

2008 ATE SURVEY OVERVIEW

This survey serves three primary purposes: (1) to provide information about the ATE program activities and impacts, (2) to provide information that will guide possible studies on specific topics and issues, and (3) to help guide projects in their activities.

Findings from this survey will be used by NSF program staff to prepare their annual reports and make program decisions. ATE projects and centers can use the survey results to learn about the activities reported by other ATE grantees and to serve their own information needs. Additional information about the ATE program evaluation is available at <http://ate.wmich.edu>.

We will neither report individual survey responses nor attribute any data to a specific respondent. Survey findings and aggregated data across projects and centers will be made available through our Web site and in formal reports to NSF.

The deadline for survey completion is March 17, 2008. We recommend that you review the survey in its entirety before responding so that you will have all the necessary information at hand to answer the questions.

Questions regarding this survey should be directed to

Lori Wingate, Project Manager
ATE Program Evaluation
The Evaluation Center, Western Michigan University
269-387-5913
lori.wingate@wmich.edu

Thank you for participating in this survey process.

GENERAL INSTRUCTIONS

1. Sections 1-3 are required for all respondents. These sections address grantee characteristics, organizational practices, and collaborative activities.
2. Sections 4-6 are about materials development, professional development, and program improvement, respectively. Only complete those sections if in 2007 your project or center allocated EITHER 30 percent or more of its direct costs OR at least \$100,000 to the activity in question.
3. Focus your responses on the 2007 calendar year: January 1 – December 31, 2007.

SECTION 1: BACKGROUND INFORMATION (N=162, 100%)

Please provide the following information. If you are responding to the online version of the survey, much of the information will be shown in the response areas. Please check to make sure it is accurate. If not, replace the incorrect information with the correct information.

1. NSF ATE award #: _____
2. Award category: 130 Project (including articulation agreements)
 32 Center
3. Your name: _____
4. Your institution: _____
5. Your role on the ATE grant: _____
6. Your office address: _____
7. Phone: (___ ___ ___) ___ ___ ___ - ___ ___ ___ ___
8. Your e-mail address: _____ @ _____
9. Project/Center Web site, if there is one. http:// _____
10. Total funds awarded in the current grant for this project/center. **Total \$147,790,402**
 Mean: \$912,286; Median: \$713,006; SD: \$885,285; Min: \$75,000; Max: \$4,995,719
11. Beginning date for current award: _____ / _____ / _____ (MM/DD/YYYY)
12. Ending date for current award: _____ / _____ / _____ (MM/DD/YYYY)

13. What is your center/project's current **annual** budget? **Total: \$43,247,476**
Mean: \$282,663; Median: \$240,000; SD: \$240,388; Min: \$5,000; Max: \$1,275,110

14. Based on your response to item 13, estimate the percentage of your annual budget allocated to the following activities. Please reply for the present grant year only. Percentages should total 100 percent.

<u>18%</u>	Materials development for national dissemination
<u>19%</u>	Professional development
<u>23%</u>	Program improvement
<u>3%</u>	Targeted research
<u>6%</u>	Evaluation (internal and external)
<u>2%</u>	Advisory committees
<u>14%</u>	Institutional indirect costs
<u>15%</u>	Other (specify): <i>Examples include administration, articulation agreements, curriculum development, dissemination, equipment, participant support, personnel/salaries, and travel. However, most of these probably should have been included in the predefined categories (e.g., materials development, program improvement).</i>

15. Have you received any other ATE grant awards that are associated with your current award?
34 (21%) Yes
126 (79%) No

If you answered YES, report their award numbers below. If NO, go to the next question.

16. Which one of the following received the NSF grant funds (i.e., is the budgetary agent) for your project/center?

<u>25 (15%)</u>	4-year college/university
<u>122 (75%)</u>	2-year college or 2-year college system
<u>2 (1%)</u>	Association/society
<u>2 (1%)</u>	K-12 school/district
<u>7 (4%)</u>	Nonprofit organization
<u>4 (3%)</u>	Other (describe)

17. What percentage of the grant budget was targeted to serve individuals or groups at each type of institution? Estimate to the nearest 10 percent.

(Mean reported percentages based on N respondents for each line item.)

<u>11%</u>	4-year college/university
<u>61%</u>	2-year college
<u>1%</u>	Association/society
<u>21%</u>	Secondary school
<u>4%</u>	Business/industry
<u>2%</u>	Other

18. Choose one of the following options to describe the major emphasis of your project/center.

<u>6 (4%)</u>	Advanced materials (polymers, nanotechnology, microsystems, composites)
<u>15 (9%)</u>	Bio-related technologies (biotechnology, biomanufacturing, etc.)
<u>5 (3%)</u>	Chemical technology (process technicians, lab tech, pharmaceuticals)
<u>5 (3%)</u>	Electronics and photonics (also instrumentation)
<u>8 (5%)</u>	Energy technology (alternative energy, fuel cells, power plants, hybrid vehicles)
<u>18 (11%)</u>	Engineering technology (also core technology courses)
<u>5 (3%)</u>	Environmental technology (agriculture, sustainable resources, sustainable development)
<u>4 (3%)</u>	Graphics and multimedia (video and gaming)
<u>31 (19%)</u>	Information technology (telecommunications, GIS, information systems)
<u>15 (9%)</u>	Manufacturing (automated manufacturing, rapid prototyping, welding)
<u>1 (1%)</u>	Marine technologies
<u>9 (6%)</u>	Professional development (problem-based case learning, in-service and preservice education)
<u>6 (4%)</u>	Science core (mathematics, physics, biology)
<u>10 (6%)</u>	Student issues (recruitment, retention, articulation)
<u>2 (1%)</u>	Targeted research
<u>6 (4%)</u>	Transportation (automotive, aerospace, logistics)
<u>16 (10%)</u>	Other (e.g., forensics, construction)

19. Listed below are possible dissemination activities that your project/center may have carried out in 2007.

(i) Check (✓) those activities that you have done.

(ii) Write in the number of such activities.

(iii) Estimate the audience size for these activities (cells left blank will be treated as zeros).

