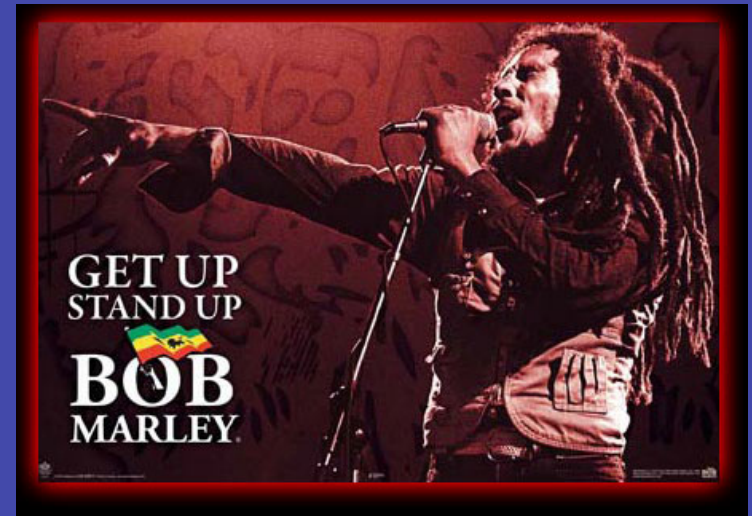


Get Up—Stand  
Up!...Proactive Outreach  
as Necessary and  
Informative Responses to  
“Crisis” & “Chronic”  
Geological Events



Paul K. Doss  
Geology & Physics  
University of Southern Indiana

My position—

As a discipline, geoscientists are not sufficiently proactive in support of our science in the public sphere.

“The people” deserve, and to some degree expect, to be informed on matters of societal importance

Scientists and scholars have an inherent responsibility, a “duty,” an “accountability,” to initiate discourse...to engage in active outreach.

Perhaps more importantly,

it is in our best interest to do so!

# Explaining Ferguson through a Sociological Perspective

Michelle Smirnova-Sociologist,  
Univ. of Missouri



## Have We Politicized Our Public Health?

Huffington Post, November 2011



William Schaffner, M.D.  
Vanderbilt School of Medicine  
National Foundation for Infectious Diseases



## China to Flood Economy w/ Cash as Global Markets Lose Faith

Wall Street Jour., Aug. '15

Eswar Prasad-Cornell Univ.  
Tolani Prof. of Trade Policy

One thing we learn as foundational to science is  
we must frame, & ask the right question(s)

Only one state (?) requires year-long Earth Science course  
for high school graduation

--32 states (64%) require a Life Science course

--27 states (54%) require a Physical Science course

No AP Earth & Space Science examination (0%)

American Geosciences Institute, 2013:  
Earth and Space Sciences Education  
in U.S. Secondary Schools: Key Indicators & Trends

Is this a Chicken or an Egg...?

There is really never a shortage of Earth Science topics in which to engage: Chronic and Acute

Some more important than others

Some bigger or costlier than others

Some that might hit close to home

Some that are regional or global

Examples of active “outreach” to the general public in Southern Indiana—not a comprehensive list



