U.S. DEPARTMENT OF ENERGY | Office of Science

# Update
# DOE Office of Science

ASCAC Meeting, December 20, 2016

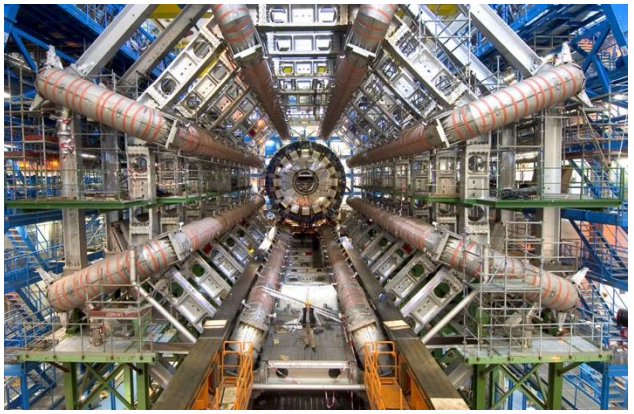
Cherry A. Murray
Director, Office of Science
www.science.energy.gov

- SC Programs
- Budget Cycle Update
- Transition

# Department of Energy Mission Areas

## Energy

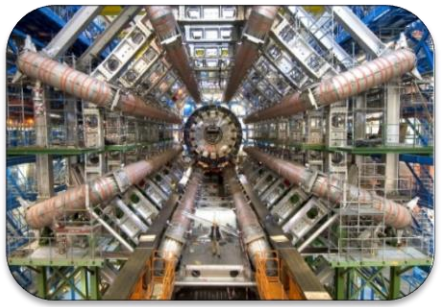
## Science



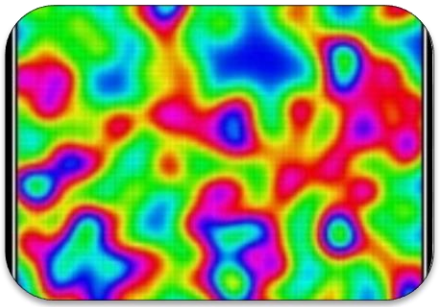
## Nuclear Safety and Security

## Environmental Cleanup

# Office of Science FY16 - $5.35B

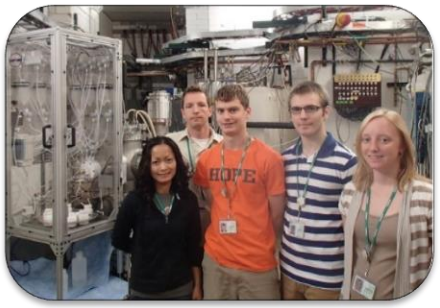


Largest Supporter of Physical Sciences in the U.S.