Dissemination Activities	(i) We did this		(ii) Number of times	(iii) Estimated Audience Size for the Target Audience(s)			
				Business/ Industry	Secondary Education	Associate Degree Institutions	Baccalaureate Degree Institutions
a. Presentations at conferences	N=140	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	5 3 6 32 718	214 45 764 5,000 16,269	108 40 235 1,950 8,936	164 77 273 2,000 17,696	80 28 215 2,000 7,356
b. Booths at conferences or career days	N=130	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	5 3 7 50 649	355 56 818 4,500 22,735	463 200 1,079 9,608 42,570	255 100 429 2,900 21,896	100 33 277 2,000 5,617
c. Presentations at education institutions	N=122	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	8 5 10 92 860	35 10 75 310 1,199	301 80 635 5,000 25,017	144 40 299 2,050 9,375	45 20 62 232 1,810
d. Special project/center events at this project/center site	N=91	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	5 3 7 50 404	47 24 78 400 2,192	169 40 287 1,400 9,814	97 32 156 750 6,195	28 9 56 300 940
e. Special project/center events at a collaborator site	N=72	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	7 3 9 50 436	91 35 144 540 3,259	160 65 232 1,000 6,733	94 40 172 1,000 4,216	38 10 55 260 1,165
f. Distributed promotional materials (e.g., brochures, posters) related to your project or center	N=131	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	94 10 507 5,000 10,810	360 55 784 4,900 28,060	754 235 1,389 9,000 70,149	503 200 794 5,000 45,805	118 50 194 1,000 7,554
g. Developed Web site for your project/center	N=114	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	68,255 2,921 159,971 9,432,180 4,368,309	<i>(The numbers to the left represent the number of hits on the Web sites.)</i>			
h. Other (describe): <i>(open-ended responses listed on next page)</i>	N=32	<i>Mean:</i> <i>Median:</i> <i>SD:</i> <i>Max.:</i> <i>Total:</i>	220 2 885 4,500 6,158	580 50 1,305 5,000 8,699	480 50 1,163 5,000 8,642	266 110 493 2,000 4,794	217 40 542 2,000 2,819

articles in newsletters

conduct national conference

Developed learning objects on the web

electronic newsletter

Field Trips/HS outreach

High school visits to assist teachers

Industry Tours for Students

Industry/Workforce development conferences

invited conference participation

local professional associations

media (newspaper and radio)

website

Newsletter

Outreach to business

Partner Newsletter

Partners thru their networks & communities of interest

Professional Development

professional organizations

Program is available through Project ____

published paper in journal

radio, newspaper ads

Reach out to middle schools

school and local media

second website www.oceancareers.com

Summer Institute

This includes joint efforts from partner institutions

Trained students to establish sustainability plan

travel to help evaluate and help to set up possible mirror programs at other institutions

Webinars

One Stop Career Centers & CBOs

20. Please rate the priority your project/center gave to each of the following outcomes in 2007.

High priority: A large proportion (e.g., 50% or more) of our project/center's work emphasis was placed here.

Medium priority: Some of the project/center's work emphasis was placed here, but other aspects of the project received equal or greater emphases.

Low priority: Little (e.g. 10%) or no project/center work emphasis was placed here.

Possible Grant Outcomes	Low Priority	Medium Priority	High Priority
a. Student recruitment and retention: Increasing the number or diversity of students in your program	22 (14%)	66 (42%)	70 (44%)
b. Materials development: Improving the quality of or access to instructional materials	25 (16%)	56 (35%)	79 (49%)
c. Faculty development: Upgrading faculty/instructor skills in defined technician areas	27 (17%)	58 (37%)	74 (47%)
d. Program improvement: Increasing the number of programs, courses, or other program options available to students	23 (15%)	64 (40%)	72 (45%)
e. General skill development: Increasing student knowledge and skill in STEM (science, technology, engineering, and mathematics) disciplines	26 (17%)	59 (37%)	73 (46%)

21. Sustaining our project/center or its products, outcomes, and collaborative relations beyond the completion of ATE grant funding (select only one) . . .

- a. 2 (1%) has not been considered
- b. 47 (29%) is expected to happen as a natural project/center outcome
- c. 14 (9%) has been a discussed on occasion (e.g., discussed with an advisory panel)
- d. 66 (41%) is regularly considered in our project planning and work (e.g., evident in project reports)
- e. 33 (20%) is an objective for which we regularly evaluate progress (e.g., evident in evaluation reports)

Articulation Agreements

Articulation agreements are defined as specific agreements that allow students who complete an education program or series of courses to matriculate to a higher level of education at specified institutions. *Matriculation may occur in a sequential or concurrent (seamless) fashion. Sequential matriculation occurs when a student completes the program at the lower level and then begins taking courses at the higher level institution. Concurrent matriculation occurs when the student is simultaneously (dual) enrolled at both the lower and higher education level institutions.* This section addresses both articulation agreements for students preparing for careers as technicians as well as teacher preparation agreements.

22. Is developing articulation agreements part of your project/center activities?

80 (49%) Yes (If YES, go to Question 23.)

82 (51%) No (If NO, go to the end of this section.)

23. Provide the requested number at each education level for each of the following articulation characteristics.

Articulation Characteristic		High School to 2-Year College	2-Year College to 4-Year College
a. Total number of articulation agreements in place (sequential and concurrent)	N: Mean: Median: SD: Max.: Total:	63 15 3 32 140 944	66 8 3 16 93 555
b. Number of articulation agreements that provide for concurrent matriculation—dual enrollment of students at both education levels	N: Mean: Median: SD: Max.: Total:	58 7 2 13 50 406	47 2 1 4 16 116
c. Number of institutions involved in all the agreements	N: Mean: Median: SD: Max.: Total:	66 15 4 28 160 979	61 7 4 12 70 445
d. Number of students that articulated in the past 12 months (enrolled at the higher education level under the terms of an articulation agreement)	N: Mean: Median: SD: Max.: Total:	56 78 13 199 1,200 4,370	50 64 9 191 900 3,176

Answer Question 24 only if your project/center has one or more articulation agreements in place.

24. For each articulation agreement characteristic listed, indicate (check) which of the following characteristics describe at least one of your articulation agreements. Check all that apply for each education level.