Hurricane Katrina (Cat-5)  
NOAA-18 AVHRR 1 km  
August 26, 2005 @ 1950 UTC

# The Tragedy in New Orleans:

Environmental geology,  
failed public policy,  
and destiny

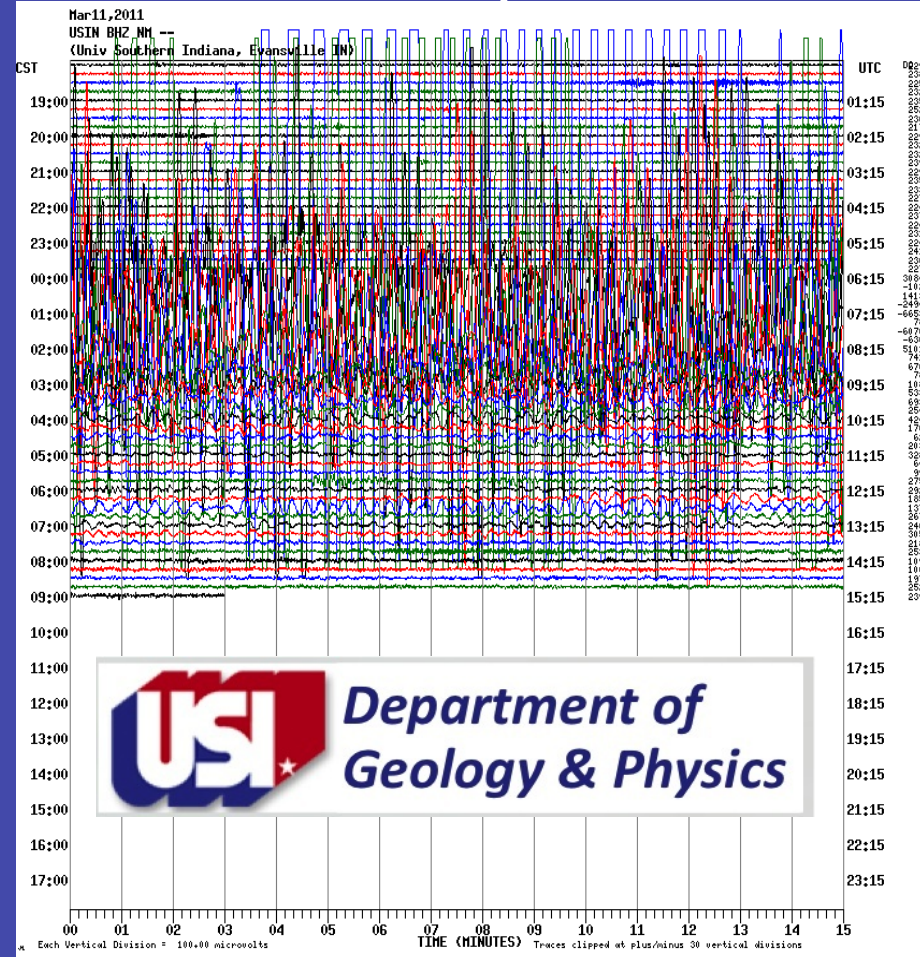
Paul K. Doss

Geology &  
Physics

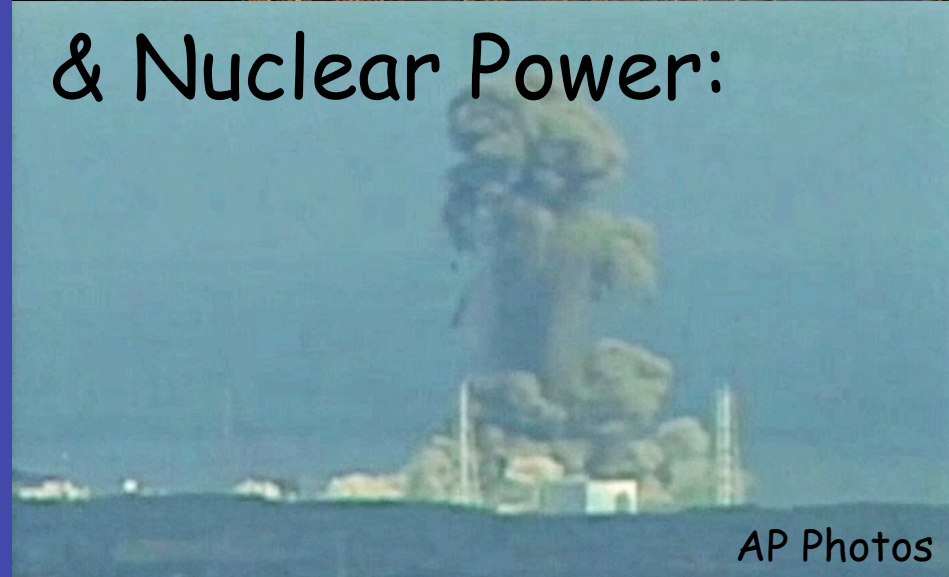
Univ. of  
Southern  
Indiana

# Earthquakes,

# Tsunamis,



## & Nuclear