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OFFICE OF WORKFORCE DEVELOPMENT  
FOR TEACHERS AND SCIENTISTS

# ANNUAL REPORT

FISCAL YEAR 2021

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U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

# GROUNDING IN MISSION GUIDED BY TOMORROW

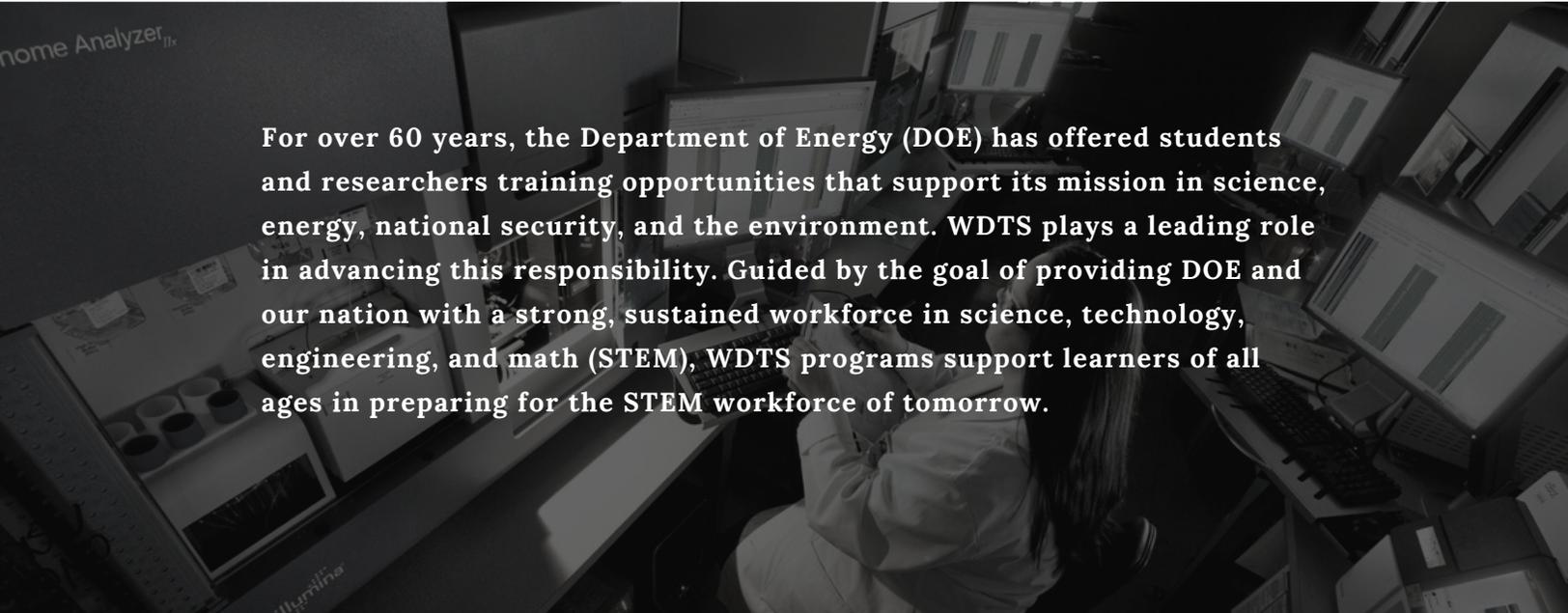
## COMMITTED TO ENSURING EVERY LEARNER CAN IMAGINE AND ACHIEVE A CAREER IN STEM

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 internship to further education or employment. The **Visiting Faculty Program (VFP)** advances the research competitiveness of

faculty from institutions historically underrepresented in the research community, by supporting collaborative research proposals with researchers at the DOE National Labs. 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 critical 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 2021