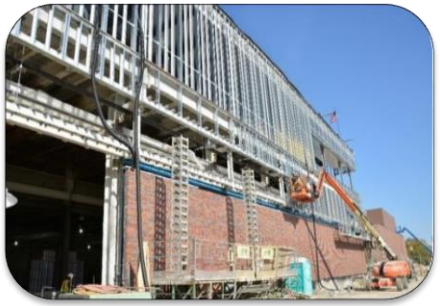
Research: 42%, $2.2B

~40% of Research to Universities



> 20,000 Scientists Supported

Funding at >300 Institutions including all 17 DOE Labs

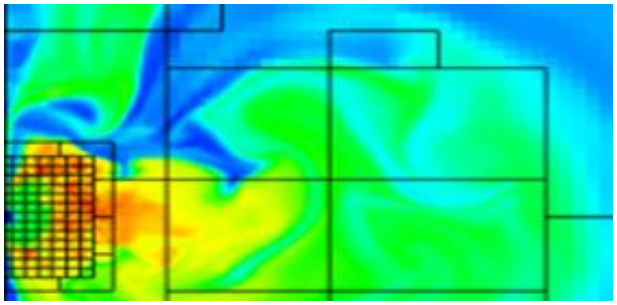


Construction: 13.5%, $723M

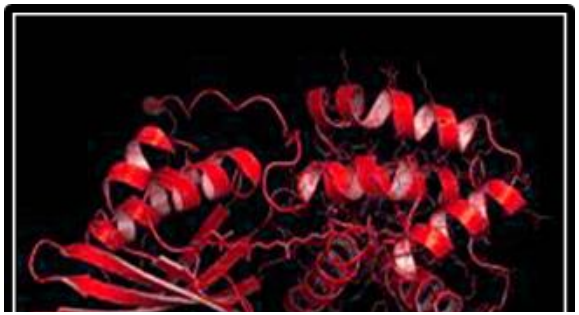
Facility Operations: 38%, $2.02B

>30,000 Scientific Facility Users

# Office of Science Programs

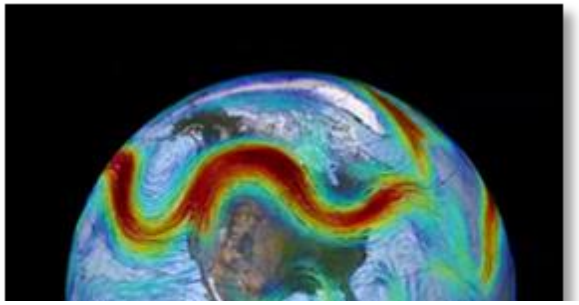


**Advanced Scientific Computing Research**
**FY2016 $621M**



**Basic Energy Sciences**

**FY2016 $1849M**



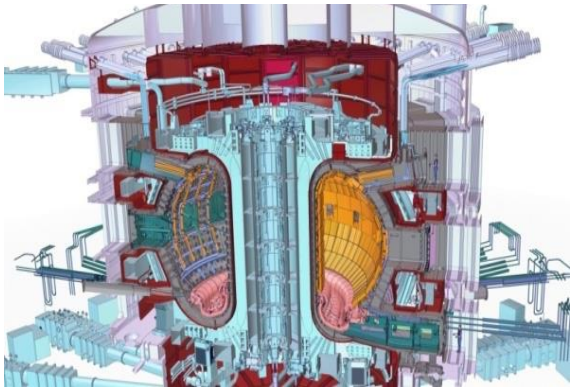
**Biological and Environmental Research**
**FY2016 $609M**

**High Energy Physics**

**FY2016 $795M**

**Fusion Energy Sciences**

**FY2016 $438M**



**Nuclear Physics**

**FY2016 $617M**

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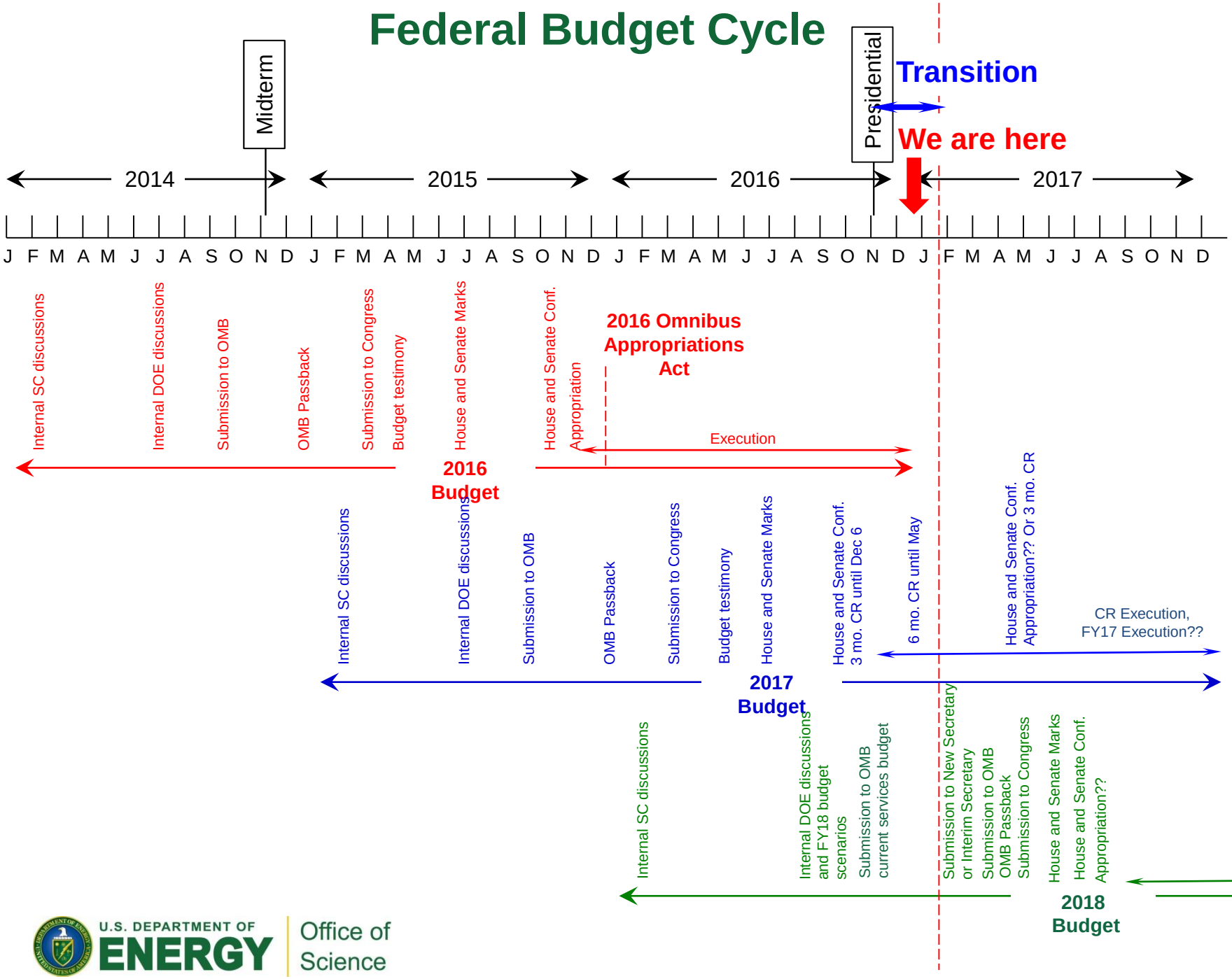
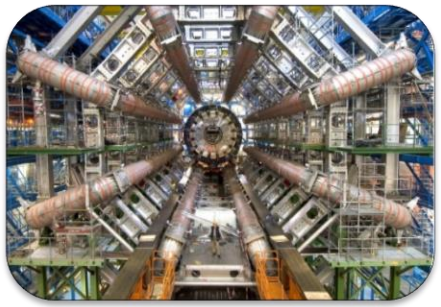
# Federal Budget Cycle



