

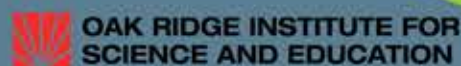
Mentor Spotlight

Former NETL
Participant Now
Mentors Others

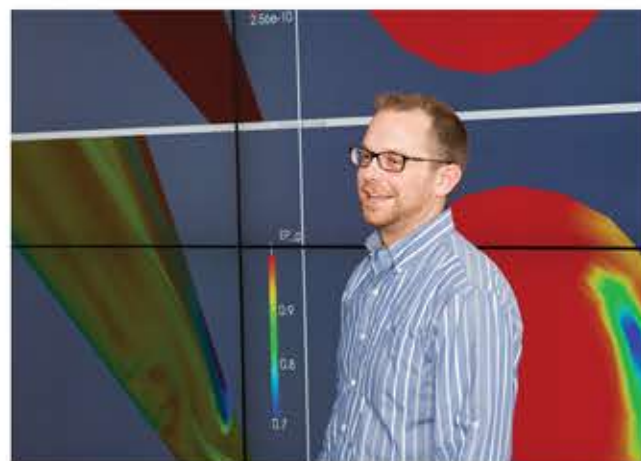
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Science Education Programs at NETL are administered by the Oak Ridge Institute for Science and Education (ORISE), a U.S. Department of Energy (DOE) Institute. ORISE directly supports DOE's national agenda to advance science education and research programs by creating opportunities for collaboration through partnerships with DOE facilities, other federal agencies, the academic community and industry. ORISE is managed for DOE by ORAU.



Jordan Musser, former student participant at the National Energy Technology Laboratory (NETL) and current mentor, has been involved in research at the national laboratory at almost every level. Beginning his career at NETL as an Oak Ridge Institute for Science Education (ORISE) participant, Musser conducted research while working on his master's degree in mathematics. Musser remained with his research group through his subsequent Ph.D. program and postdoctoral appointment.

Now a federal employee with degrees in mechanical engineering (BS and MS) and mathematics (MS and Ph.D.), Musser mentors incoming ORISE participants. He typically mentors two to three ORISE participants at any given time, and as a former participant himself, he finds it rewarding to help these new faces become acclimated.

"I'm always surprised by the unique way ORISE participants address similar problem sets. Since many of our participants come from all over the world, they bring new and interesting ways of approaching problems," stated Musser.



<https://www.orau.gov/netl/>

National Energy Technology Laboratory Longitudinal Follow-Up Study: 2009-2013

Long-Term Impact of NETL
Science Education and
Workforce Development
Programs on Participants
and the Nation



As part of the U.S. Department of Energy (DOE) national laboratory system, the National Energy Technology Laboratory (NETL) advances the energy security of the United States by implementing a broad spectrum of energy and environmental research and development programs. To support this mission, NETL offers students, recent graduates and faculty the opportunity to participate in energy-related research through three highly competitive research participant programs—each of which are managed by the Oak Ridge Institute for Science and Education (ORISE). This longitudinal study examines the long-term impact that ORISE-managed educational programs at NETL have had with regard to ensuring a robust supply of scientists and engineers to meet the future national energy and environmental employment needs of our nation.



ORISE postgraduate participant Chloe Wonnell researched shale gas and coalbed methane development for hydrocarbon production and carbon dioxide storage.

NETL Science Education Programs

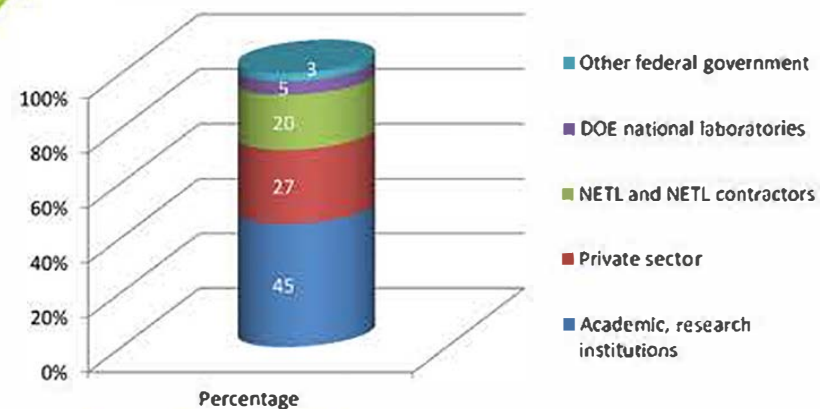
A total of 209 individuals participated in 248 NETL appointments completed between FY 2009 and FY 2013.

- Professional Internship Program (116)
- Postgraduate Research Program (61)
- Faculty Research Program (32)

Five-Year Study Validates NETL's Workforce Development Investment

NETL alumni who completed an appointment between FY 2009 and FY 2013 were solicited to participate in a longitudinal study to evaluate the long-term impact of the program. Participants from the Professional Internship Program, Postgraduate Research Program, and Faculty Research Program responded to a survey asking about key impacts during their participation and multiple aspects of current employment. The longitudinal mixed-methods study included both qualitative and quantitative data, comparing the NETL-ORISE alumni to national comparison data gathered from the National Science Foundation Scientists and Engineers Statistical Data System. The study's findings indicate that NETL's investment in these programs has resulted in a continuous flow of talent that has remained in the energy-related sector. NETL participants were more likely to work in science and engineering occupations—and be involved in basic and applied research—than the national comparison group.