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## BY THE NUMBERS

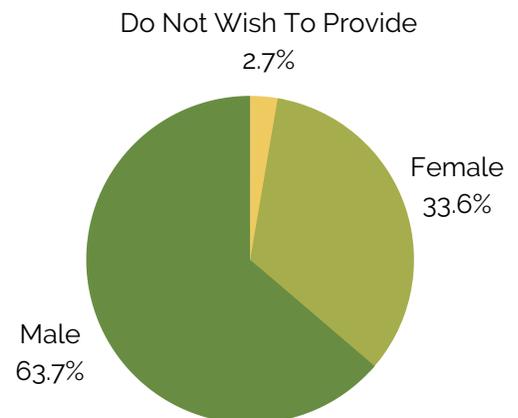
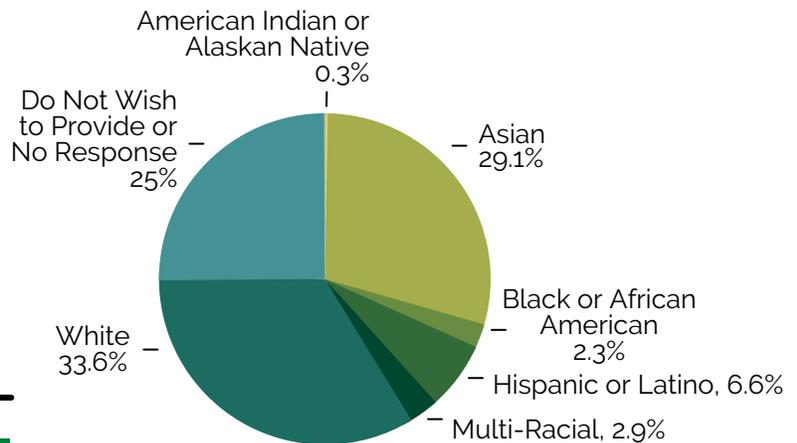
**\$29**  
**MILLION**  
**TOTAL BUDGET**

**WDTS PROGRAMS SUPPORTED:**  
**9,898 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:

**444** Higher Education Institutions, including  
**120** Minority Serving Institutions (MSIs) and  
**1,111** K-12 Schools

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



**PARTICIPANTS' PROJECTS:**  
Spanned **5** DOE offices and all **8** Office of Science programs.  
**49.7%** 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.

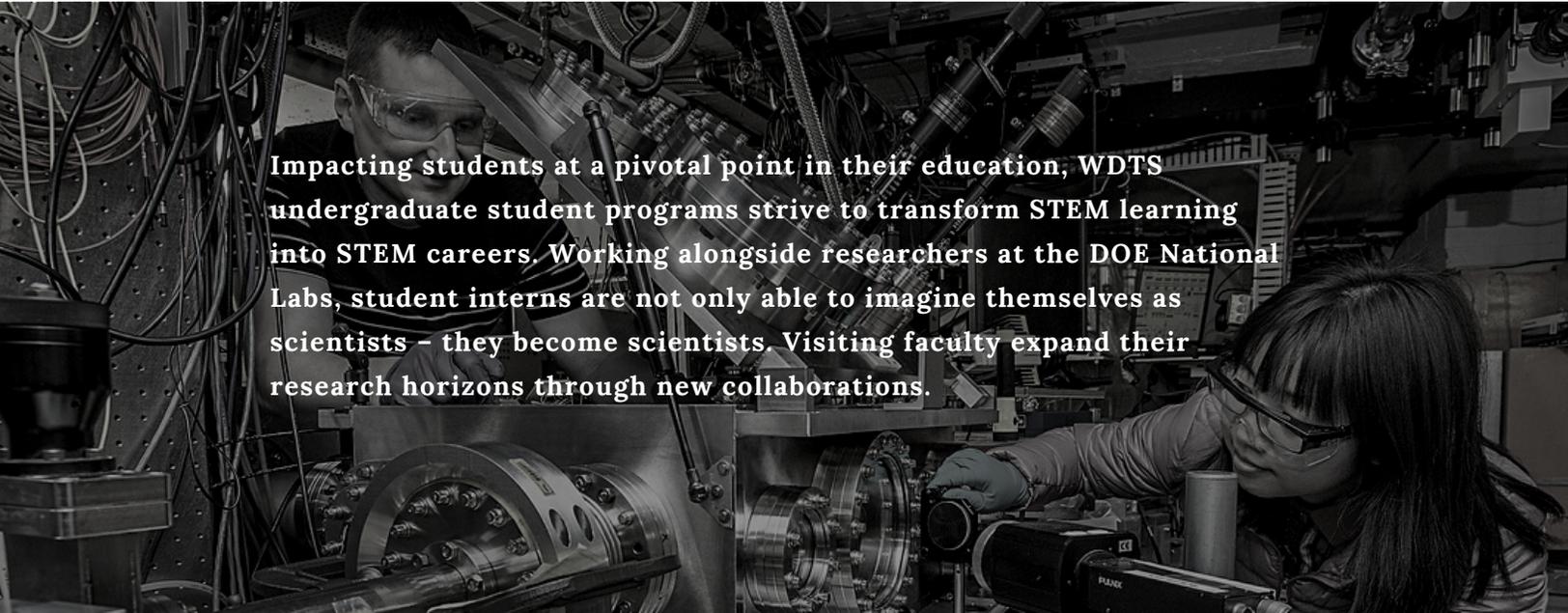
## COMMUNITY COLLEGE INTERNSHIPS (CCI)

