



# GROUNDING IN MISSION, GUIDED BY TOMORROW

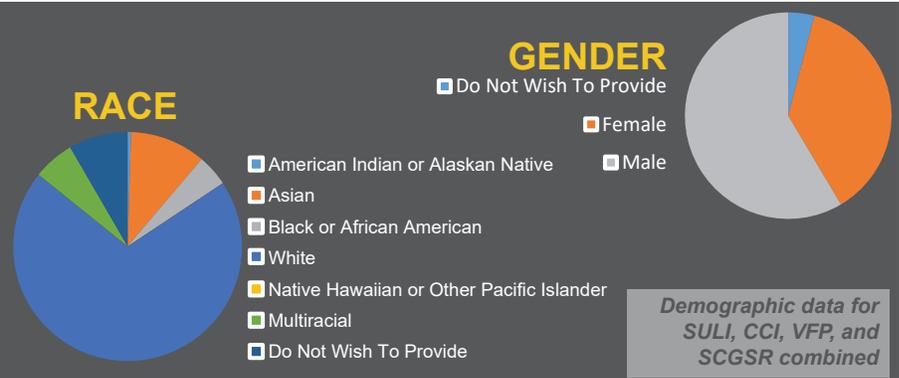
For over 60 years, the Department of Energy (DOE) has offered students and researchers training opportunities that support its mission in science, energy, national security, and the environment. WDTS plays a leading role in advancing this responsibility. Guided by the goal of providing DOE and our nation with a strong, sustained workforce in science, technology, engineering, and math (STEM), WDTS programs support learners of all ages in preparing for the STEM workforce of tomorrow.

## COMMITTED TO ENSURING EVERY LEARNER CAN IMAGINE AND ACHIEVE A CAREER IN STEM

Beginning with the **National Science Bowl®** competition for middle-and high-school students, the **Office of Workforce Development for Teachers and Scientists (WDTS)** programs seek to have all learners see themselves as scientists. This goal is furthered by the **Albert Einstein Distinguished Educator Fellowship**, which brings the real-world experience of K-12 educators to Federal and Congressional offices. Through **Science Undergraduate Laboratory Internships (SULI)** and **Community College Internships (CCI)**, college students discover science and technology careers at the DOE National Laboratories and gain the experience needed to transition from intern to employment. The **Visiting Faculty Program (VFP)** connects faculty with DOE researchers and resources to advance their research competitiveness. Finally, graduate students in the **Office of Science Graduate Student Research (SCGSR)** program conduct research of national importance using world-leading facilities and scientific capabilities available only through the DOE complex.

## UNIQUE ASSETS, UNPARALLELED ACCESS

WDTS programs stand out among STEM training programs for offering unparalleled access to state-of-the-art scientific facilities at the DOE National Labs and sites. Student researchers don't just observe – they train alongside world-class scientists and engineers solving today's energy, environment, and national security challenges.

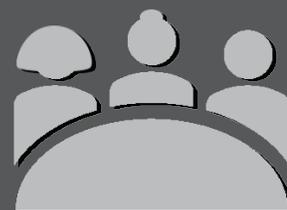


## FY 2019, BY THE NUMBERS:

**\$22.5 Million**  
Total Budget

## WDTS PROGRAMS SUPPORTED:

**15,980** participants, from all **50** states, Puerto Rico, and the District of Columbia, through events and internships at **18** DOE National Labs and sites.



## PARTICIPANTS REPRESENTED:



**440** higher education institutions, including



**55** minority serving institutions (MSIs)

**1,863** K-12 schools.

## FY 2019 PARTICIPANTS' PROJECTS

Spanned **6** DOE offices and all **6** Office of Science programs.



**58%** of SCGSR participants utilized one of 18 scientific user facilities.



# UNDERGRADUATE STUDENT AND FACULTY PROGRAMS

Impacting students at a pivotal point in their education, WDTs undergraduate student programs strive to transform STEM learning into STEM careers. Working alongside researchers at the DOE National Labs, student interns are not only able to imagine themselves as scientists – they become scientists. Visiting faculty expand their research horizons through new collaborations.

