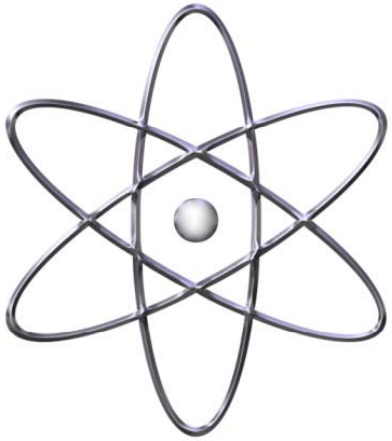
The Future of Physics in America

Effective Advocacy, Budget Cuts, and What You Can Do

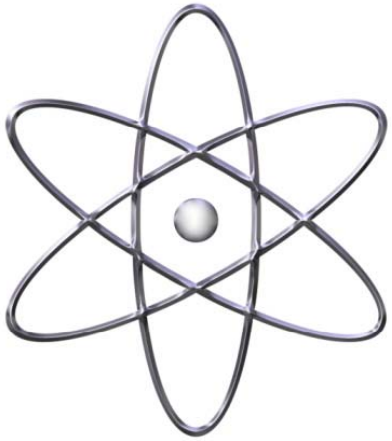
APS Office of Public Affairs Mission:

Advocate for positions outlined in APS policy statements



Leading Scientific Source on Issues

- Physics Research Funding
- Innovation Policy
- Energy & Environment
- National Security
- STEM Education



Recent Success Story

2011 started w/ Federal mandate to cut budget: science a target

- Met with Members of Congress & key committee staff
  - **Michael S. Lubell & Francis Slakey**

- Organized influential letter-writing campaign
  - **Brian Mosley,** APS Grassroots manager
  - **Tyler Glembo,** Government Relations Specialist

- Assisted APS members in meetings with congressional staff
  - **Jodi Lieberman,** Senior Government Relations Specialist
  - **Tyler Glembo,** Government Relations Specialist

- Worked with APS members to write op-eds
  - **Tawanda W. Johnson,** APS Press Secretary
  - **Tyler Glembo,** Government Relations Specialist

Good Result: FY '12 Budget – up 0.96% to $4.89B

mlive.com

Everything Michigan — *Saturday, November 12, 2011*

Retain robust federal support for scientific research

By Guest Writer Vernon Ehlers

There's no doubt Michigan's families are hurting.

With the third-highest unemployment rate in the nation behind Nevada and California, they are struggling to pay mortgages, keep the lights on and feed their children.

While unemployed workers continue their search for jobs, the congressional super committee will meet to decide $1.2 trillion in cuts under the recently passed Budget Control Act.

As the committee members work toward their goal, they should maintain robust federal support of the nation's scientific enterprise, which has contributed to more than half of U.S. economic growth since World War II. The MRI, iPad and laser are a few examples of the innovations started in laboratories with scientists conducting early-stage scientific research. Invented more than 50 years ago, the laser has many everyday applications and is vital to the U.S. military, health care, consumer and business electronics and many other industries.

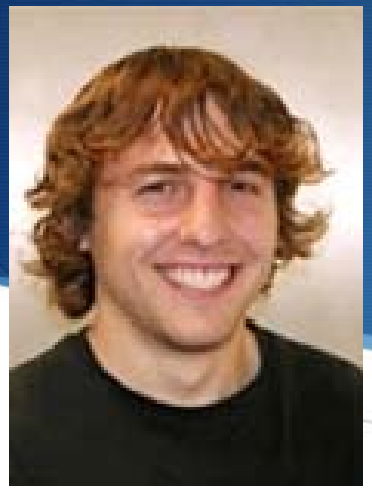
Our esteemed universities across the statewide are working on cutting-edge research through the support of the U.S. Department of Energy's Office of Science, the National Science Foundation, the National Institute of Standards and Technology, and the National Institutes of Health.
From studying complex materials on the nano scale to more efficiently heating our homes to researching the smashing of atoms to find ways to improve medical devices, university research continues to resonate in our daily lives.

The University of Michigan, Michigan State University, Wayne State University and Western Michigan University continue to push the boundaries of discovery in the area of biomedical research as they search for better ways to cure diseases and develop new medical devices to help patients navigate their disabilities. And our many other colleges and universities are working hard to educate the next generation of scientists and engineers as well.