Agreement Characteristics	High School to 2-Year College	2-Year College to 4-Year College
a. Students can enroll for dual credit (i.e., credit at both institutions)	49	27
b. Course credits can be applied to the matriculating institution whether or not the student graduates from the “feeder” institution	33	45
c. Dual credit courses receive full college credit (e.g., as part of the major) at the matriculation institution	46	35
d. The number of dual credit courses that can be applied to a degree or program at the matriculating institution is restricted	40	28
e. Some or all of the general education credits for specific courses transfer	26	54
f. Some or all of the technical education credits for specific courses transfer as elective credits	31	47
g. Program completion allows students to matriculate at selected institutions	30	46
h. Agreement provides for students to matriculate at selected institutions, <i>but not necessarily into specific degree programs</i>	23	23
i. Agreement provides for students to matriculate into specific degree programs at selected institutions	38	49
j. Some or all of the technical education credits for specific courses transfer as a part of the matriculation program’s requirements (i.e., student’s major)	33	46
k. Other (describe):	1	1

25. What types of evidence would you consider most useful for making the case for or demonstrating the success of articulation agreements? Please describe.

1 - state-wide engineering articulation taskforce agreement documents. 2 – press release

1. Student enrollments-- how many students enrolled in the next level of the agreement? 2. Awareness - when asked, do students, faculty, staff at each educational institution know about the agreement, what it entails, what students need to do to take advantage of the agreement? 3. Ease of Use - when asked, do students who took advantage of the agreements report that it worked as expected, or were there problems/difficulties/surprises?

A two degree is not required for some of our careers but the students that continue are a more competitive hire and are more likely to get promoted once hired. Articulation encourages students to seek counselling more often and take the right classes as they move through their programs.

Actual numbers of credit transfers to institutions with articulation agreements is the best evidence. Articulation agreements are in place, however it is too early to see results. Classroom retention rates are very high in first and second quarters.

Articulation agreement that recognizes full complement of courses in a specific degree and requires no courses to be repeated.

Associate Degree to Baccalaureate Degree Pathways • All ___ partnership AD graduates can complete the BS in Industrial Technology (2 years) at ___ University • All ___ Partnership AD graduates can complete the BS in Technology Management (2years) at ___ College • All partner institutions offering BS Degrees with NMT concentrations, minors or options, have established degree pathways (institution to institution articulations) for AD NMT graduates • ___ University NMT AD graduates can complete any science BS in two years at _____. These majors include Biology, Biology/Chemistry (Pre-Med), Chemistry, Computer Science, Geology, Health Science, and Physics. Currently, ___ NMT AD students are all BS students doing both degrees concurrently so that they can apply nanotechnology to a research project in their senior year. • ___ University NMT AT and ___ Community College and ___ Community College NMT AAS graduates can complete a BS in Industrial Technology-NMT in two years at _____. The additional course work includes chemistry in nanotechnology, a cooperative education or independent study in NMT, and a variety of technical management offerings. • ___niversity students who have completed an associate degree in Nanotechnology from ___ University, or any other school in the NMT Partnership, may earn a Bachelor of Science degree in Industrial Technology at California University. The BS in Industrial Technology uses the credits from an associate degree as the first two years of the bachelors so that students may continue their education with no loss of credit. There are two options; BS in Industrial Technology and BS in Industrial Technology: Nanofabrication Manufacturing Technology. Students who are working for a bachelor degree in Biology, Chemistry or Physics may also complete their degree at California University through the appropriate science department. Students should consult the program advisement sheet for the degree they wish to pursue and make application through the ___ University Articulation and Transfer Office. Additional Associate Degree to Baccalaureate Degree Pathways 1. ___ Community College - to ___ State - Science 2. ___ Community College - to ___ University - Physics - Chemistry - Biology - Mathematics - Anthropology/Geology/Earth Science 3. ___ Community College - to ___ University - Engineering Management 4. ___ Community College - to ___ University - Industrial Technology 5. ___ Community College - to ___ State - Science

Certainly the number of matriculating students who take advantage of the articulation agreements.

Course objectives. Signed agreements. Discussions with faculty/department chairs at transfer institutions. Preparation, ground work laid in terms of faculty development. Laboratory examples and joint development and collaboration.

___ Public Schools establishes articulation agreement. Teachers refine courses to meet articulation needs.

Dual enrollment students, especially from partner high schools Student enrollments in program following completion of high school Student enrollments even if high school has not been completed

Encourages two year students to continue to four year by providing a seamless transition. (2+2 agreements)

Enrollment and graduation figures

Enrollment into computer majors in a community college Interest in remaining to graduate high school Student motivation in regard to course material in dual credit courses

Evaluating the number of students enrolled.

Evidence of Success: Matriculating articulated graduates into our STEM program or other selected institutions

Evidence that students are obtaining their 4 year degree in a timely manner.

frequency of student transfer from 2 year to 4 year institution program

Impact of articulation agreements on: a) marketing the high school courses, b) marketing the college programs, c) quality of the high school program in meeting post-secondary standards, d) quality of the Associate's program in meeting university standards, e) STEM credit attainment (HS and college).

Increase in enrollment following articulation agreement discussions with prospective students.

increase in number of students using articulation agreements to enroll in 2 yr partner colleges. increase in total number of courses articulated. Impact reports from partner colleges report that both of these have increased from the year they originally become an _____ partner

Long term tracking between institutions giving enrollment and completion rates, whether or not a degree was obtained.

Many students are utilizing the articulation agreement(s). Students are satisfied with the transfer rubric.

We closely examine the patterns of faculty professional development and student success across the institutions.

New student enrollment based on articulation.

Number of credits that transfer for meeting degree requirements, and number of students that graduate within 2 years of transferring from a community college to a BS program.

Number of students going from 2 to 4 year program. Number of students from 2 year program completing 4 year program. Time to completion of 4 year program.

Number of students taking advantage of articulation agreements.

number of students transferring

Number of students transferring and completing the program successfully.

Numbers of students taking advantage of the agreement. These items can consume a large amount of time to develop and never be used by the students or institutions. Few students take advantage of this.

