



# ORAU

## Science Education and Workforce Development

To develop the scientific and technical leadership of tomorrow, we're inspiring students, recent graduates and educators today. With more than 60 years administering internship, scholarship and fellowship programs, and with recently expanded programs for K-12 students and teachers, ORAU is a national leader in implementing experience-based, science education and research internship programs.

## What We Do

- Identification of Workforce Needs
- Program Design and Operation
- Recruitment
- K-12 STEM Program Development
- Assessment and Evaluation

**ORISE**

**OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION**

Managed by ORAU for the U.S. Department of Energy



## Identification of Workforce Needs

Each year ORAU publishes reports analyzing labor trends, assessing classroom technologies and examining educational approaches to help develop the scientific workforce essential for the United States to compete in a global economy. With our analytic approach, our consortium of nearly 100 academic institutions and partnerships with federal agencies, national laboratories and the private sector, ORAU has the perspective to pinpoint workforce skill gaps and administer science education research opportunities to develop these critical capabilities.



## Program Design and Operation

Working with more than a dozen government organizations, ORAU has a proven track record of programs that deliver talented researchers at the undergraduate, graduate, postgraduate and faculty levels. We provide program design, implementation and management, including:

- Maintaining electronic application and reviewing systems
- Making and monitoring research appointments
- Coordinating domestic and foreign travel
- Overseeing payments
- Providing financial reports and analysis
- Administering immigration procedures



## Recruitment

ORAU leads an aggressive recruitment campaign to encourage students, teachers and faculty members to participate in our 150 science education programs. Each year, through targeted promotion and our strong network of academic and research partners, we attract almost 8,000 participants from the United States and abroad and consistently exceed national averages for minority and female participation. We also work with our program sponsors to recruit mentors and prepare them to support participants in their research experiences.

## Highlights

### National Science Foundation

Working with the NSF, ORAU monitors the number of foreign doctorate recipients who remain in the United States. This insight, as well as our analyses of degrees awarded in health physics and nuclear engineering, helps organizational and political leaders assess workforce gaps.

### U.S. Department of Energy

ORAU developed an integrated online system for DOE's Office of Science Graduate Fellowship Program that makes the application and review processes, data management and other aspects of the program easier and more efficient for applicants, reviewers and program managers.

### NASA

To help NASA find qualified Ph.D. researchers in earth science, planetary science, astrophysics and other fields, ORAU increased promotion to high-quality, target audiences, which has delivered 9 percent annual increases in applicants for five consecutive years.

### Oak Ridge National Laboratory

With ORNL facing the retirement of many skilled technicians, ORAU implemented the Laboratory Technology Program to bring undergraduates into an intensive training program at the lab while finishing their degrees. The result: ORNL has hired 52 percent of the participants.

### Siemens Foundation

Working with Siemens, Discovery Education and the College Board, ORAU designed a professional development program that gives middle and high school teachers opportunities to work with top researchers at ORNL and return to their classrooms armed with real-world experience and new insights.



## K-12 STEM Program Development

Research shows that interest in science, technology, engineering and math subjects declines in middle school, so ORAU is working to enhance K-12 STEM education through student and teacher programs. These programs include:

- STEM teacher development training
- Science and math competitions and events
- Research camps for students including robotics, alternative energy and other timely topics
- Hands-on learning in our state-of-the-art classroom at the ORAU Center for Science Education

## Assessment and Evaluation

We conduct ongoing evaluations of our science education programs to learn, benchmark and continuously improve performance. The results are that participants are more likely to:

- Pursue higher level degrees
- Complete graduate degrees in specialty fields of interest to sponsors
- Pursue research careers in areas of interest to sponsors
- Accept employment positions at federal research centers
- Refer others to programs administered by ORAU
- Emphasize active, inquiry-based learning in their teaching



## Science education is more than our mission, it's our passion.

Each year, ORAU donates nearly a quarter of a million dollars to our region to support various science education and other community programs including:

- Our annual Extreme Classroom Makeover competition, which provides a \$25,000 classroom technology "makeover" for a local school
- More than \$24,000 per year in donations to area schools through the ORAU Education Grant program
- More than 188,700 free books mailed to every registered child in Anderson County, Tenn., ages five and under, as a corporate sponsor of Dolly Parton's Imagination Library since 2001
- A \$14,000 annual grant to support the Tennessee Middle School Math Competition

## Working with ORAU

We have a variety of contract vehicles in place to make it easy to work with us, including GSA schedules and the DOE Strategic Partnership Projects. Visit [www.orau.org/contracts](http://www.orau.org/contracts) for details.

## Key Sponsors

- National Aeronautics and Space Administration
- National Science Foundation
- Siemens
- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security

# ORAU

For more information:

865-576-3424

[science.education@orau.org](mailto:science.education@orau.org)

[www.orau.org/science-education](http://www.orau.org/science-education)



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