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# Slides on Our Annual Trips to Washington DC

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**2009**

**HEP DC Visits  
270 Offices in 2007  
150 Offices in 2008  
200 Offices in 2009**







# HEP One Pager

## Our Ask

- ❑ Please support research in the Physical Sciences through the DOE Office of Science & NSF in the FY2010 Budget
- ❑ Thank you ! Special thanks for 2009 - 10
- ❑ DOE is a Main Funder of broad-based research in the physical sciences
- ❑ Emphasis on University + Laboratory Partnership
- ❑ Long Term Support: 10-20 yr. life cycle of experiments
- ❑ Highlight the LHC

High Energy Physics: Unlocking nature's secrets, training tomorrow's scientists, driving innovation.



5000 PhDs and students work on High Energy Physics research at over 130 universities and labs spread across 44 states and Puerto Rico.

The Department of Energy's Office of Science and the National Science Foundation facilitate High Energy Physics research.

DOE's Office of Science funds the national labs that provide facilities for university-based High Energy Physics research. The DOE and NSF also fund peer-reviewed university research programs across the country. These programs produce scientists who will tackle tomorrow's problems critical to the nation, including energy science and national security.

### High Energy Physics seeks to understand nature

**at its essence.** Physicists at universities and research laboratories across the country are working to discover new particles and physical laws that will help to explain the origin and nature of the universe.

**Exciting experiments are in progress at particle accelerators and at astrophysical observatories.** One of the most promising avenues for discovery is found with scientists at the Large Hadron Collider (LHC) in Switzerland.



Large Hadron Collider (LHC)



Scientists installing CDMS detector

### High Energy Physics Research Sites

- Argonne National Laboratory (ANL) in Illinois
- Brookhaven National Laboratory (BNL) in New York
- Fermi National Accelerator Laboratory (FNAL) in Illinois
- Lawrence Berkeley National Laboratory (LBNL) in California
- SLAC National Accelerator Laboratory (SLAC) in California
- U.S. participation in Large Hadron Collider (LHC) near Geneva, Switzerland
- Nearly 100 research universities

### High Energy Physics research yields benefits now and in the future.

Like other sciences driving state-of-the-art technologies, High Energy Physics requires long-term stable funding to reap its benefits. Particle accelerators and detectors first developed for High Energy Physics are now used by every major medical center in the nation to treat and diagnose millions of patients. From the earliest days of High Energy Physics in the 1930s to the latest 21st-century initiatives, the bold and innovative ideas and technologies of High Energy Physics have entered the mainstream of society to transform the way we live.

### High Energy Physics - A Discovery Science

- High Energy Physics studies the nature of matter, space, time, and energy.
- We seek explanations of dark matter, dark energy, extra dimensions, and the disappearance of anti-matter in the universe.
- The search for answers to these fundamental questions also drives the development of innovative new technologies.

Please support High Energy Physics research through the Department of Energy's Office of Science and the National Science Foundation in the FY2011 budget.



# HEP One Pager

"The fact that scientists, engineers and educators are sitting side by side with economists to chart the country's path forward highlights the recognition by the Congress that innovation rooted in scientific and technological advances represents the key to sustained, long-term economic growth."

*Professor Maria Zuber, Head of the Department of Earth, Atmospheric and Planetary Sciences at MIT*

## Because of your support, many technologies have been made possible.

High Energy Physics research has facilitated the development of technologies that help people and the environment. Some examples include:



**Fighting AIDS** – Researchers used the Advanced Photon Source at Argonne National Laboratory to develop Kaletra, one of the world's most-prescribed drugs to fight AIDS.

**Securing Our Borders** – Particle accelerator-based tools allow more accurate scanning of cargo. A new screening technology can now penetrate through steel four times farther than previous methods.

**Making Tires Green** – The auto industry uses particle accelerators to treat the material for radial tires, eliminating solvents that pollute the environment and reducing the amount of rubber needed by two to three pounds per tire.