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

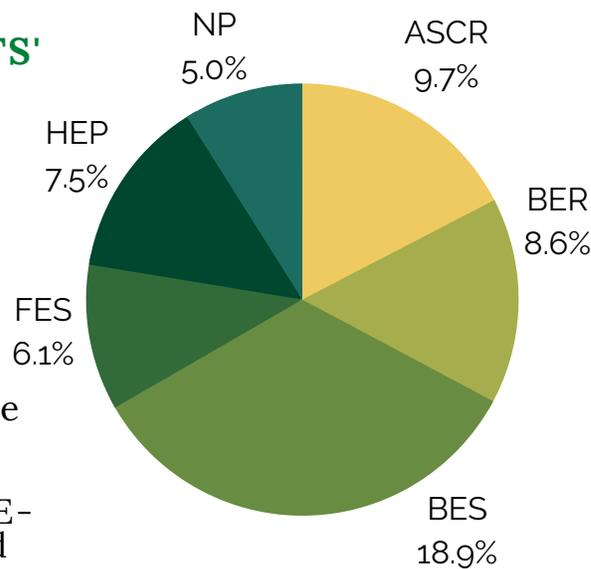
## FY 2021 BUDGETS:

**\$13.8**  
MILLION  
SULI

**\$1.9**  
MILLION  
CCI

**\$1.8**  
MILLION  
VFP

## FY 2021 PARTICIPANTS' PROJECTS



**56%** DOE Office of Science

**23%** Other DOE-mission related projects

**21%** DOE Office of Energy Efficiency and Renewable Energy

## PARTICIPANTS:

**14,748** FY 2002-FY 2021

**1,271** FY 2021

Hosted by 17 DOE Labs & Sites

FY 2021 participants represented:

**435** HIGHER EDUCATION INSTITUTIONS including

**117** MINORITY SERVING INSTITUTIONS (MSIs)

<b>FY 2021</b>	<b>81%</b>	They are more likely to consider pursuing a career at a DOE Lab as a result of their internship experience
<b>SULI &amp; CCI</b>	<b>96%</b>	Their mentor was a positive role model
<b>INTERNS</b>	<b>94%</b>	They gained skills not taught in class
<b>REPORT:</b>	<b>99%</b>	They recommend the program to peers

For additional details on participants, please see the laboratory placement data posted to the below websites:

**SULI:** [SCIENCE.OSTI.GOV/WDTS/SULI](https://science.osti.gov/wdts/suli) | **CCI:** [SCIENCE.OSTI.GOV/WDTS/CCI](https://science.osti.gov/wdts/cci) | **VFP:** [SCIENCE.OSTI.GOV/WDTS/VFP](https://science.osti.gov/wdts/vfp)

## 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 cutting-edge expertise, capabilities, and resources only available through the DOE national enterprise.



**SCGSR awardees have the opportunity for deep immersion in a one-of-a-kind research and professional development environment at DOE national laboratories. Awardees conduct part of their thesis research at a host DOE laboratory or facility in collaboration with a DOE laboratory scientist. This research opportunity advances the graduate students' doctoral thesis and builds their skills and network for future careers.**

# SCGSR: BY THE NUMBERS

**FY21 BUDGET:**

\$5.0  
MILLION

**FY 21 PARTICIPANTS' PROJECTS**

Spanned all **8** Office of Science programs and **4** cross-program "convergence areas."