# Office of Science FY17 Request: $5.67B, +6.1%



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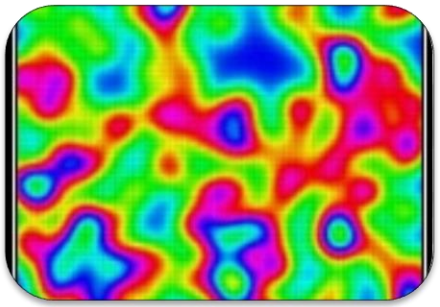

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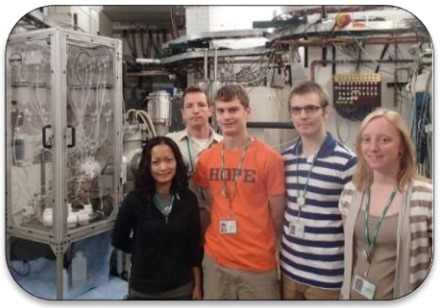


> 20,000 Scientists Supported

Funding at >300 Institutions including all 17 DOE Labs

Facility Operations: 36%, $2.06B

>35,000 Scientific Facility Users

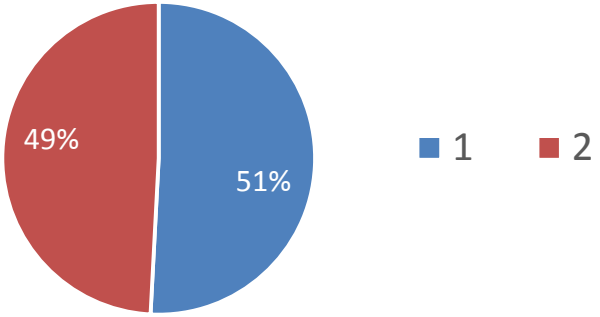

$1.8B Mission Innovation

Without $100M mandatory, $5.57B, +4%, Flat at $5.35B in CR, no new starts

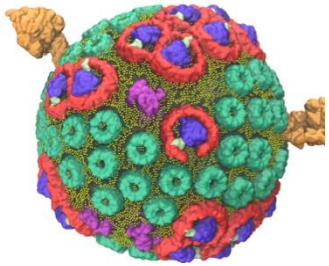
# Advanced Scientific Computing Research

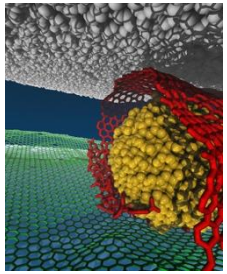
**Discovering, developing, and deploying computational and networking capabilities for analysis, modeling, simulation, and prediction of complex phenomena**

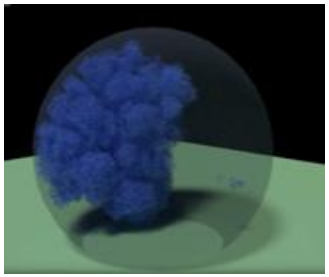
- High performance computing systems at: Oak Ridge and Argonne Leadership Computing Facilities, and the National Energy Research Scientific Computing Center.
- Research: applied math, computer science, high-performance networks (ESNet), and computational partnership (SciDAC) in support of next-generation HPC systems and applications, including exascale computing.