Power:



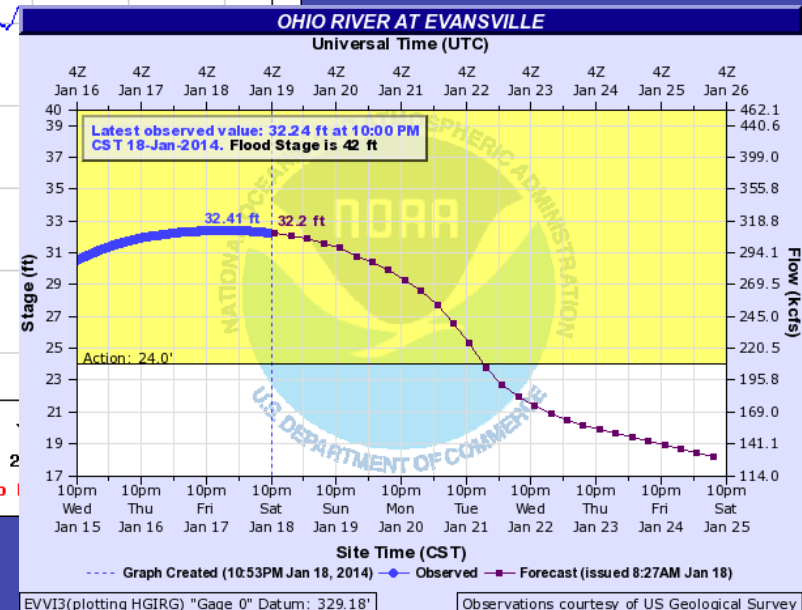
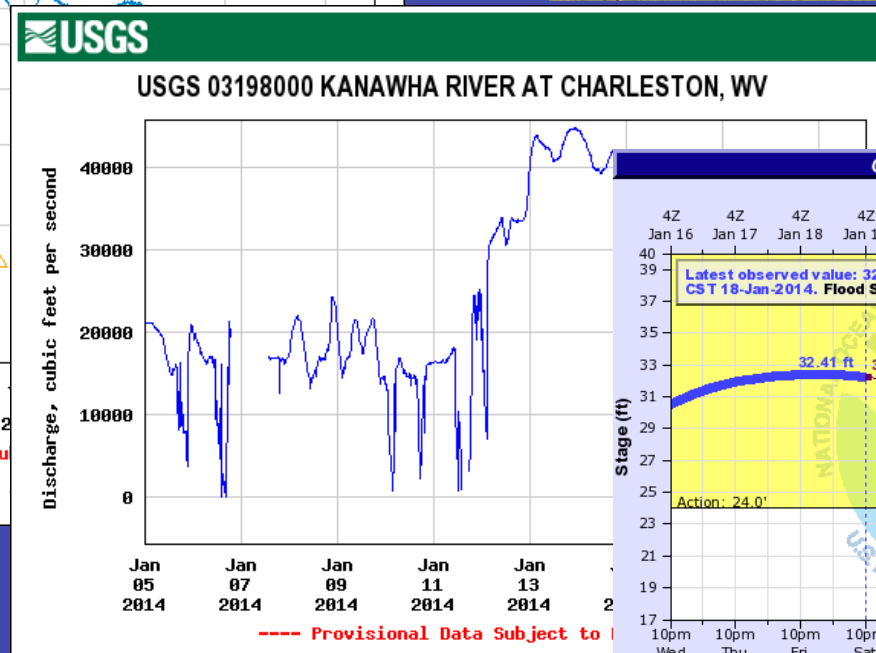
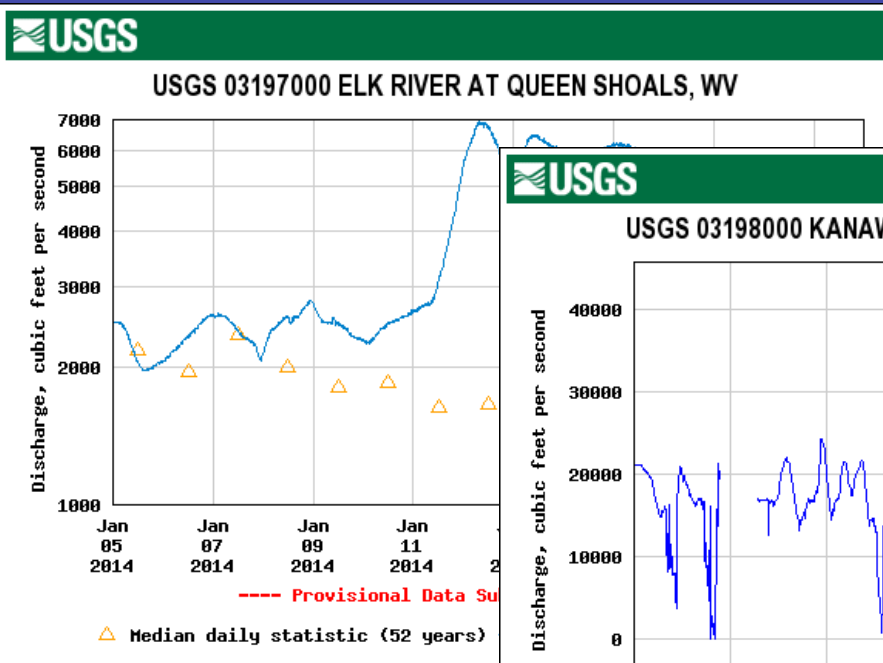
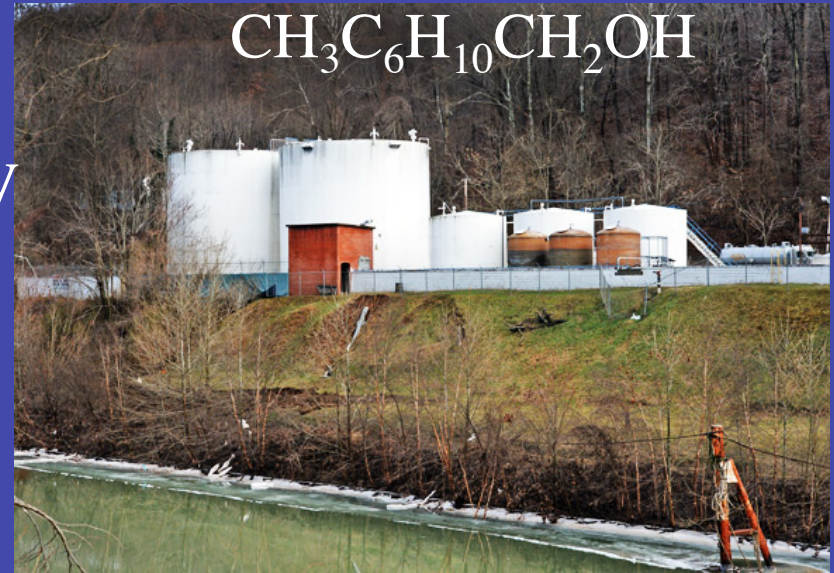
AP Photos