PARTICIPANTS

145

participants at

18

DOE National  
Labs and Sites

Participants represent

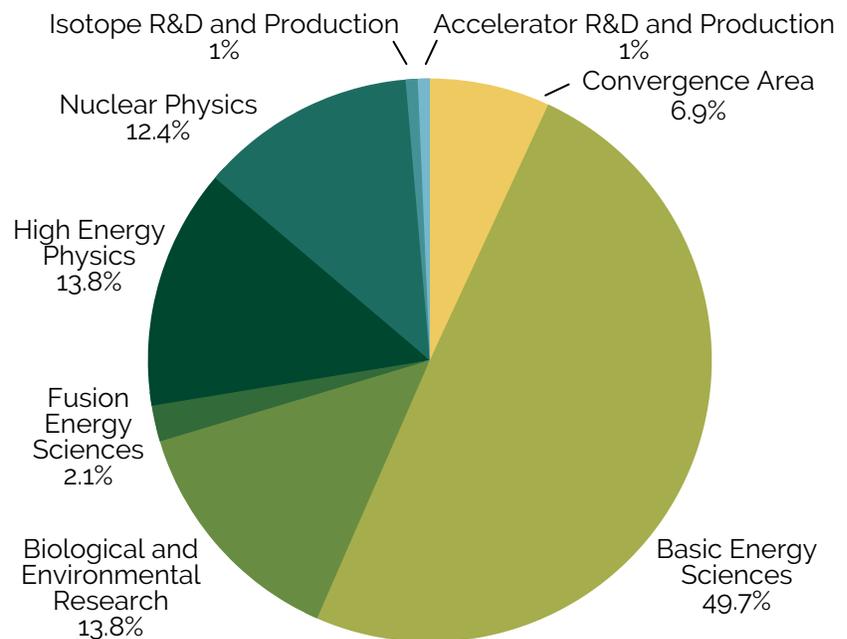
77 Ph.D.-granting  
institutions

in the physical sciences;  
about **33%** are women.

Since 2014:

875 participants,  
>560 collaborating  
scientists at

17 National Labs and  
1 site.



**49.7%** of participants utilized at least one of 28 scientific user facilities.

**WHAT PARTICIPANTS**

**SAY ABOUT SCGSR:**

**99%** Received training not available at their universities

**99%** Expanded their networks

**> 78%** Are interested in employment or postdoctoral positions at DOE Labs

**98%** Reported SCGSR introduced them to careers outside academia

**100%** Reported SCGSR enabled completion of an important part of their dissertation

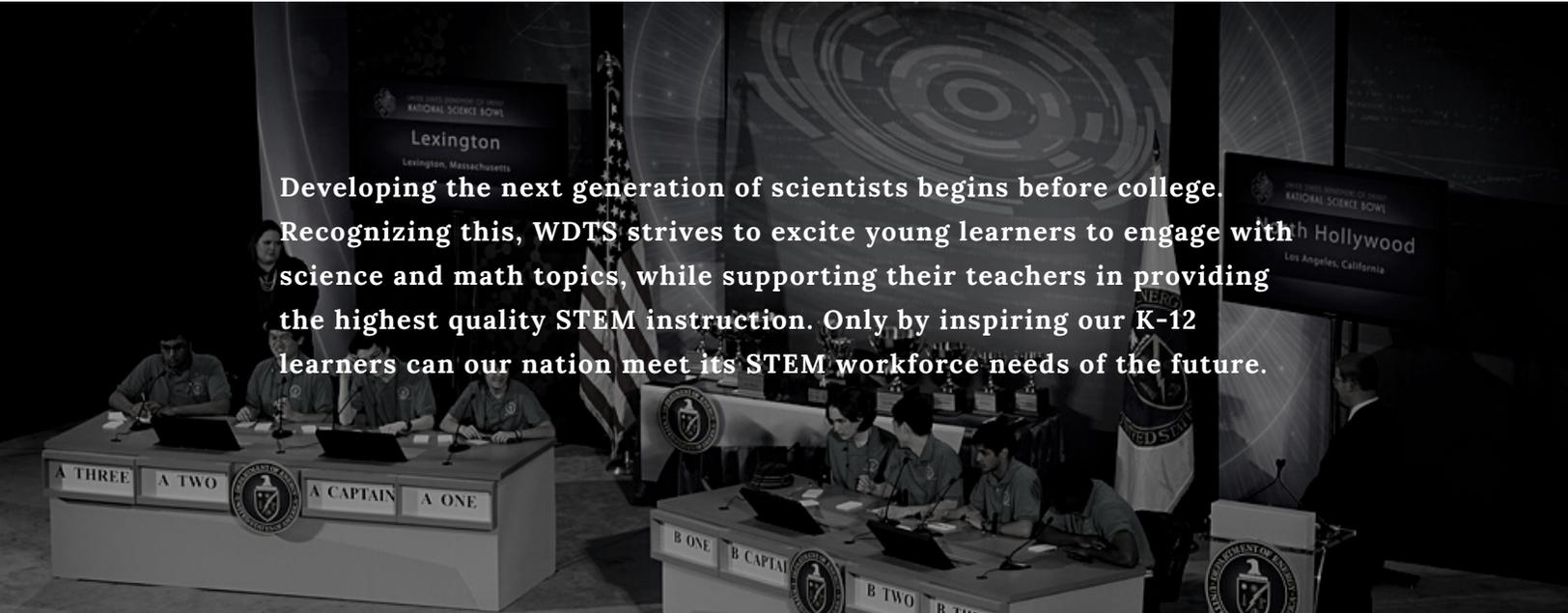
# K-12 STUDENT AND EDUCATOR PROGRAMS

## 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 2021 BUDGETS:**

**\$2.9**  
**MILLION**  
NSB

**\$1.2**  
**MILLION**  
AEF

**\$1.4**  
**MILLION**  
CONTRIBUTED TO AEF BY  
PARTNER AGENCIES

## NATIONAL SCIENCE BOWL

Starting with:

- 107** regional events
- 1,755** regional teams and
- 8,464** team members from
- 1,111** schools and
- 285** Congressional districts

**Ultimately...**

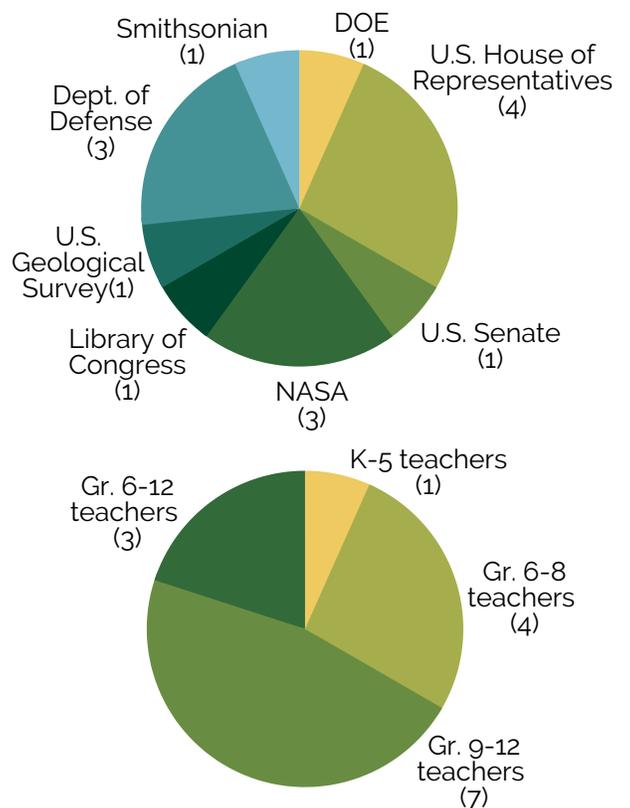
**64** high school & **44** middle school teams (**535** students) advanced to the national competition, where approximately **315,000** students have participated over NSB's **31** year history.

### COMPETITION FACTS:

- 2,160** science and math questions asked
- 360** questions required knowledge of science from DOE National Labs
- 2,000** volunteered to make NSB a success!

## ALBERT EINSTEIN DISTINGUISHED EDUCATOR FELLOWSHIP

FY 2021: **15** fellows



Since 1990, AEF has supported **343** fellows.