Once the articulation agreement is finalized, the number of students enrolled would definitely demonstrate a successful agreement. The benefits students receive when they participate in the program create an easy pathway from the Associate's degree to the Bachelor's degree makes a case for the need for such agreements.

Our program has become part of Project ____ through the League of Innovation. Currently 22 institutions are partners through Project _____. We also formed an articulation agreement with one four year institution where our AAS degreed program transfers 100%.

Poster and oral presentations at NSF/ATE and AACC conferences.

Seamless transition from secondary to post secondary education.

Student Awareness Students working towards transfer (taking units) Students transferring

Student persistence and degree attainment at receiving institution

student pursues course of study based upon their experiences

student retention, program completion, graduation

Student success at the four year institution.

Student transcripts, community college completion rate, course planning documents, end-of-year reports to Management Board, graduation rate, guidance documents

Student usage of articulation agreements; the number of courses/credits accepted that meet degree requirements; and, the impact on enrollments

Students following an articulation agreement take fewer classes that do not apply to their degree. They can also rest assured that their courses will transfer. They are protected by the agreement.

Students join the program because they are familiar with it from High School exposure. They join because they KNOW they can enter the university with full credit for participation.

Students transfer. Because of the small number of students thus far, we know what they are doing at the university. Our university mentors meet with them regularly. Statewide Articulation web based system. assist.org

Success of articulation agreements hinges on two things: 1) students are able to seamlessly transfer credits from one institution to the other and are given credit for equivalent courses; and 2) student enrollment increases in higher degree programs.

Success of these articulation agreements is demonstrated by the number of students enrolled at our partner institutions through these programs.

Success rate of those students transferring into a four-year degree program.

The articulation agreements help students and parents to understand the importance of completing the Skill Center program and the importance of the training received at the Skill Center.

The Biological Science AS and the Engineering AS Programs at the community college, developed as part of this ATE grant encompass course articulation agreements for all courses both general education and technical education in these programs. These agreements were completed with three four-year institutions.

The development of the Associate of Science in Teaching Degree has assured transfer from any two-year school in the grant to any four-year state university in the system. In addition, at least 10 private four-year schools have now agreed to accept community college students who graduate with the AST degree, fully accepting their community college credits.

The initial project focus has been the identification and validation of competency skills standards in transportation, distribution, and logistics (TDL) and curriculum development based on those standards. Because TDL is so broad, we had to narrow our initial effort to one of the federally recognized TDL career clusters, with plans to expand to the others subsequent to this project. The first four courses are being developed and will be launched in 2008-09 to high school students for concurrent credit as well as to college credit students. Students who successfully complete these courses will earn a certificate of proficiency in warehouse operations, and the courses also articulate with the Technical Certificate and Associate of Applied Science degree. We are also collaborating with ____ State University in the development of the baccalaureate segment of the career pathway. This will be delivered through the new University Center on the ____ community college campus in collaboration with the ____ Consortium (5 community colleges), which provides education and training services to 350,000 people in a 12-county area, including nearly 40,000 students in the public schools and more than 12,000 students enrolled in the community colleges. Additionally, industry advisors have offered strong commitments to participate in program content and delivery and to provide preferential hiring and initial compensation practices when filling open positions.

The interest that High School students have shown in enrolling in the courses. And, the number of these students that have matriculated to the Associate Degree programs.

The ____ upper division cohort was lacking applicants this spring for next fall. ____ contacted two-year students and filled up the cohort.

The number of dual credits recognized and the number of students that matriculate between secondary and two-year institutions.

The number of students enrolling at ____ (2 year college) and ____ State College (4 year college) with ____ courses listed on their transcripts.

The number of students that participate and actually move on to two or four year institutions.

The number of students who matriculate to partnering institution will provide the best evidence of success.

The number of students who receive an Associate of Arts in Teaching degrees and so gain admittance into any publicly-funded 4-year institution in ____ with junior standing.

The number of students who transfer and then graduate.

The project has developed a highly successful summer credit STEM program for high school students. The course meets college science degree requirement. Articulation between an advanced technical program and a 4-year engineering program is complex and difficult. Laney is negotiating several program-to-program articulation agreements with 4-year institutions and is also developing a joint degree program with another 4-year degree institution.

The records of college registrar is the most compelling evidence.

The strongest evidence is the fact that we have had students articulate into the post secondary programs, both into the 2 year programs and into the university level program

The total number of students that choose to begin a program at our two year institution after graduating from a high school program or choose to transfer from our 2-year college to 4-year college(s) in which those articulation agreements are in place.

This is an unique articulation agreement in that the senior institution does not offer the first two years of the program. Students are required to take the first two years of the program at a two-year technical college. They are then allowed to enter the bachelor's degree program. This a new program at the senior institution and the fact that we have had more than 30 students enter the program in the first two years demonstrates the success of the articulation agreement. We will also have our first graduates from the senior institution this fall.

We annually collect data from universities with whom we have established articulation agreements that allow us to evaluate increases in student transfer and use of articulation agreements we have established. In terms of secondary to community college articulation agreements, we are able to collect student enrollment in dual-enrollment classes statewide and compare targeted classes directly impacted by this ATE project both to high schools not impacted by this ATE project and to previous enrollment patterns at targeted high schools. We are also able to collect data on student enrollment in technical associate degree programs statewide and to analyze such data against historical enrollment patterns.

We are finalizing an articulation agreement between high schools in our district and _____ College. This allows high school students to take _____'s first GIS class (GISG 110) in high school for credit and articulation with _____'s program. We are surveying students at the beginning of each semester to determine why/how they entered our program and hope to soon see evidence of students coming to us from these high school programs.

We are still in the process of completing our articulation agreements with the selected matriculating institutions so I cannot speak from experience. However, two factors come to mind, the ease of transferring credits and not repeating similar course at the matriculating institution. and the other factor being the number of students articulating to a four year institution.

