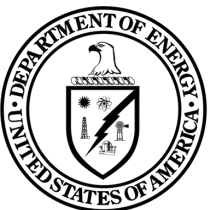




OFFICE OF WORKFORCE DEVELOPMENT
FOR TEACHERS AND SCIENTISTS

ANNUAL REPORT

FISCAL YEAR 2020



U.S. DEPARTMENT OF
ENERGY

Office of
Science

GROUNDING IN MISSION GUIDED BY TOMORROW

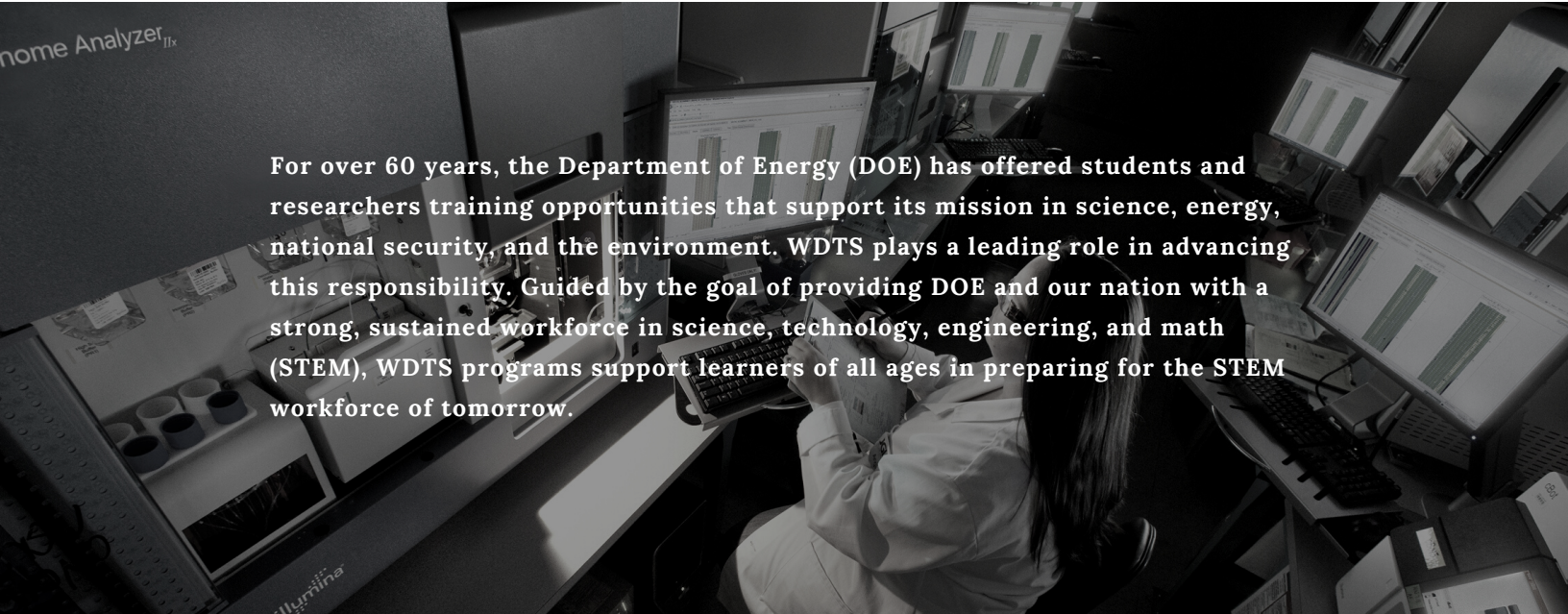
COMMITTED TO ENSURING EVERY LEARNER CAN IMAGINE AND ACHIEVE A CAREER IN STEM

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.



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.