## SCIENCE UNDERGRADUATE LABORATORY INTERNSHIPS (SULI)

World-renowned DOE National Labs, state-of-the-art facilities, and dedicated scientists and engineers on the verge of the next great discovery, all supporting DOE’s mission. And right there, assisting them in every step of groundbreaking work, are SULI interns. This stipend-based, research-focused internship is available in a 10-week Summer Term or 16-week Fall and Spring Terms.

## COMMUNITY COLLEGE INTERNSHIPS (CCI)

The CCI program gives community college students an incomparable opportunity for technical training at DOE National Labs and facilities. During a 10-week term, interns work on technology or instrumentation projects that advance solutions in areas including cybersecurity, artificial intelligence, nuclear and renewable energy, accelerator technology, environmental management and advanced manufacturing.

## VISITING FACULTY PROGRAM (VFP)

This stipend-based 10-week program seeks to increase the research competitiveness of faculty members and their students at institutions underrepresented in the research community. Selected faculty collaborate with DOE scientists and engineers on research projects aligned with DOE mission areas.

### FY 2019 SULI AND CCI INTERNS REPORT:

- 75%** They are more likely to consider pursuing a career at a DOE laboratory as a result of their internship experience
- 94%** Their mentor was a positive role model
- 95%** They gained skills not taught in class
- 98%** They recommend the program to peers

## SULI, CCI, AND VFP: BY THE NUMBERS

**\$10.3M, \$1M, and \$1.7M**

SULI, CCI, and VFP FY 2019 Budgets

## PARTICIPANTS AT 17 LABS AND SITES

FY 2002 – FY 2019: **12,638**  
FY 2019: **1,121**

FY19 participants came from

**437** higher education

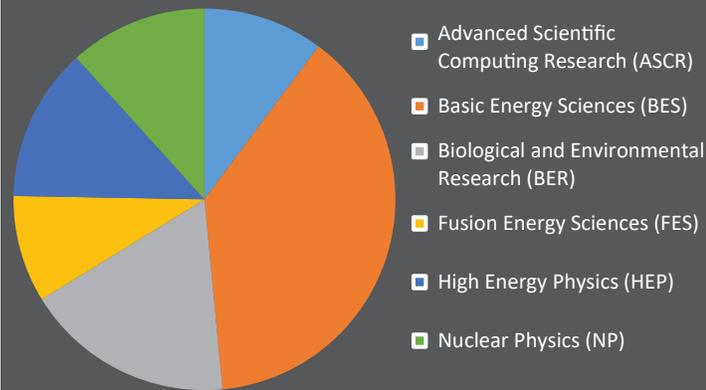
institutions including **53**

minority serving institutions (MSIs).



## FY 2019 PARTICIPANTS' PROJECTS

**49%** DOE Office of Science:



**27%** Other DOE - mission related projects

**24%** DOE Office of Energy Efficiency and Renewable Energy



# OFFICE OF SCIENCE GRADUATE STUDENT RESEARCH PROGRAM (SCGSR)

Today's complex national and global scientific and technical challenges require innovative thinking and unconventional approaches. By supporting graduate students with world-class training and access to state-of-the-art facilities and resources at DOE National Labs, WDTS elevates the next generation of STEM leaders and secures our national position at the forefront of discovery and innovation.

SCGSR prepares graduate students for STEM careers of critical importance to the DOE Office of Science mission through extended research residencies at the DOE National Labs. Graduate students tackle real-world problems alongside DOE scientists, test-driving a career outside academia while advancing their thesis research. SCGSR graduate students have access to the world-class expertise, capabilities, and resources only available through the DOE national enterprise.

## WHAT PARTICIPANTS SAY ABOUT SCGSR:

- >80%** are interested in employment or post-doctoral positions at DOE National Labs
- 97%** reported that SCGSR exposed them to career opportunities outside academia
- 99%** received training different from that available at their universities
- 99%** expanded their networks
- 100%** report that SCGSR enabled completion of an important part of their dissertations

## SCGSR: BY THE NUMBERS

**\$3.5 million**  
FY 2019 Budget

## PARTICIPANTS

FY 2019: **111** participants at **14** DOE National Labs.