We have a close working relationship with our partner 4-year institutions. The positive feedback, academic achievements and number of students enrolled all demonstrate why our articulation agreements are such a success. Below is data and quotes received from our 4-year partners: - Dean School of Engineering reported that 66 students currently enrolled in the School of Engineering had transferred from the community college's College of Technology (COT). He stated, "I am totally pleased with the academic performance of these men and women." This resulted in his establishing two annual dean scholarships of \$2500 each, awarded to COT graduates. - Dean of the School of Technology reported that 210 community college students were currently enrolled in their School of Technology. He stated, "The COT and its RCNGM were central in the approval process for our new Baccalaureate Degree in Mechanical Engineering being offered in the fall of 2006. We highly value community college students." - Assistant Dean at another partner 4-year university reported that for the 99 COT community college students who graduated with a Bachelors of Science degree in one of their 11 engineering majors, the average GPA was 2.93, demonstrating the success of the community college pathway.

We have developed articulations with high schools in all of our five ____ college service areas to allow students from the career tech programs to receive credit in our technical programs at the community colleges, including our automotive manufacturing technology. Additionally, we have agreements in process with three universities that will allow our graduates to obtain credit toward their Bachelor's degree in related manufacturing and/or management programs. Examples include: at ____, students may transfer nine hours of direct credit for one-to-one transfer; then, they may transfer up to thirty hours of "block technical credit" for courses with no corollary at the university, but technical in content (example, conduit-bending, industrial wiring, etc.).

Whether or not the course is General Education transfer.

SECTION 2: ORGANIZATIONAL PRACTICES (N=160, 99%)

Workforce Needs Assessment

1. Did your project/center gather workforce needs assessment data in 2007?

82 (51%) Yes (If YES, go to Question 2.)

77 (49%) No (If NO, go to Question 3 regarding Advisory Committees.)

2. Check the types of workforce needs assessments your project carried out and specify if the source was local, regional, or national for each one that you marked. Please note that you may check (✓) more than once source.

Types of Workforce Needs Assessment Information and Processes	Check (✓) those that apply	Primary Source(s) for Those You Marked		
		Local	Regional	National
a. Review of reports/studies written by others (state, agencies, specific industry groups, etc.)	71 (44%)	59 (36%)	61 (38%)	54 (33%)
b. Obtained work performance data from business/industry or other constituent group (items c-k below are intended to more fully describe actions you took to gather or use this data)	63 (39%)	48 (30%)	43 (27%)	34 (21%)
Complete <u>c-k</u> only if you checked <u>b</u> above.				
c. Conducted your own survey (via telephone/mail/Internet)	30 (19%)	20 (12%)	12 (7%)	8 (5%)
d. Hired an outside individual or organization to conduct a survey (via telephone/mail/Internet) specifically for your project/center	10 (6%)	6 (4%)	2 (1%)	5 (5%)
e. Analyzed <u>existing</u> data regarding workforce needs (i.e., data gathered by business or industry for their own purposes but made available to you for your purposes)	52 (32%)	30 (19%)	32 (20%)	21 (13%)
f. Conducted focus group(s) with industry/business representatives	41 (25%)	27 (17%)	19 (12%)	13 (8%)
g. Conducted formal interviews with industry/business representatives	26 (16%)	19 (12%)	11 (7%)	7 (4%)
h. Obtained feedback from an advisory committee	55 (34%)	39 (24%)	25 (15%)	15 (9%)
i. Gathered anecdotal information through conversations with business/industry representatives	55 (34%)	39 (24%)	29 (18%)	25 (15%)
j. Obtained feedback from partners and alliances	54 (33%)	35 (22%)	27 (17%)	20 (12%)
k. Other (describe): <i>(Open-ended responses listed on next page)</i>	6 (4%)	2 (1%)	2 (1%)	1 (1%)
Conducted and published in December 2007 a national survey with the Manufacturing				

Institute entitled Report on Nanotechnology and Workforce Needs.

____'s partner Center, the ____ Center published a statewide manufacturing needs assessment report

Held a Harmonization of Biopharmaceutical Manufacturing Skill Standards Meeting

Participated in surveys conducted by CA statewide Community College Initiative

Professional Organization

Advisory Committees

3. For the following questions about advisory committee activities, please check (✓) the appropriate boxes if the answer is YES.

	Type of Committee		
	National Committee	Regional Committee	Local Committee
a. Did you use this type of committee in 2007?	60 (38%)	42 (26%)	91 (57%)
b. Is ATE grant work the primary focus of the committee?	55 (45%)	27 (17%)	46 (28%)
Answer parts <u>c-f</u> for only those columns where you answered yes to both questions <u>a</u> and <u>b</u> above.			
c. How many times per year do they meet (face-to-face or via video or teleconference)?	N: 53 Mean: 2 Median: 1 SD: 1 Max.: 8	27 3 2 2 6	43 3 2 2 12
d. Is this committee funded by your project/center ATE grant?	49 (30%)	17 (11%)	19 (12%)
e. Did the committee provide a written report?	43 (27%)	12 (7%)	5 (3%)
f. Did you respond in writing to this written report? (Answer only if the answer to <u>e</u> was yes.)	33 (20%)	6 (4%)	3 (2%)

Evaluation

4. Select the type of evaluator(s) used by your project/center (select only one).
- | | | |
|----|------------------|---|
| a. | <u>8 (5%)</u> | We do not have an evaluator, either internal or external (If you check this response, skip to question 11.) |
| b. | <u>127 (79%)</u> | Type 1 external evaluator only (i.e., hired specifically to evaluate this grant— External to project and institution) |
| c. | <u>4 (3%)</u> | Type 2 external evaluator only (i.e., hired specifically to evaluate this grant— External to project but internal to institution) |
| d. | <u>6 (4%)</u> | Internal evaluator only (i.e., is a member of your staff) |
| e. | <u>15 (9%)</u> | We have both an external evaluator and an internal evaluator |

5. Do you have a current, detailed evaluation plan for your project/center?

<u>142 (88%)</u>	Yes
<u>10 (6%)</u>	No

6. Did you receive a written report from your evaluator in 2007?

<u>109 (72%)</u>	Yes
<u>42 (28%)</u>	No

7. Did you receive an oral report from your evaluator in 2007?

<u>117 (78%)</u>	Yes
<u>33 (22%)</u>	No

8. If you answered YES to Question 6 or 7, how has your project/center used the information provided in these written or oral reports? Please describe.