Michigan also is fortunate to be the home of the Dow Chemical Co., a leading science and technology company. Dow understands the importance of scientific research in creating new technologies that lead to new innovations and new jobs. For example, Dow is helping auto manufacturers reduce vehicle weight — and in turn — improve energy efficiency through the development of a flexible material that binds to dissimilar materials. The company is committed to its mission statement "to passionately innovate" by working toward solutions that will make our world safer, healthier, cleaner and more sustainable.

The aforementioned reasons are why we urge our Michigan representatives Fred Upton, R-St. Joseph, and Dave Camp, R-Midland, — members of the super committee — to help build a better America by maintaining robust federal support of the nation's scientific enterprise. Doing so will ensure federal laboratories and universities can continue their essential research, leading to new ideas, innovations and jobs for all Americans. Scientists, laboratory assistants and data technicians all play vital roles in maintaining the country's role as a scientific leader.

We are at a critical juncture in our economy as the nation teeters on the brink of another recession. We can ill afford to torch the seed corn of innovation — early-stage scientific research — which has yielded great economic benefits for all Americans.



John Mergo

An Important Question

"How does a physical scientist do anything helpful for society?"

Why should we care?

12 Million People

(7th in the U.S.)

… and they vote

How do we show that science is everywhere?

Advocacy 101: Outreach Programs

Ohio State Physics Department: Ohio State Fair

Ohio State Physics Department: Girls Scouts of America

Large-scale public outreach activities

- Proving that science is more than just the hard subject in school
- Show adults the fundamental science behind common technology

Education as Outreach

But everyone likes explosions and 30-second explanations of “science-y things”.

If the goal is to teach science to the public, why not give it a try directly?

Not pictured:
Kids *eating* class materials

Policy dictates that kids have time with a scientist.

How about talking with the policy makers?

Cornell Center For Materials Research: Outreach in Harlem, NY

Why Talk To Congress?

Difference between kids and policy makers:

Policy makers are willing to listen to you.

Other important reasons to talk to government officials:

- Funding. Not just your own!
- Representative of their districts
- Can't be on top of everything
- Generally receptive of scientists

Successes with Congressmen

2011: Office of Bob Gibbs, OH 18th (R)

- New Republican from 2010
- Looming National Debt Crisis
- Discussed on-the-table budget cuts
- Effects of budget reduction on young scientists
- Foreign funding support

2012:

- Looming Budget Sequestration
- Met with the same staff
- Discussed current R&D budget outline
- **Previous support of the NSF budget!**
- More relaxed environment.

Sen. Sherrod Brown (D)-OH

- 1 Hour meeting
- Largely focused on my current work
- "It's good to see people come in."

Megan Comins

What happens in a Congressional visit?

One-on-one conversation with a Congressional office, where you get to communicate the impact of legislation not just on your life, but on the lives of your colleagues and on science in the US in general

It's a two-way discussion. They really do listen to you, ask for your opinion, ask you more about facts and numbers, and care about what you have to say.

What happens in a Congressional visit?

You meet with…

- The Senate and/or House offices of which you're a **constituent**. (Don't meet with an office to which you don't have a connection)
- *Usually*, the staff member who is in charge of science and energy issues (the "science staffer")
- Senate: you're very likely to see a staffer and not the Senator him/herself
- House: you're still more likely to see the science staffer, but there is a larger change you'll get to meet with the Representative in person

My experience with lobbying

I have varying connections with the 4 states I've lived in since 2003 (MI, OH, PA, NY)

How I got involved: a chance email from a fellow grad student endorsing a CVD* with the AAS**

Participated in various Congressional Visits Day events for 3 years now (2010, 2011, 2012)

2010: visited PA offices with APS unit officers

- Before: I was worried the meeting would be awkward or like talking to a brick wall
- After: It wasn't awkward because I wasn't alone in the meetings, and it was obvious that my opinion mattered. I was really motivated to return the next year.

*CVD = Congressional Visits Day

** AAS = American Astronomical Society

My experience with lobbying

For 2011, the APS agreed to fund 4 grad students!

- Me (left)
- John Mergo, previous speaker (middle)
- Carl Ferkinhoff, Cornell astronomy PhD student from MN (right)
- Zach Lamberty, Cornell physics PhD student from SD (not pictured)

My experience with lobbying

2011: Very important CVD – the day before the “debt limit showdown”, with serious consequences for science, already mentioned by Dr. Slakey.

