

ATE PROGRAM

ADVANCED TECHNOLOGICAL EDUCATION PROGRAM

ADDRESSES TECHNICAL
WORKFORCE AND
TECHNICIAN EDUCATION
CHALLENGES

The National Science Foundation's Advanced Technological Education (ATE) program utilizes educators from two-year colleges to lead initiatives that improve the skills of technicians and the educators who teach them. The ATE program invigorates technician education programs with competitive grants to innovative educators who work at or in collaboration with two-year colleges. Public community and technical colleges provide most of the postsecondary education available to technicians in the United States.

Technicians are essential workers. Their skills, learning capacities, and adaptability to changing technologies affect the viability of individual companies and entire industries. In strategic fields, the education of technicians is of vital importance to the nation. As NSF Director Arden L. Bement, Jr., points out,

America's security, prosperity, and well-being depend more and more on the vitality of our science and engineering workforce. With today's intense global competition for ideas and talent, we must sustain our nation's educational momentum.

ATE Centers have broad missions as change agents in their fields. The centers—the flagships of the ATE program—have strong connections with regional and national employers of technicians. The programs they develop with colleagues in secondary schools, universities, and industry serve as models that others can use to respond more effectively to national, regional, and local economic and educational challenges.

ATE Projects focus on specific ways to enhance technician education, to improve faculty professional development and teacher preparation, and to expand students' laboratory experiences. Projects add rigor to science, technology, engineering, and mathematics (STEM) courses. Through collaboration with regional business and industry partners, ATE Projects infuse industry standards and workplace competencies into classroom instruction.

Fields of technology supported by the ATE program include, but are not limited to:

Agriculture Technology
Biotechnology
Chemical Technology
Civil & Construction Technology

Computer & Information Technology
Cybersecurity & Forensics
Electronics
Environmental Technology

Geographic Information Systems
Manufacturing & Engineering Technology
Marine Technology

Multimedia Technology
Nanotechnology
Telecommunications
Transportation Technology



National
Science
Foundation

Highlighting the Advanced Technological Education program sponsored by the National Science Foundation.



MARICOPA
COMMUNITY
COLLEGES

Prepared by the ATE centers with support from the National Science Foundation under grant DUE-0501626 to the Academic Affairs Division of the Maricopa Community Colleges.

ATE PROGRAM

ADVANCED TECHNOLOGICAL EDUCATION PROGRAM

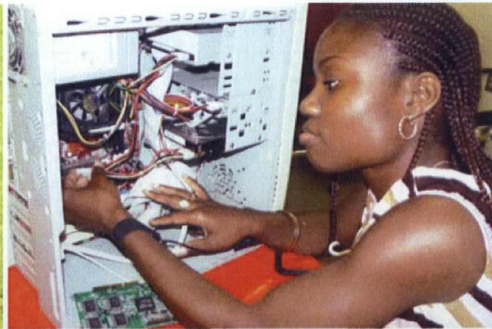
The Advanced Technological Education program

- Delivers well-qualified technicians to the workforce saving employers time and money
- Influences changes in the hiring practices of key industries
- Improves STEM curricula and instruction at community and technical colleges, and secondary schools using current research
- Saves school systems and higher education institutions time and money revising curricula and creating new programs for emerging technologies
- Encourages the participation of women and underrepresented groups in STEM fields
- Reaches out to middle school and high school students to inform them of technical career opportunities
- Increases enrollments in mathematics and science courses that prepare students for careers in advanced technology fields
- Works across disciplines to invigorate teaching and address student recruitment and retention

Overall, the ATE program boosted the academic momentum of technicians and the technological know-how of the nation during a six-year survey period* by

- Developing more than 5,000 different educational materials that aligned with workforce needs and industry standards
- Creating more than 2,000 two-year college programs, 16,800 two-year college courses and 1,500 secondary school courses, 150 baccalaureate programs and 800 courses, and 2,000 articulation agreements
- Offering programs at approximately 4,900 locations that reached 320,000 two-year college students, 48,000 secondary school students, and 6,000 students at baccalaureate institutions
- Providing professional development opportunities to more than 80,000 educators

*Data from reports by The Evaluation Center at Western Michigan University (www.wmich.edu/evalctr/ate)



30% of ATE students are from underrepresented minority groups
31% of ATE students are women
19% of ATE students are incumbent technicians
In fiscal year 2007, 247 active grants share \$49.9 million in funding

www.atecenters.org