



U.S. DEPARTMENT OF
ENERGY

Office of
Science

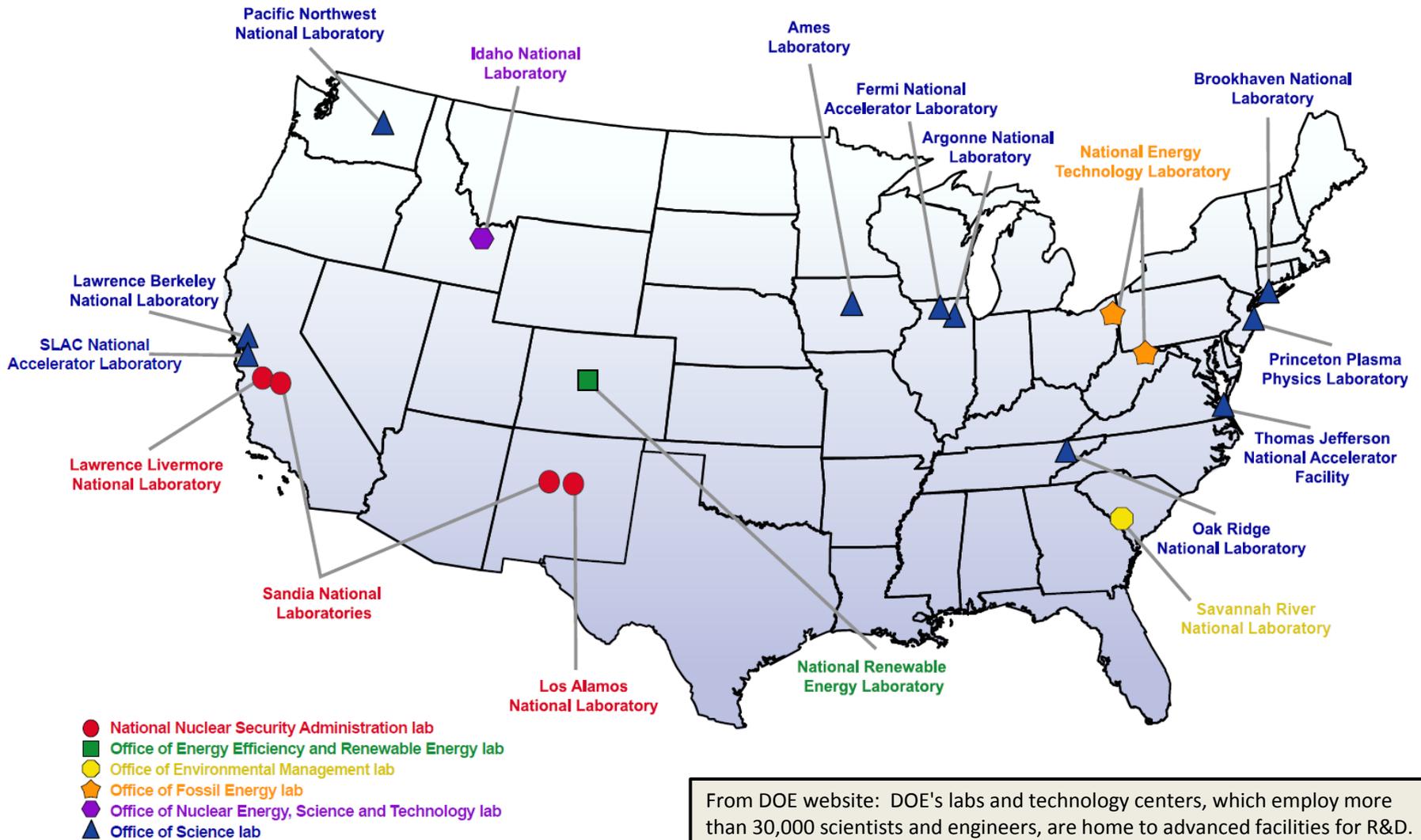
DOE/SC Fellows Programs and Other Opportunities

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DOE Labs Employ ~30,000 Scientists and Engineers

