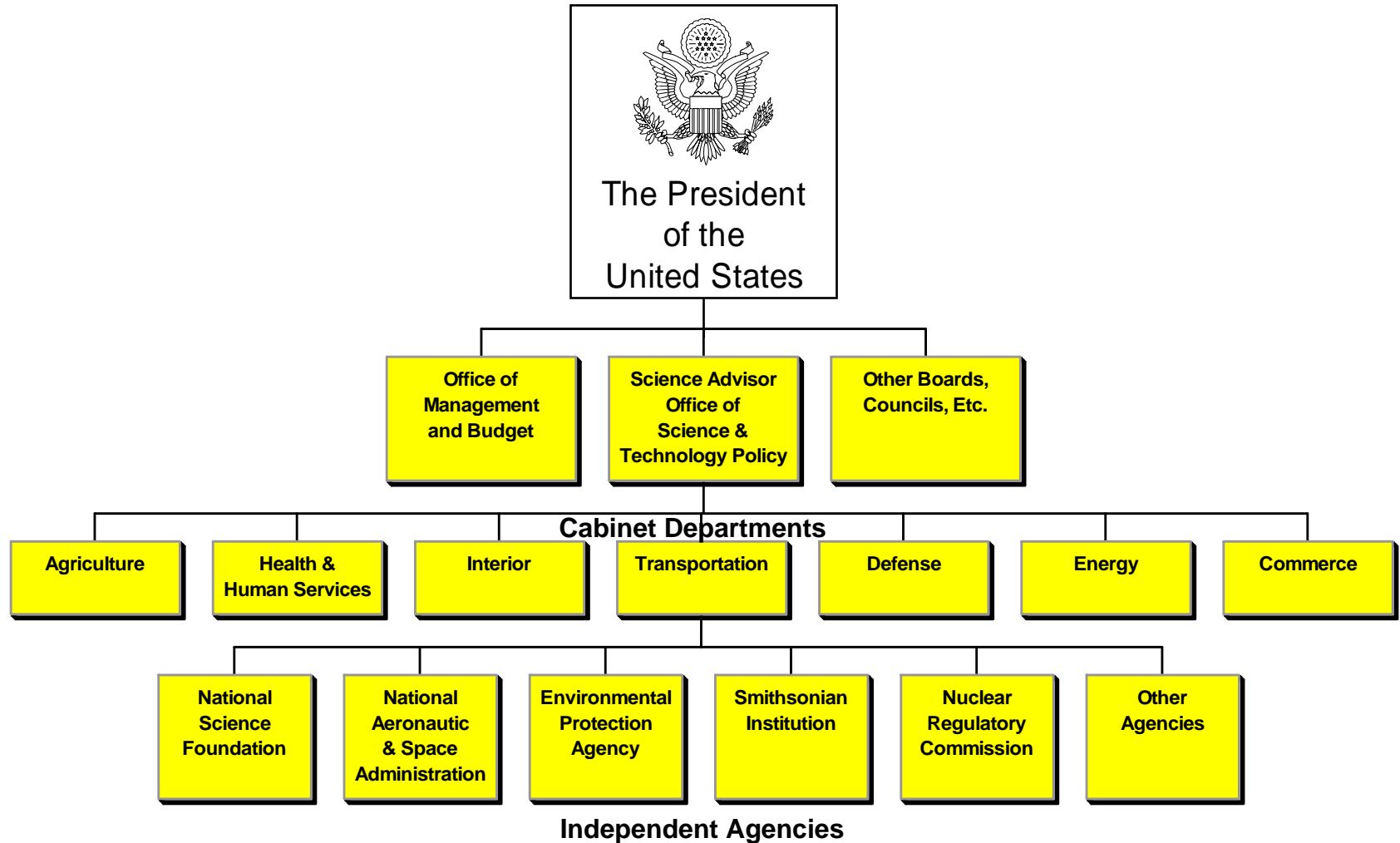


# National Science Foundation: Some Dichotomous Views



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May 2009

# NSF Is an Independent Agency of the Executive Branch of the U.S. Government



*"That's what they do in  
the mission agencies,  
but NSF is different."*

# The NSF Mission

- To promote the progress of science
- To advance the national health, prosperity, and welfare
- To secure the national defense

(from the NSF Act of 1950)

# The NSF Vision

Advancing discovery, innovation, and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering

# NSF Strategic Outcome Goals

## External Goals

- Discovery (previously “Ideas”)
- Learning (previously “People”)
- Research Infrastructure (previously “Tools”)

## Internal Goal

- Stewardship

# More Dichotomies

## Two merit evaluation review criteria

- Intellectual Merit

Conceptual framing, scientific soundness of research design, capabilities of investigators, access to necessary resources, significance of generalizable contributions