Represent **73** Ph.D. - granting institutions in the physical sciences;



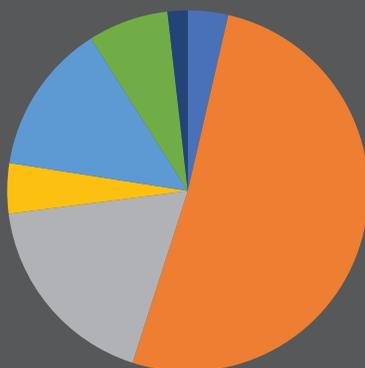
approximately **1/3** women.

Since 2014: **600** participants and **498** collaborating DOE scientists at **17** DOE National Labs and **1** site.



## FY 2019 PARTICIPANTS' PROJECTS

Spanned all **6** Office of Science programs and **4** cross-program "convergence areas."



- Advanced Scientific Computing Research (ASCR)
- Basic Energy Sciences (BES)
- Biological and Environmental Research (BER)
- Fusion Energy Sciences (FES)
- High Energy Physics (HEP)
- Nuclear Physics (NP)
- Convergence

**58%** of participants utilized one of **18** scientific user facilities.



# K-12 STUDENT AND EDUCATOR PROGRAMS

*Developing the next generation of scientists begins before college. Recognizing this, WDTs strives to excite young learners to engage with science and math topics, while supporting their teachers in providing the highest quality STEM instruction. Only by inspiring our K-12 learners can our nation meet its STEM workforce needs of the future.*

## NATIONAL SCIENCE BOWL®

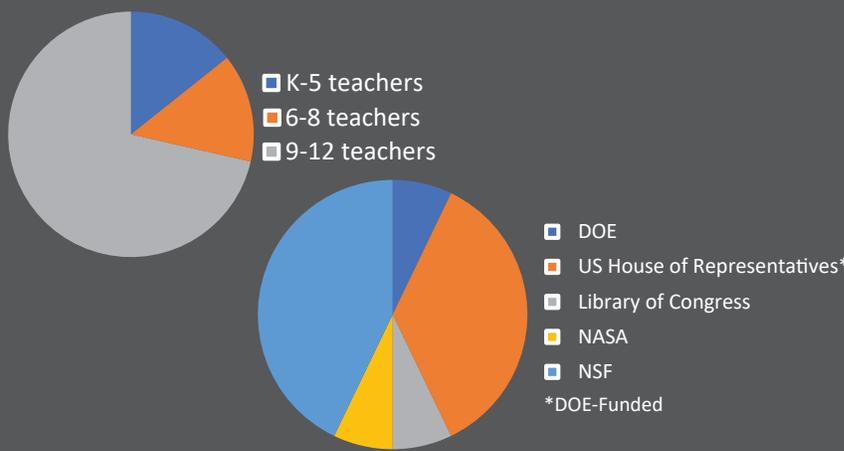
In this nationwide academic competition, middle and high school student teams face off in a fast-paced Q&A quiz show format, being tested on a range of science disciplines including biology, chemistry, Earth and space science, physics, energy, and math. DOE launched NSB in 1991 to encourage students to excel in science and mathematics topics of importance to DOE and the Nation.

## ALBERT EINSTEIN DISTINGUISHED EDUCATOR FELLOWSHIP (AEF)

AEF offers a unique opportunity for STEM K-12 educators to serve 11 months in a Federal agency or U.S. Congressional Office. Einstein Fellows contribute STEM education expertise, years of teaching experience, and valuable professional insights to their host office's STEM education efforts, while gaining professional development to enhance their teaching and careers.

## AEF: FY 2019 BY THE NUMBERS

**\$1.2M** budget, with an additional **\$558,000** contributed by **3** partner agencies, supporting a total of **14** fellows.



Since 1990, AEF has supported **319** fellows

## NSB: FY 2019 BY THE NUMBERS

**\$2.7M** Budget

### STARTING WITH:

- 112** regional events,
- 3,007** regional teams, and **14,734** team members from
- 1,849** schools and **326** Congressional districts

### ULTIMATELY...

**64** high school & **48** middle school teams (**505** students) advanced to the national competition, where, since **1991**, around **305,000** students have participated.

### 2019-2020 COMPETITION FACTS:

- 4,850** science and math questions were asked
- 810** questions required knowledge of science from DOE National Labs
- 8,000** volunteered to make NSB a success!