FISCAL YEAR 2020

BY THE NUMBERS

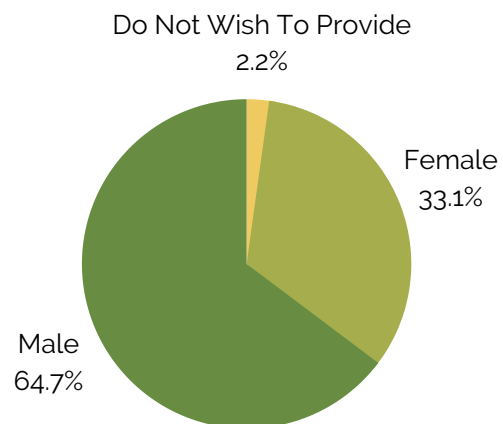
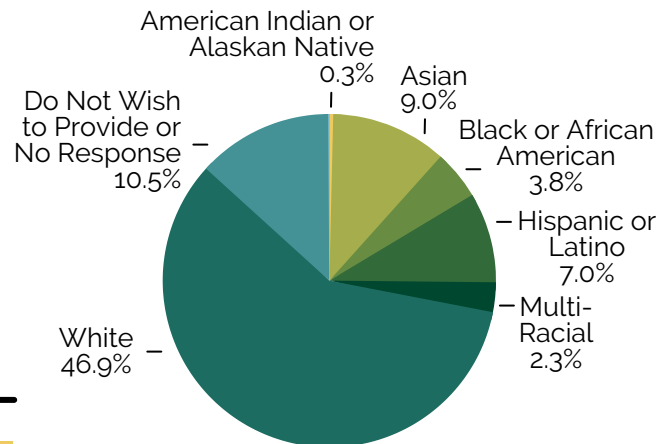
\$28
MILLION
TOTAL BUDGET

WDTS PROGRAMS SUPPORTED:
14,529 PARTICIPANTS,
FROM ALL 50 STATES,
Puerto Rico and the District of Columbia
through events and internships at
23 DOE NATIONAL LABS AND SITES.

PARTICIPANTS REPRESENTED:

369 Higher Education Institutions, including
81 Minority Serving Institutions (MSIs) and
1,706 K-12 Schools

DEMOGRAPHIC DATA FOR SULI, CCI, VFP, AND SCGSR COMBINED



PARTICIPANTS' PROJECTS:

Spanned **6** DOE offices and all **6** Office of Science programs.
43% of SCGSR participants utilized at least one of 28 scientific user facilities.

UNDERGRADUATE STUDENT AND FACULTY PROGRAMS

SCIENCE UNDERGRADUATE LABORATORY INTERNSHIPS (SULI)

At DOE's world-renowned National Labs and state-of-the-art facilities, dedicated scientists and engineers are on the verge of the next great discovery. And right there, assisting in groundbreaking work to support DOE's mission, 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.



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.

SULI, CCI, & VFP: BY THE NUMBERS

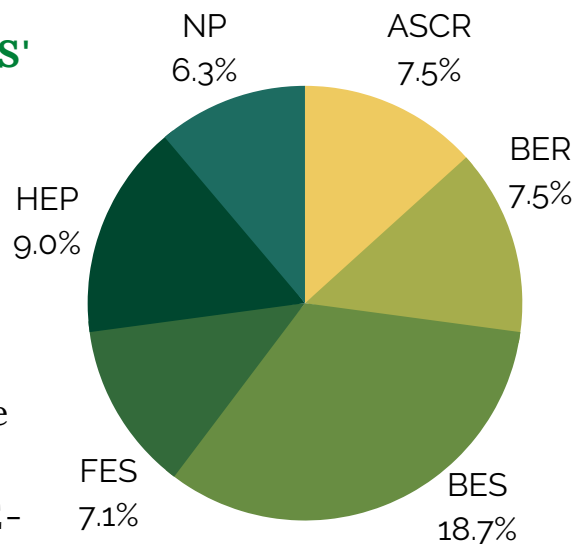
FY 2020 BUDGETS:

\$13.6
MILLION
SULI

\$1.7
MILLION
CCI

\$2.0
MILLION
VFP

FY 2020 PARTICIPANTS' PROJECTS



56% DOE Office of Science

23% Other DOE-mission related projects

21% DOE Office of Energy Efficiency and Renewable Energy

PARTICIPANTS:

13,477 FY 2002-FY 2020

871 FY 2020

Hosted by 16 DOE Labs & Sites

FY 2020 participants represented:

357 HIGHER EDUCATION INSTITUTIONS including

81 MINORITY SERVING INSTITUTIONS (MSIs)

FY 2020	83%	They are more likely to consider pursuing a career at a DOE Lab as a result of their internship experience
SULI & CCI	95%	Their mentor was a positive role model
INTERNS	96%	They gained skills not taught in class
REPORT:	100%	They recommend the program to peers

OFFICE OF SCIENCE GRADUATE STUDENT RESEARCH PROGRAM (SCGSR)

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.