- Broader Impacts

- Educational contributions, potential for broadening participation, infrastructural enhancements, promoting international collaboration, societal benefits

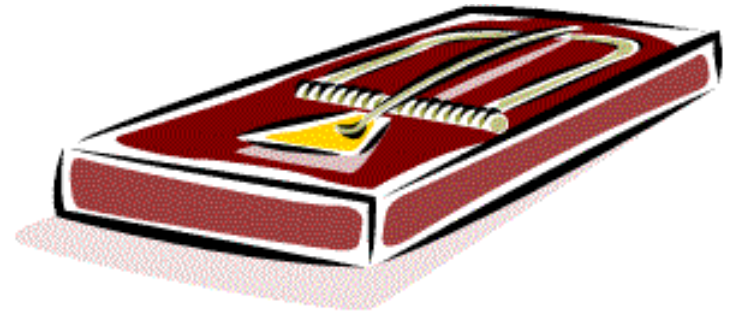
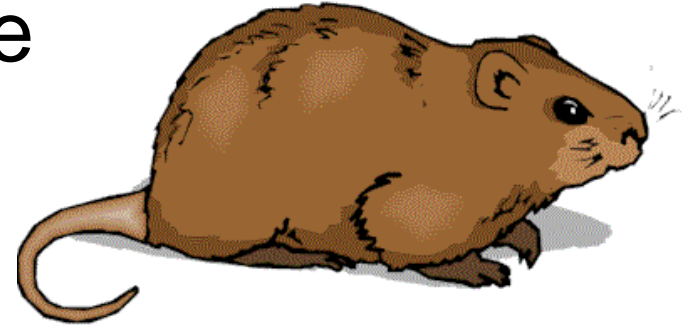
# At Its Core, NSF Is a Basic Research Organization

- Intellectual Merit is an essential for most projects.
- Generalizability of research results and their capability for advancing generating insights "even if you don't care about the specifics" is most highly prized.
- Challenge is evident when Broader Impacts are especially compelling from a societal standpoint.



# Different Research Approaches

- Research motivated by the desire to answer specific questions
- Research motivated by the desire to advance techniques, tools, and perspectives for wide-ranging use



# Bringing Both Kinds of Researchers Together Can Be Especially Productive

- "Mousecatchers" often are limited to asking questions they think they can answer.  
    "Mousetrap Builders" can help them think beyond current techniques.
- "Mousetrap Builders" can come up with tools having little real utility.  
    "Mousecatchers" can help them develop better tools with immediate utility.

# Conducting Research While Educating and Building Capacity

- Emphasis on immediate research results leads to a desire to focus on current researchers.
- Attracting and educating future generations of researchers is critical.
- Importance of working with "local" researchers when conducting research in foreign locales now is viewed as essential.
- Building capacity for future research in other nations.

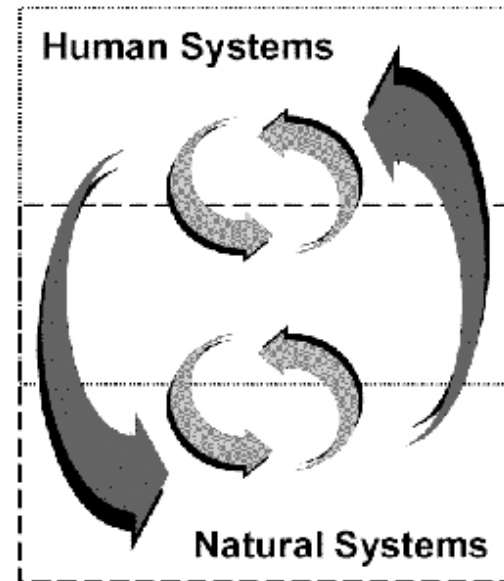
# "Rangeland" vs. "Pastures"

- NSF tends to want to keep competitions and programs "open" in order to permit researchers to pursue what they view as the most significant opportunities and obtain the most generalizable results.
- Targeted competitions and programs sometimes emerge to encourage certain lines of inquiry or address specific kinds of products.

# Some New "Rangeland"

## Competitions of Special Interest

- Dynamics of Coupled Natural and Human Systems (CNH)
- Cyber-Enabled Discovery and Innovation (CDI)
- Partnerships for International Research and Education (PIRE)



# Some Topics for Which U.S.-African Collaborations Have Been Especially Promising

- Environmental topics, especially those examining interactions among people, institutions, and biophysical systems
- Health-related topics, including epidemiology, risk assessment, prevention and treatment
- Diffusion of new technologies, including telecommunications technologies