- I visited offices from PA, MI, OH, and NY. The 4 of us together visited offices for PA, MI, OH, NY, SD, and MN

2012: Focused on building stronger connections in MI

- Make sure to thank those who supported the APS message in 2011, instead of just asking for help with no acknowledgement of previous action

What I've learned

- Congress will listen to you
  - Support for science is basically bipartisan, even if it's portrayed differently in the media
  - As a constituent, you are extremely important
- The impact of science on society is **enormous**.
- The way you deliver a message is at least as important as its content
  - Example: perceptions of the phrase "basic scientific research"

What I've learned

- Don't be biased by your politics or by media portrayals
  - Carl met with Rep. Michelle Bachmann's office in 2011, and it was his best meeting that year. Those who disagree with her politics often think that meeting with her office is a "waste of time," but it isn't at all. Even if you don't agree with a member of Congress, every office is staffed by intelligent people who care about what you have to say.

We need you!

Who?

"Early career scientists and engineers"

Undergrads, grad students, recent graduates (BS, MS, MEng, PhD), Postdocs, etc.

Why us?

We are the up-and-coming highly skilled workforce! We will be (and are) the innovators and critical thinkers who power the industries driving the US economy

We need you!

What can you do?

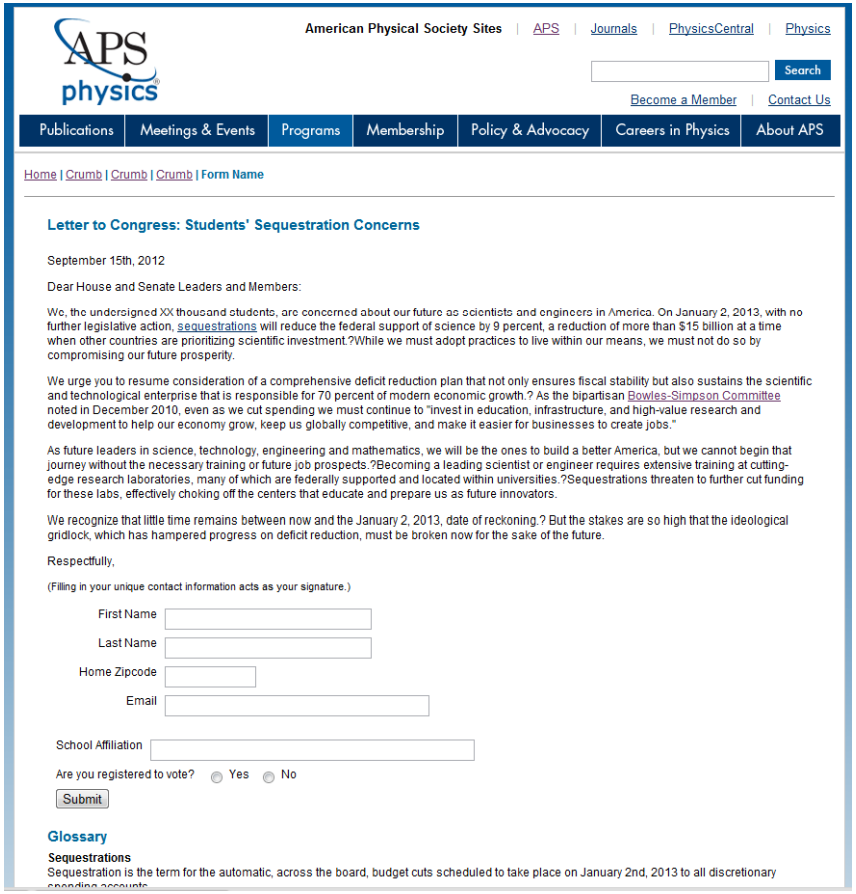
- Attend a Congressional Visits Day through a professional society. The APS participates, but so do the ACS, MRS, IEEE Society, AGU, AAS, etc.
- Apply for a Congressional Science Policy Fellowship (if you have or will have a PhD) through, e.g., the AAAS, APS, etc
- Meet with your local representative at home!

Tyler Glembo

Student voices are important

Today you will have a chance to have your voice heard in the form of a letter we will be sending to Congress

http://go.aps.org/sequestration2012



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Letter to Congress: Students' Sequestration Concerns

September 15th, 2012

Dear House and Senate Leaders and Members:

We, the undersigned XX thousand students, are concerned about our future as scientists and engineers in America. On January 2, 2013, with no further legislative action, sequestrations will reduce the federal support of science by 9 percent, a reduction of more than $15 billion at a time when other countries are prioritizing scientific investment.?While we must adopt practices to live within our means, we must not do so by compromising our future prosperity.