SCGSR: BY THE NUMBERS

FY20 BUDGET:

\$4.5
MILLION

FY 20 PARTICIPANTS' PROJECTS

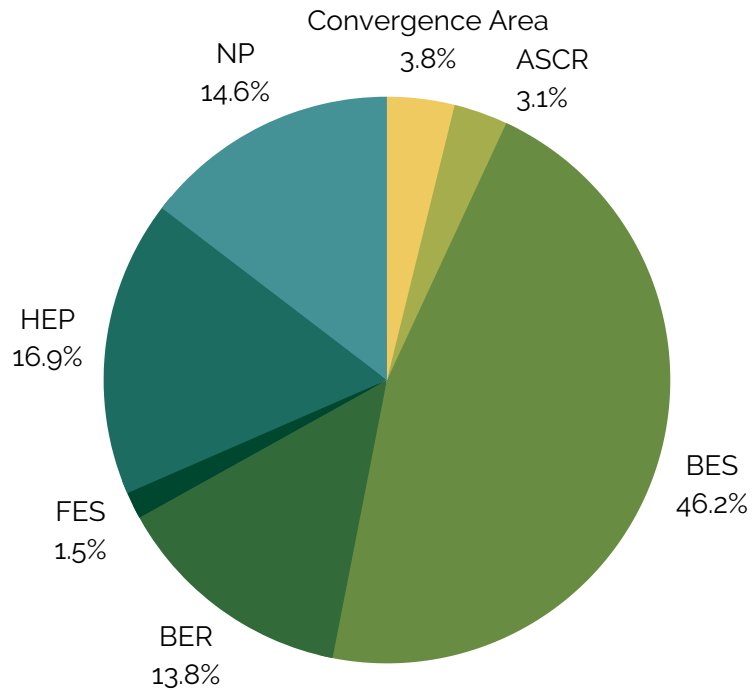
Spanned all **6** Office of Science programs and **2** cross-program "convergence areas."

PARTICIPANTS

130 participants at
14 DOE National Labs

Participants represent **81 Ph.D.-granting institutions** in the physical sciences; about **33% are women**.

Since 2014:
730 participants,
>560 collaborating scientists at
17 National Labs and
1 site.



43% of participants utilized at least one of 28 scientific user facilities.

WHAT PARTICIPANTS

SAY ABOUT SCGSR:

- 98%** Received training not available at their universities
- 100%** Expanded their networks
- > 77%** Are interested in employment or postdoctoral positions at DOE Labs
- 99%** Reported SCGSR introduced them to careers outside academia
- 99%** Reported SCGSR enabled completion of an important part of their dissertation