(1) to support our decision to change evaluators in mid-year, (2) to incorporate suggestions of new evaluator and some from previous evaluator into our work, and (3) to get feedback on ideas

A written report was received on March 07, from the external evaluator. After reading the recommendations, the program has focused on expanding to other campuses (within and outside the college) revising, improving the curriculum and training new teachers.

based on workshop and internship evaluation data - content was altered to better suit participant needs based on software evaluation data - edits were made to software to improve interface design and navigation through program

Because we are using a modified Kirkpartick model for evaluating change impact, we use this information extensively to guide our efforts.

consultation on statistical analysis of data

curriculum modified

Designing assessment measures.

Developed a project logic model to assist with strategic planning.

Development of curriculum modules has been influenced by external evaluator's comments and recommendations.

Discussed report during a meeting.

documents our successes

_____ is an external evaluation firm under contract to the project to provide counsel on planning internal evaluation and to conduct an annual assessment of project activities. Combining a balanced mix of quantitative indicators and rich qualitative data this assessment reports project activities and accomplishments based on interviews with the project team and detailed review of internal evaluation findings and supporting data including pre and post surveys, numbers served and hours dedicated to project activities along with evidence of outreach, dissemination and deliverables produced.

Evaluation data is routinely presented to Site Coordinators at quarterly meetings and guides the ongoing work of the project. The evaluation team is integrally involved with the project.

Evaluator compares results with goals and objectives of proposal and recommends adjustments where necessary (base on case needs). Strategy is generated for approval by evaluator. After action item is completed, evaluator evaluates and approves it. Evaluator discusses results with grant management group. The grant management group regards recommendations by evaluator very seriously.

Evaluator information is used to prioritize activities and tasks and assign individual responsibilities.

Evaluator information was used to make decisions concerning grant activities. Specific examples; operation of faculty development workshops was changed for 2008, content of annual conference was based on evaluation, and creation of resource teams was based on evaluation focus groups.

Evaluator input was valuable in developing survey, analyzing results and determining instructional design.

Feedback and recommendations serve as input for future planning

Following the advice of the evaluator, the project staff developed a formal food science curriculum guide. A commercial publisher is reviewing the manuscript for the high school edition at the time of this writing. The middle school edition is nearing completion for review.

Have increased our outreach to urban school systems.

Improved/Revised plan of work

Improvements planned for teacher training Improvements planned for guidance counselor training

Improving instructional materials based on comments/suggestions from the evaluator.

Information provided by the external evaluator was utilized to inform the PI/co/PI's and grant management team of strengths and weaknesses associated with managing and executing the grant goals; which included recommendations for improvement and areas of excellence and best practices.

Information provided in these reports provides detailed guidance and fine-tunes our focus on the goals of this grant

It better informs us on how to recruit students to the program and sheds light on things we could do to improve the program.

made improvements to the programs based on evaluators recs.

Mainly to guide efforts for the final evaluation and to track progress in meeting program goals and objectives.

Many worthwhile suggestions on how we can improve our efforts and what we still need to strengthen. Most if not all have been implemented in some form.

Met in June 2007 with all Project staff to discuss findings of the evaluator. Created strategic plan for 2007-08 based on discussions and teacher focus groups.

Modified agenda for mentoring dissemination conference Improved explicit communications to teachers concerning workplace skills.

New approaches in targeting school teachers were implemented based on feedback

Our Center has used the information in the written reports to improve the quality of our workshops, to address the timing of the workshops, and to keep in correspondence with participants.

Our evaluator is available to discuss and design strategies to achieve our project goals. She is knowledgeable about related educational resources in the district and she provides input and ideas for approaches to addressing our project requirements.

Our evaluator just came onto the project in late fall of 2007. So we are just starting to get data. We are using the information in a formative way and have just finalized the evaluation plan.

Our external evaluator will make a site visit on April 22 of this year - we will use the evaluation to validate and/or correct program direction.

Project improvement and strengthen summer institute through participant evaluation feedback. Site visits were conducted at partner institutions, which included discussions with secondary, college and industry members. Results were shared with project advisory committee and used to strengthen project activities identified for project year 2.

project improvement

Project planning and next steps were aided through using evaluator's material. In-class initial evaluations used evaluator materials.

Provided feedback on distance education experience to project partner VCSU; Adjusted data collection; Adjusted student evaluation tools; Adjusted classroom delivery tools.

Quantify project and obtain continued support from manufacturing partners.

Report has caused us to modify and improve some aspects of materials development.

Restructure program in response student performance to allow for greater student involvement earlier and to allow for clearer pathways to earning college credit. restructured agreements with industry partners to better protect interests of students, industry, and our college

Revised membership to include more significant levels of industry support and deleted some partners who had been inactive Placed more emphasis on recruiting automotive supplier companies More carefully defined the desired outcomes

revised our data collection to include student learning outcomes - created instrument for collecting and putting outcomes into database for evaluator

Since the project just started in Sept 07, there has not been enough time for an evaluators report. Planning has been conducted.

Student feedback has been used to add instructional components to our model and to consider additional flexible course offerings.

Student Satisfaction Course Design Assessment

Submitted external evaluator's report in annual report in May 2007.

The Center has conducted several formal assessments of effectiveness. Oversight is provided by the Center's industry advisory board and the NSF National Visiting Committee (NVC). Three regional industry advisory board meetings were held in 2007. Course content changes have been made as a result of these meetings. The most recent NVC meeting report applauded the Center for the continuous improvement mentality that exists within this "pioneering effort in nanotechnology" and for its efforts made to share the program on a national scale.

The Center has redesigned the way we collect data; hired an additional person to gather and collate information for us; restructured our organization to simplify the overall management structure; focused more direct attention on the need to gather data on all of our center activities, especially where expenditures are significant (answering more "so what" questions regarding workshops and events we have held to make use of evaluation results..

The data was used to improve the instructional materials, training materials, and recruitment materials.

The evaluation reports (written and oral) have been used to underscore the project parts that needs to be paid greater attention to and to identify potential additional areas to be developed.

The evaluation reports allowed us to identify areas of improvements from year 1 to year 2. These changes created a more hands on experience vs lecture for the teacher workshops, expanded the topics covered to other areas of biotechnology, and increased the number of seminars and workshops/tours of biotechnology industries.