We urge you to resume consideration of a comprehensive deficit reduction plan that not only ensures fiscal stability but also sustains the scientific and technological enterprise that is responsible for 70 percent of modern economic growth.? As the bipartisan Bowles-Simpson Committee noted in December 2010, even as we cut spending we must continue to "invest in education, infrastructure, and high-value research and development to help our economy grow, keep us globally competitive, and make it easier for businesses to create jobs."

As future leaders in science, technology, engineering and mathematics, we will be the ones to build a better America, but we cannot begin that journey without the necessary training or future job prospects.?Becoming a leading scientist or engineer requires extensive training at cutting-edge research laboratories, many of which are federally supported and located within universities.?Sequestrations threaten to further cut funding for these labs, effectively choking off the centers that educate and prepare us as future innovators.

We recognize that little time remains between now and the January 2, 2013, date of reckoning.? But the stakes are so high that the ideological gridlock, which has hampered progress on deficit reduction, must be broken now for the sake of the future.

Respectfully,

(Filling in your unique contact information acts as your signature.)

First Name

Last Name

Home Zipcode

Email

School Affiliation

Are you registered to vote? Yes No

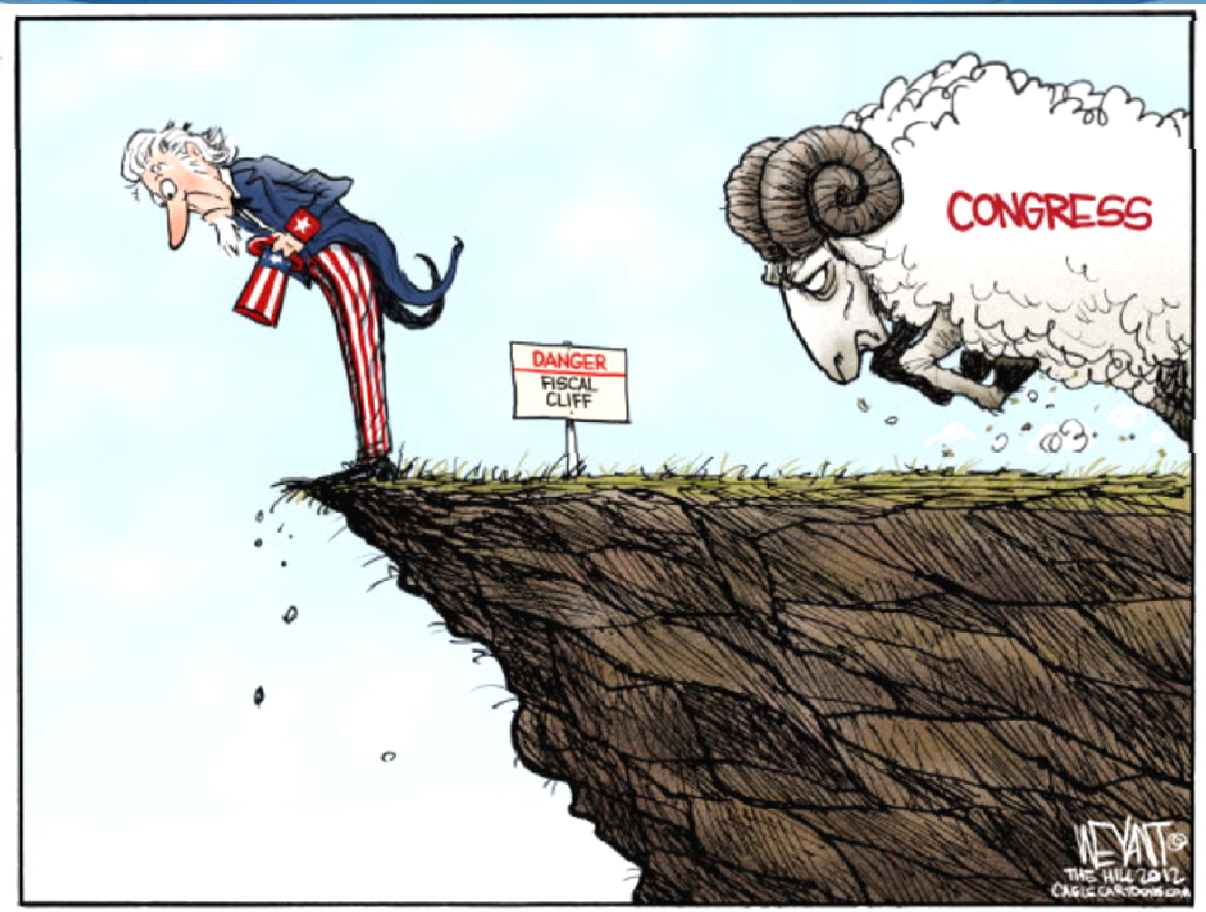
Submit

Glossary

Sequestrations

Sequestration is the term for the automatic, across the board, budget cuts scheduled to take place on January 2nd, 2013 to all discretionary

The letter addresses the most important issue we face today

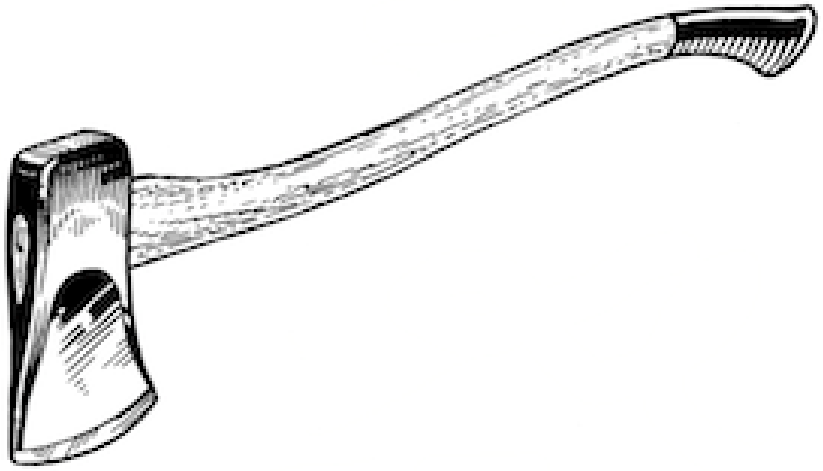


Christopher Weyant

So what is the most important issue we should address today?

