

## ATE Evaluation Survey 2003 at a Glance

The 2003 survey is the fourth annual survey of the National Science Foundation (NSF) Advanced Technological Education (ATE) program conducted by The Evaluation Center at Western Michigan University. Presently, ATE has more than 200 active *projects* (i.e., projects, centers, and articulation partnerships). One hundred thirty-nine (139) *projects* were asked to participate in the survey. The criteria for inclusion were all current projects/centers as of October 31, 2002, that had funding start dates prior to March 2002 (current projects/centers with renewal start dates after March 1, 2002, were also included). This ensured that projects/centers had at least 12 months of data to draw upon for answering survey questions. The surveys were completed between February and April 2003. One hundred twenty-eight (128) responses were received for a response rate of 92 percent. Of these, 110 (86 %) were projects; 15 (12 %) were centers; 3 (2 %) were articulation partnerships. This respondent sample of 128 is more than two-thirds larger than the previous year's sample of 76.

The purpose of this annual survey is to describe the *projects'* efforts and impacts and thereby describe the ATE program. The survey had 9 sections: 3 were required and 6 were optional. Table 1 shows response rates for each survey section, which reflect the nature and mix of project activities across the ATE program.

The ATE program expects its *projects* to engage in one or more of the following efforts: (1) improving *project*-based programs<sup>1</sup> of instruction at the secondary, associate, and baccalaureate levels; (2) developing materials mainly for these *project*-based programs; (3) providing professional development to disseminate the model materials and *project*-based programs developed; and (4) collaborating. The following brief summary of survey findings indicates that the *projects*, through these various efforts, have positively impacted the number and quality of technicians in the U.S. and those faculty and staff members who provide technician education—major goals of the ATE program. A detailed report, including fuller data interpretations, will be available during the fall of 2003 at [www.ate.wmich.edu](http://www.ate.wmich.edu).

### **Program Improvement and Materials Development: Impact on Enrollment, Completion, Retention, and Employment Rates**

Eighty-four of the 128 responding *projects* (66%) reported work to improve their technician-education *project*-based programs for at least 1 of 3 levels (secondary, associate, and/or baccalaureate levels). Of these projects, 56 (67%) were engaged in program activities at only one educational level; 22 (26%) were engaged in activities across two levels; only 6 (7%) were engaged in program improvement activities across all three educational levels. For those engaged in activities at one education level, 49 (88%) targeted their efforts at the associate degree level; 5 (9%) targeted efforts at the secondary level; 2 (4%) targeted efforts at the baccalaureate level. This mix of activity reflects the ATE program's emphasis on funding community-college-based *projects*. Table 2 provides details on the level of program improvement activities at each education level.

Of the 84 *projects* engaged in a total of 523 programs at 824 institutions—65 percent of these programs were at the associate level. The *projects* reported that 68,450 students were enrolled in at least 1 course in the *project*-based programs during the last 12 months; 91 percent of these students participated at the associate level. The total number of students reached by these programs more than doubled from the previous year when 32,775 students participated.

The 84 *projects* engaged in program improvement were asked to report detailed information for 1 *project*-based program in 1 location for the past 12 months. Table 3 provides details for these programs.

---

<sup>1</sup>The term *program* can be confusing because two types of programs are addressed in this report. First, this evaluation serves the ATE program, which funds *projects*. Second, funded *projects* conduct programs to achieve their identified goals and objectives. When the program context may be confusing or misunderstood, this report will preface the term program with ATE or *project*-based to clarify the context.

These results indicate a large increase from the previous year in the proportion of females, minorities, and persons seeking ADA accommodations participating in the specified programs. Seventy-eight percent of all responding *projects* (100 of all 128 *projects*) indicated using at least one strategy to recruit/retain these underrepresented groups. The use of written materials (58%), Web sites (50%), and college fairs (45%) were reported as the most popular strategies.

According to the 84 reporting *projects*, in the last 12 months, across all programs, 94 percent of the 10,111 enrolled students were retained by (i.e., did not leave the program), and 33 percent completed their programs. Of those enrolled students completing their programs, 28 percent started or returned to employment as technicians and 23 percent elected to continue their STEM education.

On a related note, 90 percent of the *projects* reported that the ATE program had enhanced classroom and educational experiences. The most common means of enhancing classroom and educational experiences were increased availability of more relevant and up-to-date materials (54%), movement away from traditional lecture delivery of lessons (48%), and increased use of work-based skills in curricula (45%).

Seventy-seven percent (99 of all 128 *projects*) reported developing materials to support the *project*-based program improvement efforts. When asked to provide the number of substantial materials developed, these *projects* indicated 566 materials (courses, modules, other types) were in draft stage, 389 were being field-tested, and 1,093 were completed. Projects also reported that 1,812 materials were in use locally and/or elsewhere outside the *projects*; twelve materials were commercially published.

### **Professional Development Opportunities for ATE Faculty and Staff**

One hundred four of all 128 *projects* (81%) reported providing a variety of professional development opportunities in the past 12 months. In 2002, 1,104 professional development opportunities were supplied through ATE *projects* to 14,709 participants. Table 4 indicates the variety of professional development activities offered.

Most participants also indicated their intention to use the technology, materials, and/or major ideas presented during these activities (63% said they intended to use what they learned at conferences, 68%-workshops, 70%-inservice courses/seminars).

### **Collaboration: Leveraging ATE Resources**

Eighty-seven percent (111 of all 128 *projects*) reported collaborative efforts that served multiple purposes and provided monetary and in-kind support for the programs. Business/industry played a major role according to ATE *projects*. On average, *projects* maintained more than 10 separate collaborative efforts with business/industry, involving 19 individuals from this sector. Similarly, they collaborated with education institutions (average of 12 institutions, 30 individuals involved) and public agencies (average of 3 institutions, 8 individuals involved). All these organizations provided general assistance (e.g., to provide advice, contribute time and effort beyond advice, and/or contribute or share equipment/technology) and resources for materials development, program improvement, and professional development activities.

*Projects* engaged in collaborations indicated receiving a total of nearly \$10.7 million in monetary support and nearly \$10.1 million of in-kind support in the last 12 months from non-NSF sources such as project/center institutions, business/industry, public agencies (local, state, federal), education institutions, and other organizations. These forms of support contributed an additional 23 percent to the resources provided by the ATE program. On average, *projects* received a combined \$232,361 in monetary and in-kind support. One important finding is that, based on reported data, there is a moderate positive correlation ( $r=.45, p=.00$ ) between the amount of ATE funding and the amount of support generated from collaborative relationships. This suggests that larger *projects* are able to leverage resources in relative proportion to the amount of funding provided by ATE.

Finally, 81 of all 128 *projects* (63%) reported collaborating with other ATE *projects*, providing synergy across the ATE program. Activities collaborated on included materials development (29% of reporting projects), professional development (43%), best practices development (22%), sharing of products (44%), and sharing of best practices (41%).