Types of Employers for NETL Alumni



8 out of 10

currently hold positions related to energy research.



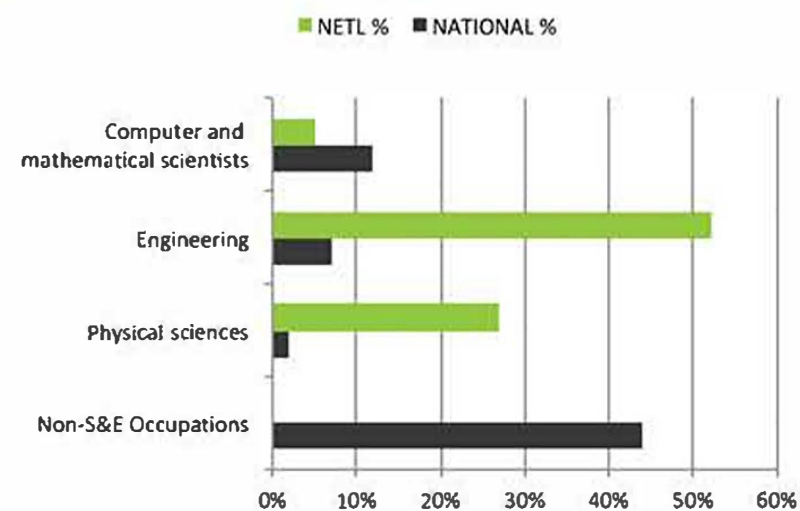
While 28 percent of respondents are employed in the federal government and contractor sectors, those in the private and academic sectors also continue to support the NETL mission with 8 out of 10 respondents indicating that their primary job is related to energy research.

Where Former NETL Participants Are Now Employed



NETL respondents are now employed in 37 U.S. cities, across 21 states and representing 37 congressional districts. Two alumni are placed internationally in the Sultanate of Oman and the Philippines.

NETL Alumni Occupations vs. National Comparison



Compared to the national comparison group, NETL participants are more likely to remain in occupations relevant to NETL's mission. One hundred percent of NETL alumni remained in science and engineering occupations compared to only 56 percent in the national comparison group.

Continuing to Collaborate

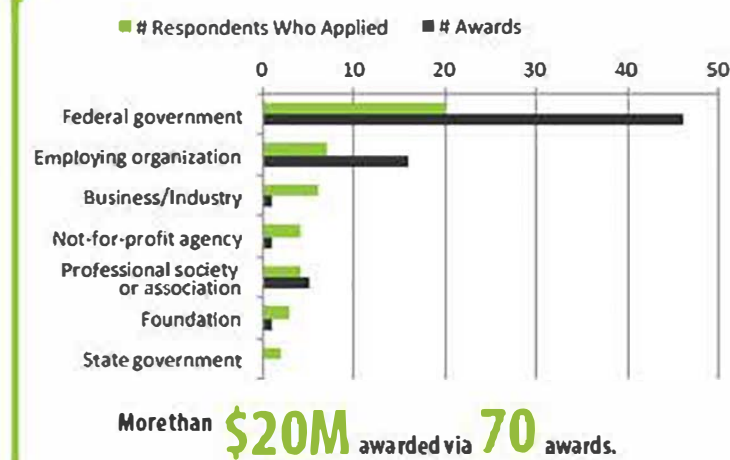
Respondents have been prolific producers of scholarly content, both independently and in collaboration with NETL. The fact that NETL alumni continue to produce scholarly products, publish papers and present at conferences after their NETL appointments, supports the long-term positive impacts of NETL education programs.



1,098 scholarly products produced independently
618 scholarly products produced in conjunction with NETL

NETL Professional Internship Program participant Jon Yang, who is part of a team of researchers led by his mentor Dr. Circe Verba, has submitted research to the *Journal of Natural Gas Science and Engineering* to help scientific and industrial communities better understand geochemical processes that occur during shale gas drilling.

Grants and Contracts Activity



Many survey respondents have been quite successful with more than \$20 million in grants and contracts awarded to NETL participants via 70 separate awards. NETL alumni are also well-recognized with 51 awards and honors reported by respondents, ranging from nationally competitive fellowships to departmental and professional society honors.

Federal Support of NETL Alumni

NETL alumni (**49 percent**) are more likely to be supported in their principal jobs by federal agencies than respondents (17 percent) from the national comparison group—with 39 percent indicating DOE support.

Energy		National Science Foundation		Defense		Other/Don't know which Agency		Health and Human Services (including NIH)		Education	
NETL	National	NETL	National	NETL	National	NETL	National	NETL	National	NETL	National
39%	1%	10%	1%	5%	4%	3%	7%	1%	4%	0%	3%

*Some participants are supported by more than one federal agency.