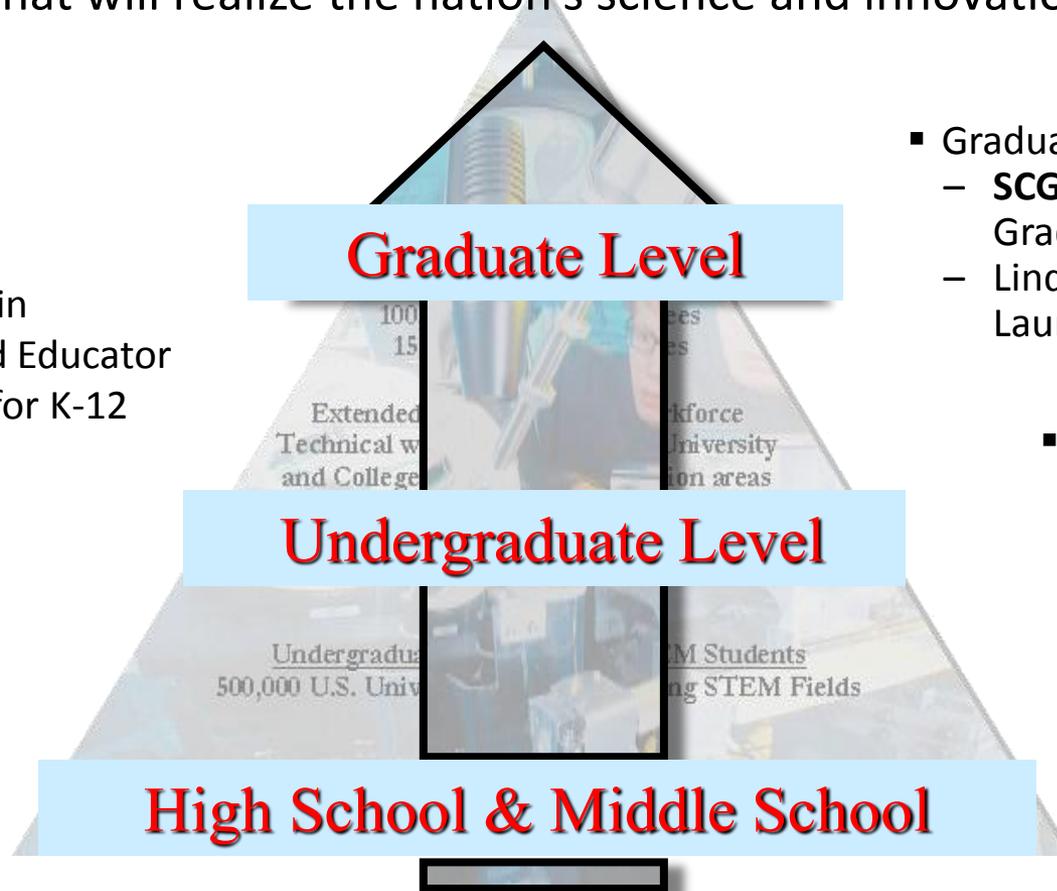


From DOE website: DOE's labs and technology centers, which employ more than 30,000 scientists and engineers, are home to advanced facilities for R&D.

Office of Workforce Development for Teachers and Scientists (WDTs) <http://science.energy.gov/wdts>

Mission: To develop the next generation of scientists and engineers to support Department missions, administer its programs, and conduct the research that will realize the nation's science and innovation agenda.

- Albert Einstein Distinguished Educator Fellowship (for K-12 Educators)



- Graduate Research Awards
 - **SCGF:** Office of Science Graduate Fellowship
 - Lindau Meeting with Nobel Laureates
- Student Research Internships at DOE Labs
 - **SULI:** Science Undergraduate Laboratory Internship
 - **CCI :** Community College Institute of Science and Technology
 - **VFP :** Visiting Faculty Program

- **NSB:** National Science Bowl



Science Undergraduate Laboratory Internship (SULI)

Goal: Encourage undergraduate students to pursue science, technology, engineering, or mathematics (STEM) careers, especially relevant to the DOE mission, by providing research experiences at Department of Energy (DOE) National Laboratories under the direction of laboratory scientific and technical staff, who serve as research advisors and mentors.



The SULI program places undergraduate students in paid internships in science and engineering research activities at DOE National Laboratories. Students work with laboratory staff scientists or engineers on projects related to ongoing research programs. Appointments are for 10 weeks during the Summer Term (May through August) or for 16 weeks during the Fall Term (August through December) and Spring Term (January through May).

570 undergraduates supported in
FY 2010

SC Graduate Fellowship Program

(PM contact: ping.ge@science.doe.gov)

- Begun in 2009 with ARRA funding and WDTS base funding, the SCGF program provides 3-year fellowship awards totaling \$50,500 annually, to graduate students pursuing advanced degrees in fundamental basic research areas relevant to Office of Science research programs.
- The awards provide support towards tuition, a stipend for living expenses, and support for research expenses such as travel to conferences and to DOE user facilities.
- Fellows participate in an annual research meeting with SC-supported scientists and learn how to access SC scientific user facilities; SC research program managers are encouraged to include Fellows in programs' meetings.
- 150 Fellowships awarded in FY 2010.



