriculture's Animal Plant and Health Inspection Service, APHIS, to allow Ventria Bioscience to plant rice that is genetically modified to produce pharmaceuticals in Kansas. "This is as an important development for Kansas farmers, who stand to benefit from the additional income." Polansky said. "They also have the satisfaction of knowing they are helping provide affordable healthcare products to children who desperately need it."

**Principle:** Potential Hazard to Environment and/or Food Supply
Case #4 Bioterrorism: Congressional Legislation to Improve Public Health Preparedness and Response Capacity-2002

**Facts:** To Protect Nation From Bioterrorism Attacks After 9/11 and Anthrax “Attacks” on Congress

**Outcome:** Bioterrorism Preparedness Act of 2002

**Background:** Funds For Research on Pathogens To Uncover Knowledge Required to Counteract Bioweapons’ Attacks (e.g., antibiotics, vaccines). Registration of all human pathogens and pathogen research in US Laboratories.

**Principle:** Public Safety/Welfare Risk

Case #5 Human Cloning Laws-2008

**Facts:** To Regulate Cloning of Human Beings

**Outcome:** Varies By State. California Business And Professions: 16004-5 Health & Safety, 24185, 24187, 24189, 12115-7. **Prohibits reproductive cloning.** Allows therapeutic cloning. Permits cloning for research; provides for the revocation of licenses issued to businesses for violations relating to human cloning; prohibits the purchase or sale of ovum, zygote, embryo, or fetus for the purpose of cloning human beings; establishes civil penalties.

**Principle:** Cannot Be 100% Certain That Health and Welfare of a Cloned Child Will be “Normal.” Might be challenged on “right to privacy-procreative choice issues

*See:* http://www.ncsl.org/programs/health/genetics/rt-shcl.htm for state by state list
Case #6 Human Vitro Fertilization Laws-2008

• **Facts:** To Regulate Egg Donors For Stem Cell Research

• **Outcome:** The Governor of California Arnold Schwarzenegger has signed into law a bill that prevents both private and state-funded laboratories from paying women to donate eggs for human embryonic stem (ES) cell research. The Reproductive Health and Research Bill (SB1260), sponsored by state Senators Deborah Ortiz and George Runner, will limit compensation to reimbursement for direct expenses incurred by egg donors. It also says that women who are considering donating eggs must be fully informed of the potential risks, and that they must provide both written and oral consent before undergoing the procedure.

• **Principle:** Protect Health and Welfare of Donor and Society

---

**Can Think But Can't Always Act!**
How Can Experimentation Be Regulated Indirectly?

Regulate Through Power of Funding and Research $

1. **No Constitutional Right to Obtain Funding For Research at Federal, State, and Local Levels**
   a. Federal Embryonic Stem Cell Research Restricted
   b. Must Apply For Grants Which Are Merit-Based and Peer-Reviewed

2. **Must Abide By Conditions of Funding Agencies to Obtain Research**
   a. Recombinant DNA Guidelines
   b. Human Institutional Review Boards (IRBs)
   c. Release of GMOs Into the Environment
Direct and Indirect Regulation of Science, Research, and Experimentation: Summary

1. Recombinant DNA—Gene Splicing Experiments
   a. Directly By Regulation at Federal, State, and Local Levels By Police Powers To Protect the General Welfare
   b. Indirectly By Funding Agencies

2. Transgenic Microbes, Animals, and Plants
   a. Release Into The Environment, Altered Food Composition, Use as "Pesticides."
   b. Directly By Police Powers and Indirectly By Funding Requirements

3. In Vitro Fertilization and Stem Cells
   a. Medical Licensing, Instrumentation, Tests, Use of Embryos For Research.
   b. Directly By Police Powers and Indirectly By Funding Requirements (Bush's Executive Order on Funding For Human Stem Cells)

4. Human Reproductive and Therapeutic Cloning
   a. Directly By Police Powers and Indirectly By Funding Requirements
   b. But...Little Case Law

Human Reproductive and Therapeutic Cloning

   a. "If the Fourth and Fifth Amendments were described as protections against government intrusions of the sanctity of a man’s home and the privacies of life."
   b. We deal with a right to privacy older than the Bill of Rights"
   c. Use of contraception "concerns a zone of privacy created by several constitutional guarantees— which is an aspect of the liberty protected by the due process clauses of the Fourteenth and Fifth Amendments."
   d. "If a law against a totalitarian limit on family size is a complete variance with our constitutional concepts, then a law outlawing birth controls is at variance.
   e. "If the right to privacy means anything, it is the right of an individual, married or single, to be free from unwarranted government intrusion into matters affecting a person as to whether to have a child."
   f. Personal autonomy over one’s body and liberty to act in certain ways.
2. Roe Vs. Wade—1973
   a. Right of a woman to terminate pregnancy in first two trimesters
   a. Unconstitutional—Right to use procedures to bring about pregnancy
   a. Unconstitutional if necessary to preserve health and welfare of mother

Compelling State Interest To Protect Health and Welfare of Child (Be “Normal”) and Mother (Medical Treatment!!)