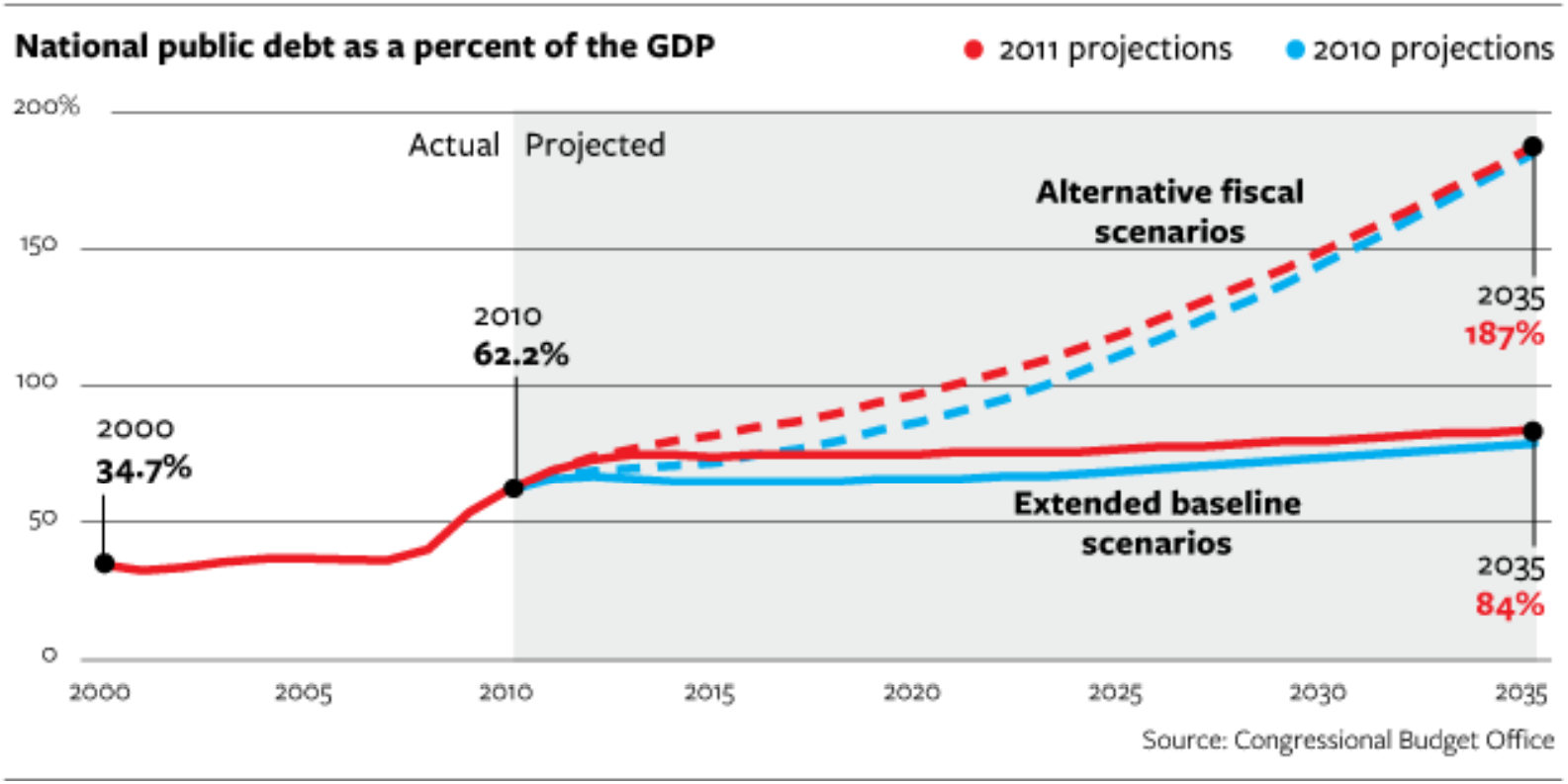
Christopher Weyant

But what are sequestrations?



In order to describe this ax, let's examine what led to sequestrations.