DOE SCGF Cohort 2010 at the SCGF Annual Meeting
at Argonne National Laboratory.

DOE Office of Science

Early Career Research Program

FY2012 is 3rd year of this University & DOE Laboratory funding opportunity:

- **Eligibility: Outstanding scientists early in their careers**
 - Must be within 10 years of having received their PhD
 - An untenured assistant or associate professor on the tenure track or a full time nonpostdoctoral, permanent DOE national laboratory employee
- **Minimum Funding:**
 - University -- \$750,000 over 5 years; typically \$150,000 per year
 - Laboratory -- \$2,500,000 over 5 years; typically \$500,000 per year (including at least 50% of the PI's salary)

ASCR applications are focused on basic research programs:

- **Applied Mathematics topic areas:**
 - Architecture-aware linear, nonlinear & PDE solvers
 - Large-scale scientific data analysis
 - Optimization under uncertainty
 - Innovative models & methods for multi-scale complex systems
- **Computer Science – topic areas on 3 key software challenges for exascale platforms**

ASCR Program Contact: Steven.Lee@science.doe.gov



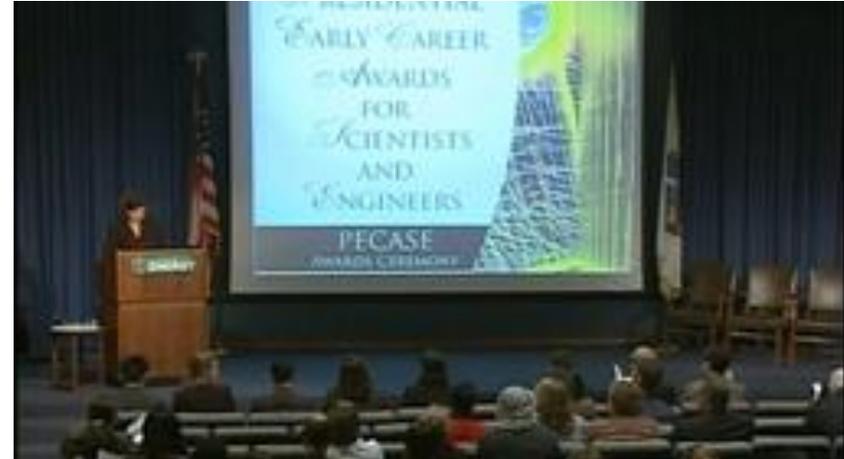
ASCR Early Career Awardees

FY2010 ASCR Early Career Awardees:

- ❖ Grigory Bronevetsky – LLNL
- Patrick Chiang – Oregon State
- ❖ Christiane Jablonowski – U Michigan
- Youssef Marzouk – MIT
- Kalyan Perumalla – ORNL
- Michelle Strout – Colorado State
- Anil Vullikanti – Virginia Polytechnic

FY2011 ASCR Early Career Awardees:

- Alireza Doostan – U Colorado
- Anantharaman Kalyanarama – WA State
- Peter Lindstrom – LLNL
- Xipeng Shen – William & Mary
- ❖ *Alexandre Tartakovsky – PNNL*



PECASE Award announcement October 13, 2011

- ❖ PECASE Winners - Presidential Early Career Award for Scientists and Engineers

DOE Computational Science Graduate Fellowship

- **Started in 1992 because of the critical importance of computational science to DOE's core missions and a recognition of our nation's growing and continuing need for broadly trained advanced computational scientists in government laboratories, academia and industry**
 - 17 classes have completed the fellowship
 - 4 classes are in progress including the incoming class starting Sept. 1, 2011
- **Requires that fellows**
 - plan and follow a course of study that transcends the bounds of traditional academic disciplines
 - participate in a 12-week research experience at a DOE lab in an area of research outside of the student's dissertation subject
- **Funded by both SC/ASCR and NNSA/ASC**



DOE CSGF Program

- **Eligibility**

- U. S. citizens or permanent resident aliens pursuing a PhD in scientific or engineering disciplines with an emphasis in high-performance computing
- First or second year of graduate study or,
- Exceptional senior undergraduates who can meet all the requirements