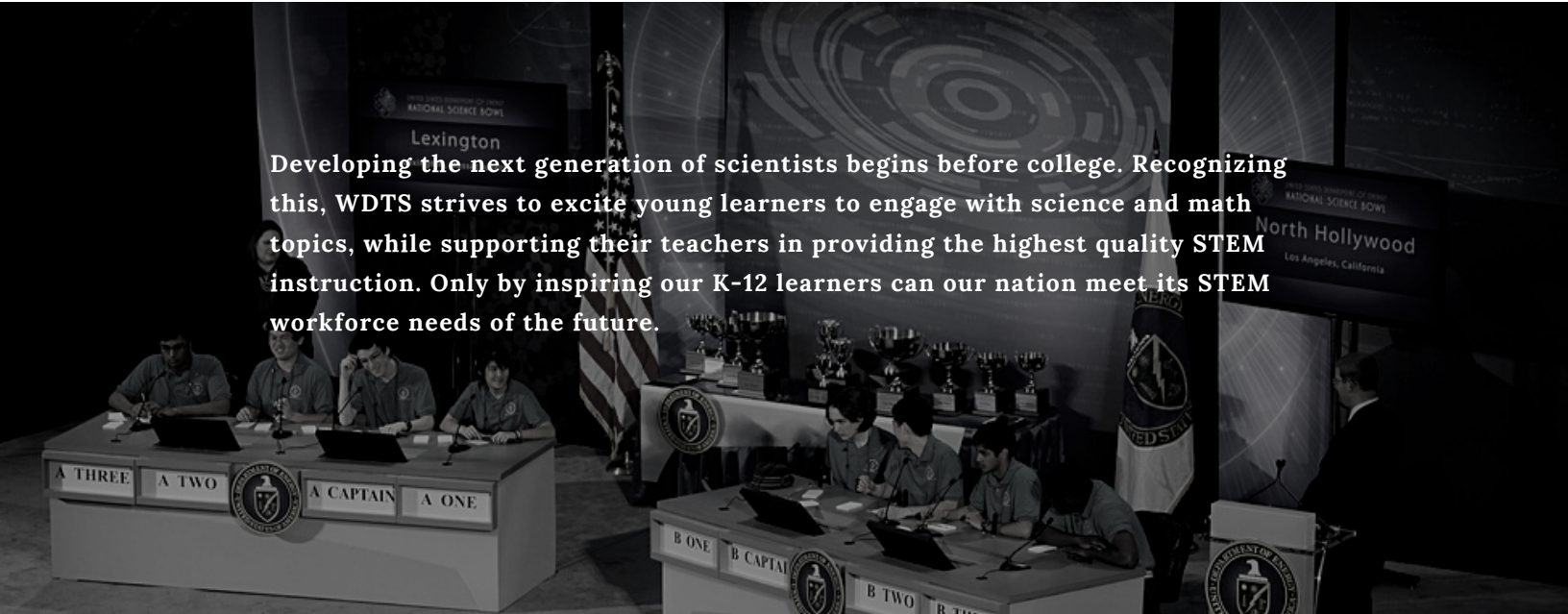
K-12 STUDENT AND EDUCATOR PROGRAMS

NATIONAL SCIENCE BOWL® (NSB)

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 National Science Bowl 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 and years of teaching experience to their host office's STEM education efforts, while gaining professional development to enhance their teaching and careers.



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.

NSB & AEF: BY THE NUMBERS

FY 2020 BUDGETS:

\$2.9
MILLION
NSB

\$1.2
MILLION
AEF

\$0.6
MILLION
CONTRIBUTED TO AEF BY
PARTNER AGENCIES

NATIONAL SCIENCE BOWL

Starting with:

- 112** regional events
- 2,890** regional teams and
- 13,903** team members from
- 1,706** schools and
- 325** Congressional districts

Ultimately...

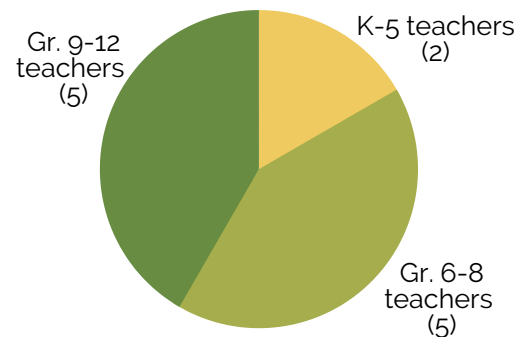
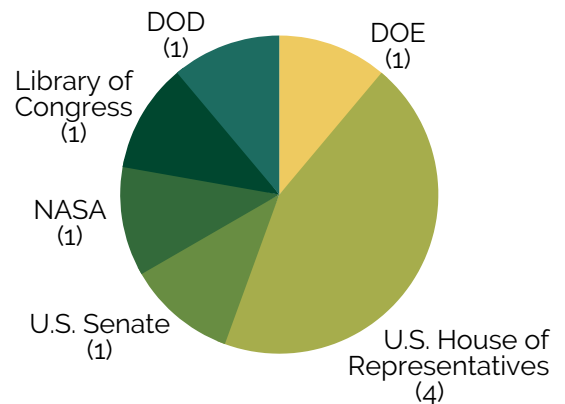
63 high school & **43** middle school teams (**477** students) advanced to the national competition, where approximately **315,000** students have participated over NSB's **30** year history.

COMPETITION FACTS:

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

ALBERT EINSTEIN DISTINGUISHED EDUCATOR FELLOWSHIP

FY 2020: **9** fellows



Since 1990, AEF has supported **328** fellows