It started when we realized that our national debt was becoming too large

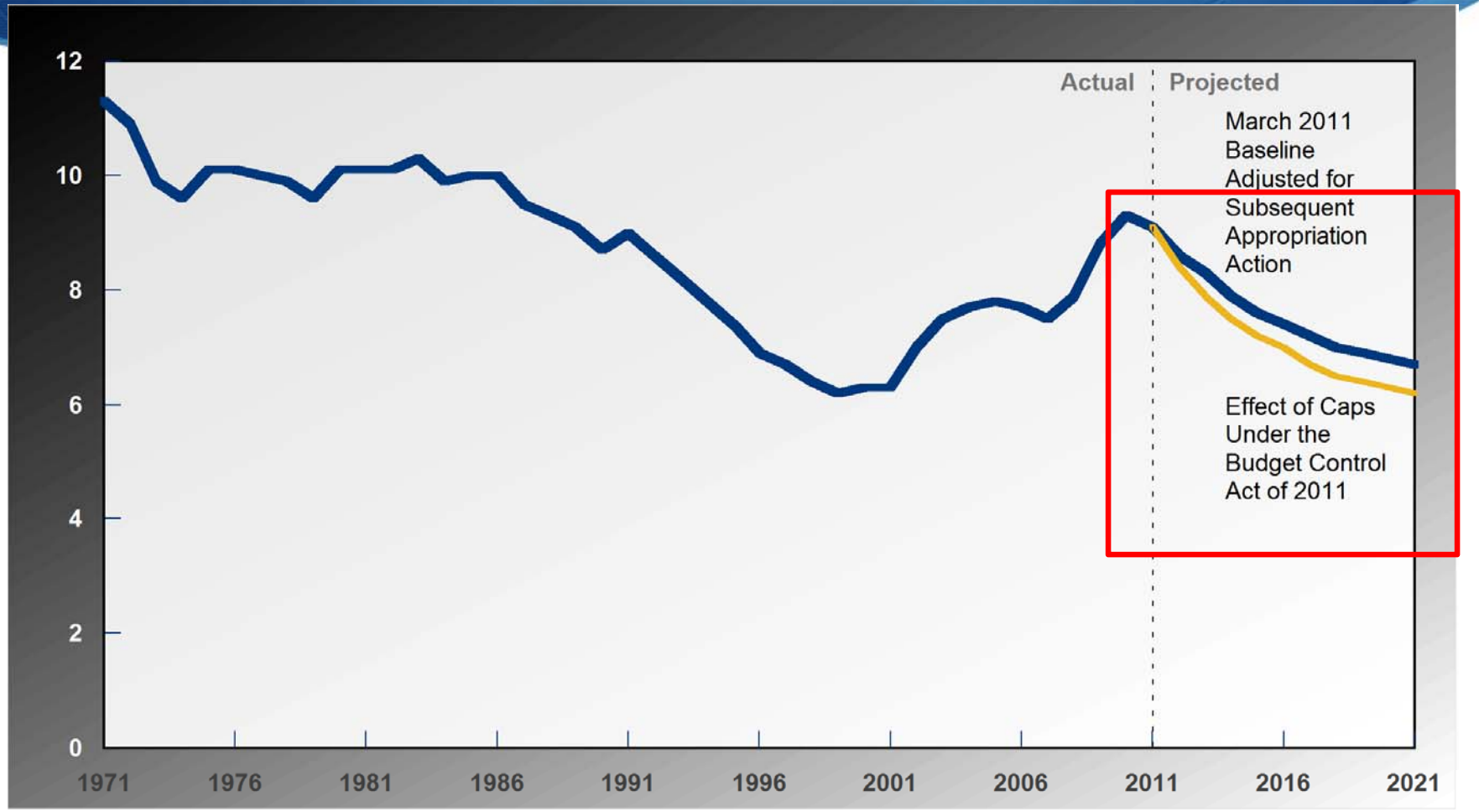


So Congress passed the Budget Control Act

The BCA did two important things

1) The BCA set top line spending

Discretionary Funding will go down under Budget Control Act



Discretionary Spending as Percent GDP

Congressional Budget Office

So Congress passed the Budget Control Act

The BCA did two important things

1) The BCA set top line spending

2) The BCA imposed mandatory spending cuts IF Congress could not reach an agreement to cut the deficit

Sequestrations Will Cut Non-Defense Accounts by 9% in Jan. '13

When the FY13 budget is passed into law, sequestrations will cut ~9.1% from all non-defense accounts and ~12% from defense accounts in Jan. 2013

Individual appropriations accounts will all jockey for positioning

What would the public cut, food aid to those in poverty, national defense, or science funding?