Dr Paul K. Doss &  
Dr Kent W. Scheller

## Global Fallout from Japan

# Living Downstream: Toxic Substances, Public Water Supply, & Vulnerability from Contamination and Public Policy

4-Methylcyclohexanemethanol



Paul K. Doss  
Geology & Physics  
Univ. of Southern Indiana

# (Southern) Indiana's Geoecosystem



*Bent Twig Trail,  
USI campus.*

Dr. Paul K. Doss  
University of Southern Indiana

Heartwood Forest Council

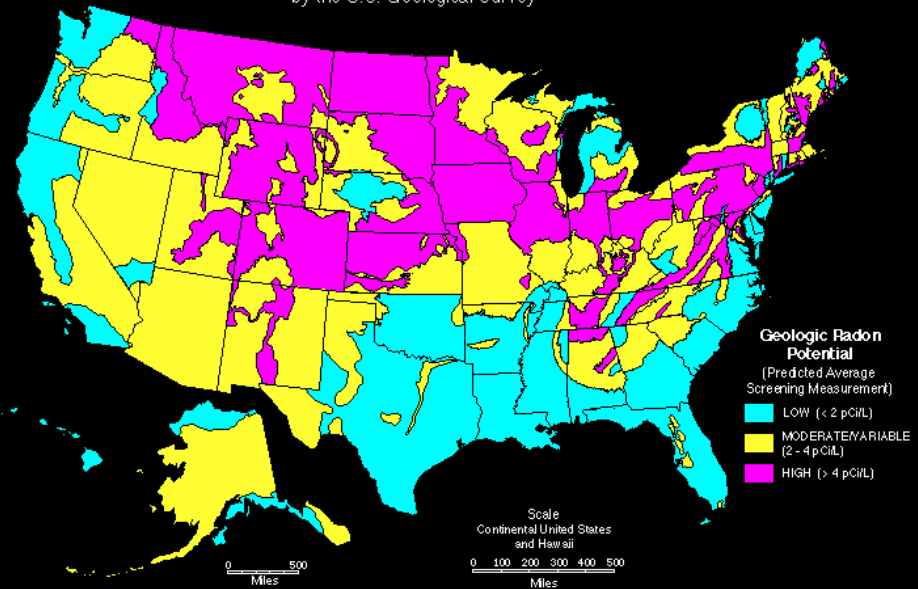


# RADON: Health, Hazards, and your Home

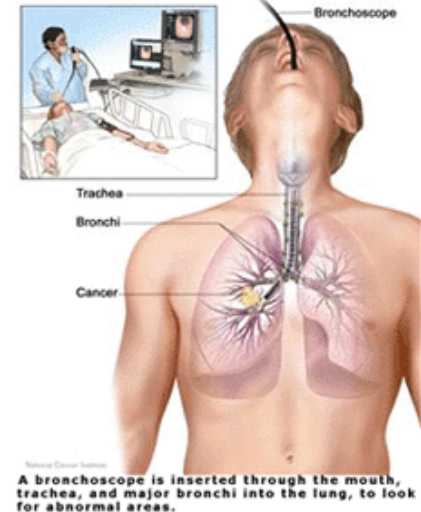
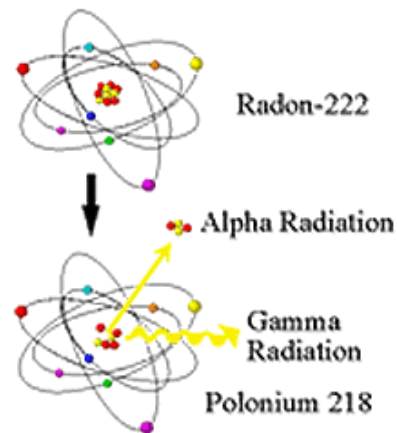
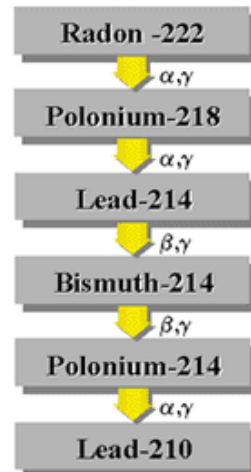
Dr. Kent Scheller & Dr. William Elliott  
Department of Geology and Physics  
University of Southern Indiana

Thursday, September 24<sup>th</sup> @ 6:30 pm in ED 1101

GENERALIZED GEOLOGIC RADON POTENTIAL OF THE UNITED STATES  
by the U.S. Geological Survey



