15. 1960s & 70s

Transition to the 60s and 70s
- S&T in the 60s
  - Problems & over-confidence
  - Political & social change in the 60s & 70s

Science and Technology in the 1960s
- Strong growth
- Strong government presence
- Non-government
- New government activities
- University research, strong and growing
- Major issues
- Some problems are emerging
- Conclusions drawn, mid-1960s
- Glory days may have come to an end
- Science policy makers understood that they were in for an uncertain future
- Did not and probably could not have anticipated what was to come
- Some of the problems were internal to science

Project Mohole
- Overview
  - Major science project, late 1950s and early 1960s
  - Objective - to drill a hole through the earth's crust
  - Advanced science and technology
  - Raised questions about how science is planned and funded
- Background:
  - Earth’s "crust" 3 - 40 miles thick
  - rock "mantel" 1800 miles thick
  - interface ~ Mohorovicíč discontinuity
- Origin of Mohole:
  - March, 1957, NSF review panel, geological sciences
  - Walter Munk, Scripps Oceanographic Institute, suggested drilling a hole through the earth's crust
  - Turned to AMSOC (American Miscellaneous Society)
AMSOC
- started in 1952 by
- "miscellaneous sci."

NSF AMSOC connections
- AMSOC provided a convenient organization to submit a proposal for funding
- AMSOC members had good connections--ONR, NSF, NAS

Building professional support, late 1950s
- first step was to make a recognized scientific priority
- second step NAS support
- third steps was to sell to larger scientific community
- Fourth step, demonstration project

Project unravels, mid 1960s
- NAS began to have doubts as the project started to grow; they were not in the business of managing large science projects
- 1962, NSF set up a special committee, asked for bids to undertake project
- 1963, the scientific community splits over Mohole
- the dispute starts to make its way into public
- August, 1966, Congress voted to cut funding

Tuskegee Study
- 1926 Syphilis obstacle to Black economic development.
- 1929 Treatment with Mercury and Bismuth.
- 1931 funds for treatment end, decision made to follow untreated males
- 1934 First papers
- 1936 Major paper published
- 1940 Draft helps keep men from treatment
- 1945 Penicillin syphilis.
- 1947 US PHS establishes “Rapid Treatment Centers” to treat Syphilis.
- 1968 Concern raised about study
- 1969 CDC reaffirms need for study
- 1970 First news articles condemns studies.
- 1971 Congress holds hearings and law suit initiated.
- 1972 Study ends, participants compensated.
- 1997 May 16th President Clinton Apologizes on behalf of the Nation.

External problems and changes
Lyndon Johnson, 1963-1968
- Civil Rights Era
- Vietnam War Era
- Year of Transition 1967-68
  http://www.67riots.rutgers.edu/

Richard Nixon, 1968-Aug. 8, 1974
- some government reform
- escalated then ended war in Vietnam
- 1969, continued racial unrest
- 1970, Kent State killings
- June 17, 1972, break in Watergate Complex
- 1973, Arab oil embargo, energy crisis

Gerald Ford, 1974-1976
- pardon Nixon likely cost him ‘76 election
- important initiatives

- major initiatives: environment, energy, social programs, and international relations
- arms control and peace in the Middle East
- 1979, 50 Iranian hostage crisis
- 1980 rescue mission failed
- was seen as an ineffective leader

Intellectual revolution
- Joseph Heller, Catch-22 (1960)
- William Lederer, The Ugly American (1958)
- Herbert Marcuse, One Dimensional Man (1964)
- Kenneth Boulding, The Organizational Revolution (1953)
- ….. The Meaning of the Twentieth Century (1964)
- William Whyte, The Organization Man (1956)
- Rachel Carson, Silent Spring (1962)
Thomas Kuhn, *The Structure of Scientific Revolutions* (1962)

**Social revolution**

- "beatniks" or "beats", 1950s
- “folk” music emerges

**1963 will start the switch to Rock**

- Beatles London Palladium concert
- 1964 first Beatles movie, *A Hard Day's Night*
- Rise of the drug and free-sex culture

**Leaders of the counter culture**

- Timothy Leary and Richard Alpert begin experimenting with hallucinogenic drugs (LSD) in 1960-61
- West Coast, Ken Kesey and his Merry Pranksters made his money on *One Flew over the Cuckoos Nest* (1962)

**1965-1975 Period of transition**
Science establishment, ca. 1965

- NAS
- IOM.
- NAE
- NRC.

Government

Executive
- Science Advisor
- Office of Sci. and Tech.
- Science Advisory Committee
- Executive Agencies
- Military

Judicial

Legislative
- House committees
- Senate committees

Universities