FY16 ASCR Total: $621M





# FY17 Appropriations Marks, 4-14-16

| | FY 2016 President's Request | FY 2016 Enacted Approp. | FY 2016 Current Approp. | FY 2017 President's Request | FY 2017 House Mark | FY 2017 Senate Mark |
|---|---|---|---|---|---|---|
| ASCR | 620,994 | 621,000 | 621,000 | 663,180 | 621,000 | 656,180 |
| BES | 1,849,300 | 1,849,000 | 1,849,000 | 1,936,730 | 1,859,972 | 1,912,630 |
| BER | 612,400 | 609,000 | 609,000 | 661,920 | 595,000 | 637,000 |
| FES | 420,000 | 438,000 | 438,000 | 398,178 | 450,000 | 280,110 |
| HEP | 788,000 | 795,000 | 795,000 | 817,997 | 823,009 | 832,997 |
| NP | 624,600 | 617,100 | 617,100 | 635,658 | 620,000 | 635,658 |
| WDTS | 20,500 | 19,500 | 19,500 | 20,925 | 20,925 | 20,925 |
| SLI | 113,600 | 113,600 | 113,600 | 130,000 | 122,397 | 130,000 |
| S&S | 103,000 | 103,000 | 103,000 | 103,000 | 103,000 | 103,000 |
| PD | 187,400 | 185,000 | 185,000 | 204,481 | 184,697 | 191,500 |
| University Grants (Mandatory) | ... | ... | ... | 100,000 | ... | ... |
| SBIR/STTR (SC) | ... | ... | ... | ... | ... | ... |
| Total Budget Authority and Obligations, Office of Science | 5,339,794 | 5,350,200 | 5,350,200 | 5,672,069 | 5,400,000 | 5,400,000 |
| SBIR/STTR (DOE) | ... | ... | ... | ... | ... | ... |
| Rescission of Prior Year Balances | ... | -3,200 | -3,200 | ... | ... | ... |
| Total, Office of Science | 5,339,794 | 5,347,000 | 5,347,000 | 5,672,069 | 5,400,000 | 5,400,000 |

# FY17 Appropriations Marks, 4-14-16

Bipartisan Support for Basic Science

- **Science - $5.5B (+3%) for both marks compared to FY16 enacted but some differences of opinion**
  - ASCR
    - FY16 Enacted $621M
    - FY17 Request $663M
    - Senate Mark $656M
    - House Mark $621M

# Transition SC Budget Planning
## Scenarios extended for FY 2018 – FY 2022

- OMB Transition Budget Scenario – Current Services
  - 2016 appropriated +2% growth per year in outyears ( FY18 4.2% higher than FY16 enacted, 0.04% higher than FY17 Request )
    - Identification and prioritization of the activities that are delayed, suboptimal or cannot be sustained, including accelerated Exascale

- Internal 'Requirements' Scenario – Aspirational, for discussion with new Secretary, new Administration and new Congress after Inauguration
  - 2016 appropriated +7% growth per year in outyears ( consistent with Senate authorizations mark for doubling of science budget in ten years ) + over-target request for acceleration of Exascale
    - Optimize funding levels for construction and operations
    - Include all requirements, such as full ITER first plasma funding, Exascale Initiative acceleration, P5 projects, science support for Mission Innovation, …

# SC Transition

- DOE Transition 'Landing' Team Lead Tom Pyle, President of American Energy Alliance, named Nov. 21
- Arrived at DOE HQ Monday, Nov. 28
- DOE team now has 11 official members
- Transition briefings started at SC on Dec. 7 ( Steve Binkley )
- Secretary Moniz met with Gov. Perry on Dec. 15
- Cabinet nomination hearings begin January 10 with Justice
- January 17 – Steve Binkley becomes acting SC-1 as well as SC-2 until a new Office of Science Director is nominated and confirmed

-END-