The evaluation team of assisted us in indicating the type of data we needed to continue to obtain from the various components of the project, as well as giving us insight into what the project participants would like to see covered in subsequent professional development activities.

The evaluator collected formative information from participants following each training session. We have used reports from the evaluator regarding feedback from participants to offer additional training as needed to support individuals and groups and to improve subsequent training sessions. The evaluator also collected end-of-year summative information. The information will also be analyzed to better support goals and objectives of the project.

The evaluator helps make decisions about things to change for the next cohort of students.

The evaluator reports shaped the implementation of students and employers surveys.

The external evaluator listed 5 aspects of the project that "could be tweaked, and those changes might produce incremental or minor improvements". Each of these five suggestions have been addressed and hopefully "tweaked" so that the participants are getting even more from the workshops and the follow-up activities.

The information given by the evaluator is being incorporated in the current semester. One item related to recruitment of minorities and women. Because of low enrollment in college of engineering at ____ University, we are aggressively embarked on recruitment efforts and are admitting anyone with more than 2.25 GPA. But the issue is of finding students willing to join the program. All our trips to community colleges formulating articulation agreements pays off in small numbers. We have been operating under capacity for long and would like to be in a position of over capacity and that is not in sight at this time.

The information obtained in the initial evaluation of the course work was used to develop the new course work created by the grant participants.

The information was used to support the annual grant report.

The positive feedback from these reports is always reassuring; however, it is the suggestions for improvement and or identification of weaknesses or strengths which provide the most benefit and opportunity for improvement.

The project has utilized this information to assist in future strategic planning for the _____. It has been shared with all partners and the Board of Directors. The information is valuable to the _____, as it positively impacts programs and student success for the future.

The report has helped us identify weaknesses and strengths. It has helped us fine tune our data collection instruments.

The report was used to improve our professional development activities (workshops) and to request a no-cost extension to complete materials development.

The report was used to monitor the performance of the project and to make sure project goals and objectives are met.

The reports from the external evaluator have helped us to ensure that we are meeting the goals for our project.

The reports have been used to improve the annual ATE PI Conference; structure our program; and conduct greater outreach for dissemination of materials.

The written report helps us prepare for our annual report but it really is for people external to our center. The oral discussions with the evaluator are formative in nature and have a tremendous impact on how we proceed in certain areas.

They were summative evaluations. We carefully read and discussed them, and considered their impacts on our continuing efforts.

This feedback is used for program improvement. Our external evaluator is an expert in the field of pulp and paper. His expertise is invaluable to the success of this project. We highly respect his recommendations and opinions.

This information was used to focus on the replication of key components of our project at partner institutions and to improve communication between the home institution and partner colleges. The evaluator is also working with all of us on measurable outcomes from the replication efforts.

To check on our progress, discuss problems and successes.

To guide decision making for project improvement. To advocate for ATE project importance within larger institutional organization.

To guide project direction; improve communication and coordination among project partners; identify gaps in project plan and partner expectations.

To improve program materials and courses for our students and to increase and focus outreach activities.

To improve project execution

To make improvements in the program

To modify procedures

To re-adjust our activities and include information in annual reports and grant applications.

Updated timeline, prioritized goals and identified areas of focus.

used it as the basis for creating a "dashboard" for the center

Used the evaluator's report to help guide the scope of work and year two plan.

Used the information for Continuous quality improvement in project work and to demonstrate impact of the project.

Used to improve our evaluation plan and process. Used to report outcomes of project in presentations.

Used to modify our activities for the following year.

We are collecting additional information and making adjustments to the types of questions included in our internal evaluations. We collaborate with an NSF-ATE Center.

We are currently implementing all suggestions made to improve -the project web site -data collection for statistical evaluations -contact with university mentors -changing the timing of advertising available interns to the biotech industry

We are responding to concerns and providing more information about project goals and outcomes as requested, develop plans for working projects, the need for changes in evaluation of activities.

We completely revised our outreach materials and recruitment process based on survey findings developed and summary findings of our evaluator

We continually adjust our workshops to fit the needs of the participants. For example, the participants want more hands-on kits which were not part of the original grant. We have developed a prototypical hands on kit and have 4 more planned. Note - we are extending our grant one full year and the kits will be a significant part of our work.

We continued the project because the evaluator told us we were progressing as planned.

We discuss at our monthly Center faculty meeting and decide how to change processes or targets and respond back to the NVC and/or evaluator.

We have adjusted the scope of the project to create more realistic program development goals based on the reduced budgeting. Focus is sharper on the major opportunities from a workforce development perspective.

We have changed several activities and incorporated most of the evaluator's suggestions accordingly to the findings of the annual evaluation.

We have had a great evaluator who has helped us focus more on evaluation of the project. When we started we thought we were evaluating all of the elements but our evaluator found more and better ways for us to evaluate. He has been an excellent contributor to our project.

We have implemented the suggestions/recommendations made by the external evaluation team.

We have incorporated both the oral and written comments/advice from our evaluator into our project (especially concerning the creation of website information as well as dissemination materials).

We have used evaluator data to help in our review of programs and in making modifications to program direction. This year, specifically, we designed and implemented a student survey as a result of a recommendation and information provided by our evaluator. The evaluator also assists us with nationwide and regional trend data.

We have used our written evaluation reports to identify key areas of the project to focus upon, to focus data collection efforts, to develop survey data, to identify pre- and post-instruction data to gather, and to provide key feedback on project performance and strategic direction.

We have used the written reports for dissemination at national and state conferences as well as to participating and potential high schools. Recommendations made in oral and written reports are used to make program improvements and additions.

We looked at the strengths and weaknesses of the project outlined in the report and conducted meetings to correct any weaknesses detailed in the report.

We meet monthly with our evaluators to review results, plan upcoming events, and make adjustments to plans/activities based on evaluation info.

We plan to deliver many of the same services to students in 2008 that we did in 2007. The evaluators reports have been very helpful in improving the design of these services.

We received 3 written evaluations our first year of work. The PI synthesized the reports and presented the result at the annual retreat with 2 of 3 evaluators present. The participants and evaluators discussed strengths and weakness to inform activity planning for the coming year.