The real world effect sequestrations will have on you

- NSF predicts ~$600M cut. NSF would have to cut grants awarded by ~500-1,500 grants/year. This equates to ~14,000 jobs

- NASA Science predicts ~$350M cut. This would mean cuts to grants and not pursuing proposed programs.

- Department of Energy Office of Science predicts ~$320M cut. If you include other research programs this grows to a ~$450M cut.

- NIH predicts ~$3B cut. NIH would have to cut grants awarded by 1/4th or ~2,500 fewer grants. This equates to ~35,000 jobs

Grants are important to students

- Grants fund research opportunities for undergraduates
- Grants help support graduate students, allowing them to do the research necessary to earn a degree
- Grants pay post-doc salaries

There are deficit reduction plans that avoid sequestration.

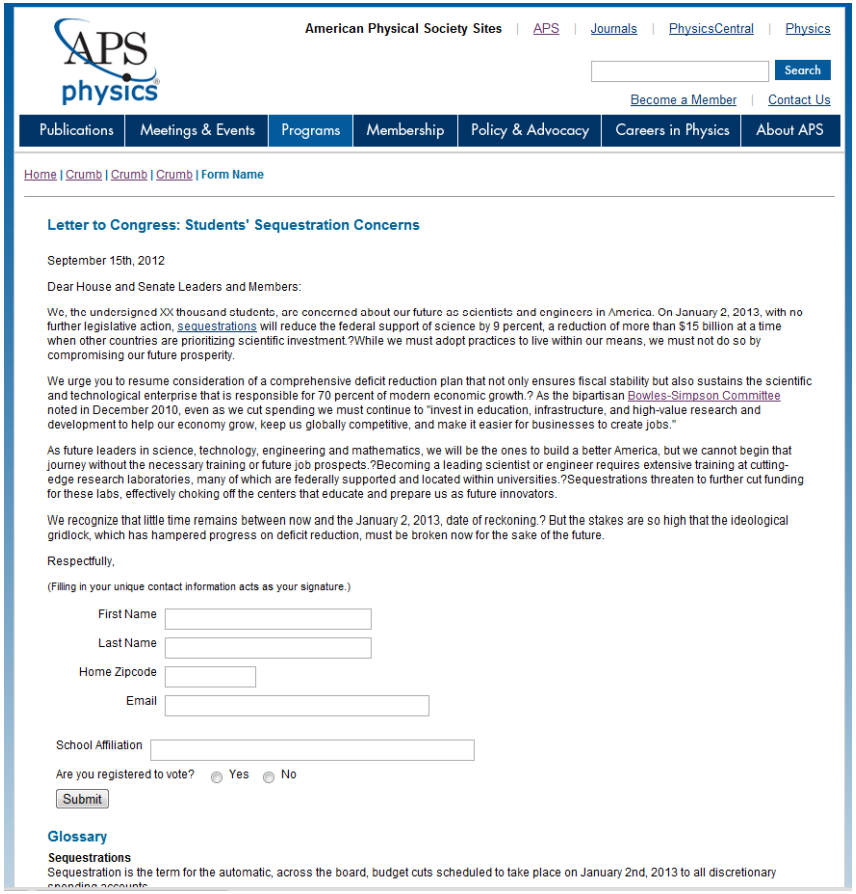
In the letter the Bowles-Simpson Committee is mentioned. This committee released a plan that would have:

- Reduced U.S. Public Debt, not just reducing the rate of increase
- Considered reforms to entitlement programs which comprise the majority of federal spending
- Avoid sequestration

You do have a chance to influence your future

http://go.aps.org/sequestration2012

Share this with your fellow students!



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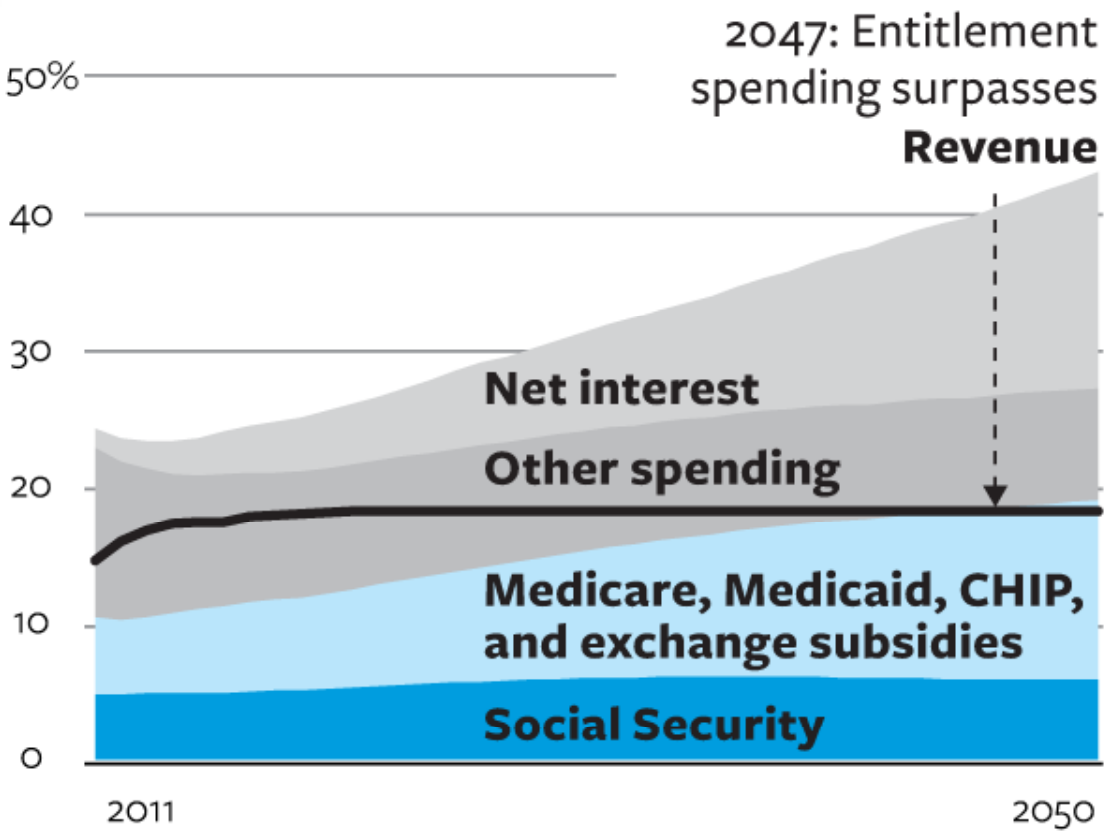
Contact Information

For more information about the APS Office of Public Affairs, contact **Tyler Glembo,** Government Relations Specialist at glembo@aps.org or 202-662-8714.

APS physics™

Sequestrations don't really address the real problem



Source: Congressional Budget Office