- ❑ **Spinoffs: Creating Technologies**
- ❑ **We Train Innovators ...**
- ❑ **The enablement of the ARRA Act**
- ❑ **Reauthorize America COMPETES: Maintain 7-8 Year doubling trajectory at NSF & DOE/SC**
- ❑ **2009 Obama speech at National Academies**
  - ❑ **Science: Way up on the national agenda**
  - ➔ **2010: Renewal Energy, Climate Change**

## We train the next generation of innovators. High Energy Physics trains young people:

**Educated workforce** – Our training provides a highly educated workforce that contributes to many fields, including physics, medicine, materials science, and finance.

**Science literacy** – Our nationally recognized education programs, such as Quarknet and Saturday Morning Physics, promote interest in Science, Technology, Engineering, and Mathematics (STEM) to K-12 students.



## We thank you for your support.

The American Recovery and Reinvestment Act of 2009 enabled the construction of new projects that led to new jobs throughout the industry sector. Continued support for High Energy Physics is essential to realize the full benefits of these projects.

### America COMPETES

- The America COMPETES Act authorizes doubling of support for the physical sciences by fiscal year 2014.
- The America COMPETES Act seeks to restore the health of the nation's science program.

### Educating Tomorrow's Workforce

- Education programs such as Quarknet and Saturday Morning Physics aid Science, Technology, Engineering, and Mathematics (STEM) Education.
- Training of physics PhDs provides a highly educated workforce that contributes to many fields.

*Please support High Energy Physics research through the Department of Energy's Office of Science and the National Science Foundation in the FY2011 budget.*

**Thank you for your support of High Energy Physics.**



# How well are we doing?

Lucas Taylor  
CHEP2010  
Plenary Oct. 22

## Language monitoring of online and print media

<http://www.languagemonitor.com/news/top-words-of-2009/>

### Top Phrases of 2009

1. King of Pop
2. Obama-mania
3. Climate Change
4. Swine
5. Too Large to Fail
- 6. Cloud Computing**
7. Public
8. Jai Ho!
9. Mayan Calendar
- 10. God Particle**

### Top Words of 2009

- 1. Twitter**
2. Obama
3. H1N1
4. Stimulus
5. Vampire
- 6. 2.0 (next gen.)**
7. Deficit
- 8. Hadron**
9. Healthcare
10. Transparency

### Top Names of 2009

1. Barack Obama
2. Michael Jackson
3. Mobama
- 4. Large Hadron Collider**
5. Neda Agha Sultan
6. Nancy Pelosi
7. M. Ahmadinejad
8. Hamid Karzai
9. Rahm Emmanuel
10. Sonia Sotomayor

with nothing at all LHC-related in 2008



# Reactions to Our Message

**Most congressional staff understood the importance of science**

- ➔ Overall we are regarded as a well-organized field
- ➔ Manages its scientific opportunities well
- ➔ Makes good use of the funding provided
- ➔ What we do has great impact on society at large
  - ❑ Especially LHC press – paraphrasing a young staffer:  
“Cool – you work on the blackhole machine 😊”

**One pager and leave-behind packet**

- ➔ Very effective in some offices
- ➔ The fact that basic science provides a steady stream of near- and medium-term benefits to society impressed some staffers; not others.
- ➔ Education and outreach (Quarknet, Saturday morning physics, individual efforts) resonated strongly in Many offices.
- ➔ In some offices, it was essential to show what NSF & the DOE Office of Science brought to the congressman's district.
  - ❑ <http://dellweb.bfa.nsf.gov/AwdLst2/default.asp>
  - ❑ [http://www.science.doe.gov/SC\\_Funding/allstates.htm](http://www.science.doe.gov/SC_Funding/allstates.htm)