**Radon-222**



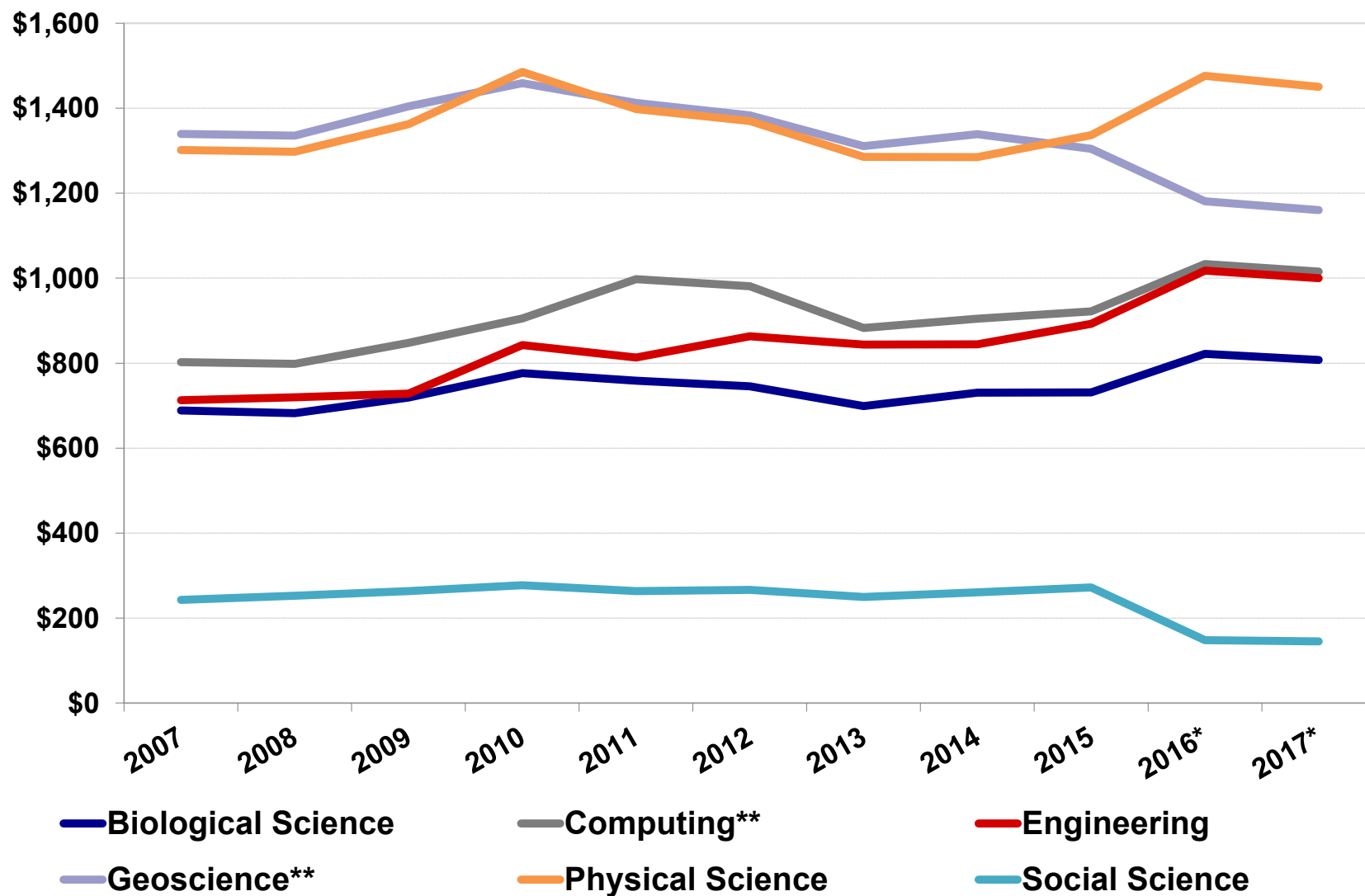
Conducting outreach can be inconvenient, and it certainly is a burden on our time & work effort

But...”Duty”...”Responsibility”...

And, we may very well be seeing (suffering?)  
some of the consequences of a dis-engaged and  
un- or ill-informed public

# NSF Directorate Budgets and House COMPETES

Funding in millions, constant 2015 dollars



\*House proposal. \*\*Adjusted for comparability. Based on historical agency data. © 2015 AAAS

## America COMPETES Reauthorization 2015

- DOE Office of Science Biological and Environmental Research (BER) \$550 million, 7% below FY2015
- Office of Energy Efficiency and Renewable Energy (EERE) \$1.2 billion, down 30%
- prohibits BER from starting new climate research unless proven it is not conducted by other fed agency
- removes “reductions of energy-related emissions, including greenhouse gases” from existing goals
- limits how scientific information funded by DOE can be used in formulating federal regulations.

## FY'16 House Appropriations

- \$18.5 billion to NASA, up 2.9%
- NASA's Science Directorate \$5.2 billion, down 0.1%
  - NASA Earth Science Div: \$1.7 billion, down 5.1%
  - NASA Planetary Science Div: \$1.6 billion, up 8.3%



THE  
GEOLOGICAL  
SOCIETY  
OF AMERICA®

# Teaching Evolution: Position Statement

Adopted Oct 2005; revised May 2009 & Nov 2012



NATIONAL CENTER  
*for* Science Education  
DEFENDING THE TEACHING OF EVOLUTION & CLIMATE SCIENCE

“Darwin in danger?”

“Louisiana governor signs creationist bill”

Only one state (?) requires year-long Earth Science course for high school graduation

- 32 states require a Life Science course

- 27 states require a Physical Science course

No AP Earth & Space Science course or examination

American Geosciences Institute, 2013:  
Earth and Space Sciences Education  
in U.S. Secondary Schools: Key Indicators & Trends

I think it's a Chicken AND an Egg...?

Earlier I suggested

“we may very well be seeing some of the consequences of a disengaged and un- or ill-informed public”

Perhaps we are seeing, in part, the consequence of a disengaged discipline

In his presentation yesterday, James Balog of Chasing Ice fame said

“You should do what you can with the story you have”

**Most people  
think,  
Great God will  
come from the  
sky.**

**Take away  
everything and  
make everybody  
feel high.**