- **Benefits**

- Up to four years of support
- Full tuition and required fees will be paid during the appointment period.
- Yearly stipend of \$36,000
- Academic allowance of \$5,000 the first year and \$1,000 in the remaining years for the professional development of the fellow

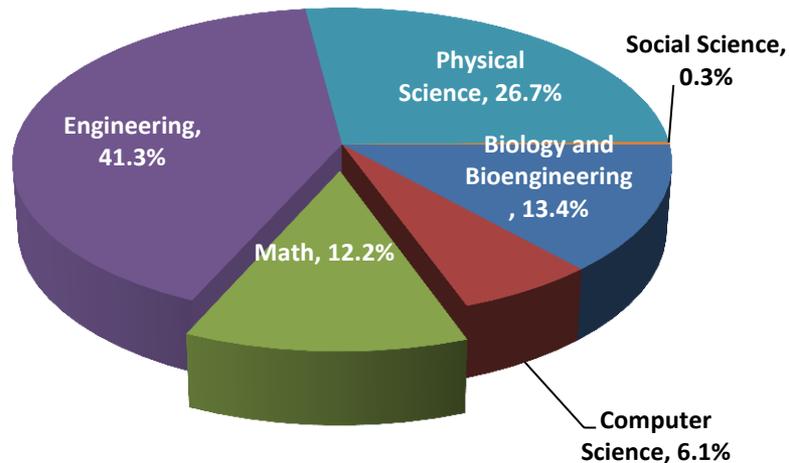
Obligations

- **Full time enrollment**
- **Program of study (POS)**
 - that will provide a solid background in three areas:
 - a scientific or engineering discipline,
 - computer science and
 - applied mathematics.
 - completed prior to the start of the third year of the fellowship
 - changes in the POS may be made only with the advance consent of the **DOE CSGF steering committee**.
- **Practicum (research assignment) -- to broaden the fellows' experience outside the main thesis path and to make them become better aware of the areas that define computational science.**
 - at participating DOE research laboratory
 - at least one twelve-week period
 - completed before the end of the second year of the fellowship.
 - additional financial allowance is provided to cover extra expenses during this time
- **Annual fellowship meeting**



Fellow and Alumni Information

Areas of Study (including Alums)



Of the 248 alumni who we have employment information:

18 % DOE Laboratories

33% Industry

36% Academics

**9% Other Government Agency
or Lab**

3% Graduate Students

2% Other

Of 628 applications received in 2011, 18 new fellows were accepted



Deadlines / Timelines

- **Science Undergraduate Laboratory Internships:**
 - Spring 2012 Internships: Applications due November 30, 2011
 - Summer 2012 Internships: Applications due January 10, 2012
 - Website: <http://science.energy.gov/wdts/suli/>
- **Computational Science Graduate Fellowship:**
 - Take GRE's by Mid-November
 - Application and Materials due: January 10, 2012
 - Website: <http://www.krellinst.org/csgf>
- **Early Career Research Program:**
 - 2011 pre-application deadline past:
 - Based on this year
 - Announcement posted mid July
 - Pre-applications due early September
 - Full applications due mid to late November
 - Website: <http://science.energy.gov/early-career/>
- **Science Graduate Fellowship Program**
 - Pending FY12 appropriations decisions
 - Website: <http://scgf.orau.gov/>



20 BUILDING A COMMUNITY OF LEADERS
DOE CSGF 1991-2011

Department of Energy

Computational Science Graduate Fellowship

The Department of Energy Computational Science Graduate Fellowship (DOE CSGF) program provides outstanding benefits and opportunities to students pursuing doctoral degrees in fields of study that utilize high-performance computing to solve complex problems in science and engineering. Now celebrating its 20th anniversary, the fellowship has driven the expansion of computational science, encouraging its acceptance as the "third pillar" of scientific discovery.

BENEFITS

- \$36,000 yearly stipend
- Payment of all tuition and fees
- Yearly conferences
- \$5,000 academic allowance in first year
- \$1,000 academic allowance each renewed year
- 12-week research practicum
- Renewable up to four years

APPLY ONLINE
The DOE CSGF program is open to senior undergraduates or students in their first or second year of doctoral study. Access application materials and additional information at:
www.krellinst.org/csgf

FOR MORE INFORMATION
Fell 1020707
1000 Coolidge Tower Drive, Suite 101, Ames, IA 50010
email: csgf@krellinst.org | www.krellinst.org/csgf

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This is an equal opportunity program and is open to all qualified persons without regard to race, gender, religion, age, physical disability or national origin.



Questions?