# DOE Office of Science Funding Guide: by State and District

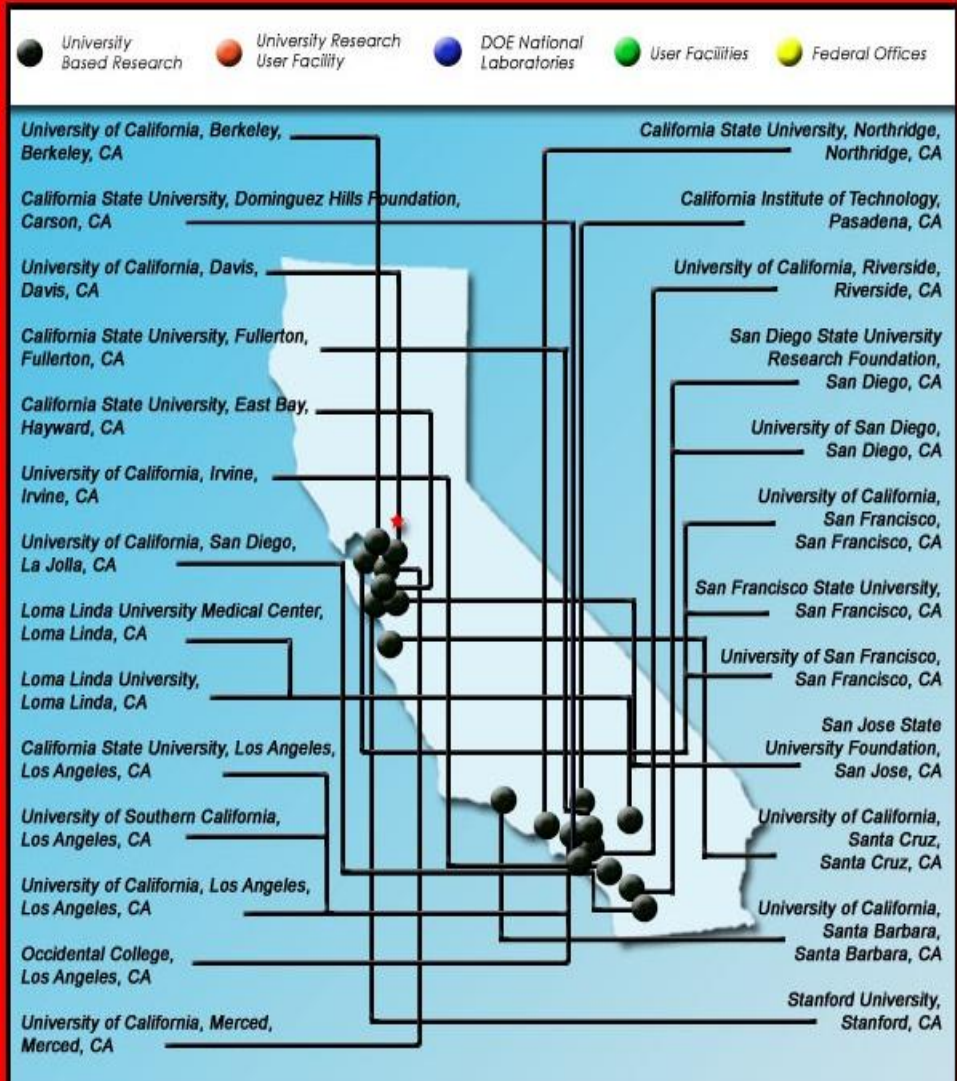


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Source: IMSC data as of 03/04/2009 for the Fiscal Year of 2008

Alabama	Illinois	Montana	Puerto Rico
Alaska	Indiana	Nebraska	Rhode Island
Arizona	Iowa	Nevada	South Carolina
Arkansas	Kansas	New Hampshire	South Dakota
California	Kentucky	New Jersey	Tennessee
Colorado	Louisiana	New Mexico	Texas
Connecticut	Maine	New York	Utah
Delaware	Maryland	North Carolina	Vermont
District of Columbia	Massachusetts	North Dakota	Virginia
Florida	Michigan	Ohio	Washington
Georgia	Minnesota	Oklahoma	West Virginia
Hawaii	Mississippi	Oregon	Wisconsin
Idaho	Missouri	Pennsylvania	Wyoming

**Previous Reports**  
FY 2007  
FY 2006





# HEP DC Executive Office Visits

S. Dasu (Wisconsin)

**DOE** The talk was focused on domestic program and DUSEL.

**NSF (Goldberg et al):** Goldberg was the most senior member. Much of the talk centered around DUSEL. There was some awareness of NSF's grant structure and management of large projects like DUSEL. The emphasis was on partnership with DOE/SC.

**OMB:** Quite interesting meeting. At one point the discussion went to NSF's ability to manage large projects, namely DUSEL.