We use both online survey and written survey responses from students and teachers on an ongoing basis to evaluate the effectiveness of the program and to make program improvements. Our external evaluator shares individual classroom and combined classroom data with teachers twice a year at mid-year reconnect workshops and at the end of each program year. Data are shared with our Advisory Committee for review and comments. Data are used for formal public presentations (eg conferences) and for NSF reporting requirements. Data will be used for journal publications.

We use our evaluators feedback to iteratively improve both professional development and instructional practices.

We use the annual report as a method of feedback on our progress. The evaluator provides an outside set of eyes to evaluate our progress.

We use the evaluation data to: monitor progress on grant objectives; modify workshop/course content and delivery; prepare annual NSF reports; guide and inform our strategic planning; prepare new grant proposals; and, make adjustments to the evaluation plan itself.

We use the information for directing and re-directing our activities for the coming year.

We use the recommendations for strategic planning.

We use this information when writing our annual status report to NSF and to measure the degree to which we are meeting our project goals and objectives.

We used feedback from the evaluator to enhance our promotion and dissemination plan, to work with our project partner on visibility and to consider and implement a facilitator's guide.

We used information provided by the external evaluator to guide us in starting up project grant activities.

We used the evaluation results to help with planning of workshops and grant proposals.

We used the evaluation to change our focus, as necessary. We used it to help us finish up our project and maximize achievement of the desired goals (specifically dissemination this year).

We used the information to reevaluate our goals. The original grant had 7 goals which we reduced to four due to numerous overlaps of two of the goals. We also use the evaluation report to guide us as we look at where we are going with the project and to determine if we are on track -- and if not, why not ? and also to determine if we should re-focus or if necessary address whether the objective is feasible for the project

We used the report to strengthen areas of the project.

We used these reports in the process of changing the courses that are under development. The evaluation reports provided additional insight that helped us make decisions on course activities and content changes.

Written report was a review of not only the last year of the project which officially ended May 31, 2007. We filed a no cost extension through May 31, 2008. So evaluators report is used to continue improvements in the program beyond NSF funding period. This is also why we did not have a National Visiting Committee meeting this year -- our NVE occurred in the fall and grant official end was June 2007.

Yes, we have aligned our data collection to align with our target objectives and to feed into our continuous process improvement system.

Yes; however, since the grant ended at the end of this grant year, the information was used primarily for guidance on sustainability issues

Answer Questions 9 and 10 only if you indicated use of an external evaluator.

9. In 2007, how frequently did your external evaluator interact with and exchange project/center-related information with your staff (e.g., e-mail, teleconferences, face-to-face meetings)? (select only one)

- a. 20 (14%) Rarely (e.g., one to three times)
- b. 32 (22%) Infrequently (e.g., not every month but at least quarterly)
- c. 60 (41%) Occasionally (e.g., more often than quarterly and as much as monthly)
- d. 33 (23%) Often (e.g., more often than monthly and as much as biweekly)
- e. 0 (0%) Continually (e.g., very nearly weekly, weekly, or more often)

10. How useful is the interaction you have with your project/center's external evaluator?

Not Useful	Minimally Useful	Somewhat Useful	Useful	Essential to Our Work
2 (1%)	5 (4%)	19 (13%)	57 (40%)	60 (42%)

Professional Development Opportunities for Project/Center Staff

The questions in this section pertain only to professional development opportunities that your project or center staff **attended**. Please **DO NOT** include professional development activities provided by your project/center; these are addressed in Section 5 of this survey.

11. Did your project/center use grant funds to provide support for professional development involvement by project/center faculty in 2007?

- 131 (82%) Yes (If YES go to Question 12)
- 27 (17%) No (If NO, skip to the end of this section)

12. Which of the following types of professional development activities describe the ways in which project/center faculty members were engaged? (Check all that apply)

Meetings and conferences pertinent to ATE

- a. 126 (78%) Participation in the annual ATE PI meeting
- b. 74 (46%) Attended without presenting at a regional or national conference
- c. 101 (62%) Attended and presented at a regional or national conference
- d. 22 (14%) Other (describe):
- annual retreat of PI/Co-PIs/evaluator*
 - Attended two industry professional conferences.*
 - displays/booth*
 - Local ___ Meetings*
 - local opportunitites*
 - local workshops*
 - Multiple presentations to various conferences and professional meetings within the state of Pennsylvania , across the nation, and internationally.*
 - NSF Proposal Review Committees, AACC Mentor Links (mentor)*
 - Participated in Exhibits*
 - Participation and presentations at AACC WDI Conference and 2008 World Congress International Community College Conference hosted by AACC in NYC, NY*
 - Presented information about the project at the 5 3-day workshops that we conducted during 2007*
 - Provided pre-conference two day workshops*
 - Recruited presenters for the project's future workshops at international animation events*
 - regional symposium by new center*
 - Shared at the booths*
 - Specific Training*
 - Staffed table and disseminated work in progress.*
 - Taught Faculty Courses at Other ATE Center Events*
 - Technology collaborations that leverage expertise and relationships between cross-linked ATE funded projects/centers and other relevant stakeholders.*
 - travel to present to small groups specifically interested in our program*
 - we conduct monthly faculty meetings among the grant faculty*

Directed learning experiences **pertinent to ATE**

- | | | |
|----|-----------------|--|
| a. | <u>99 (61%)</u> | Participation in a short-term workshop or training program (one week or less) |
| b. | <u>36 (22%)</u> | Enrollment in a course or multiweek training program |
| c. | <u>12 (7%)</u> | Participation in a long-term (e.g., semester) internship, externship, work release program, or study (e.g., on location at a business or industry) |
| d. | <u>10 (6%)</u> | Enrollment in a degree program |
| e. | <u>10 (6%)</u> | Other (describe): |

Enrollment in certificate program

Job Shadowing (short term)

Joint student mentoring experiences with industry partners

_____ Biotechnology meetings and conference

Observation of ATE Centers already implementing Projects Based Learning activities

online, on-demand training

Participation in conferences and meetings

Participation of secondary and postsecondary faculty and staff in academies with a sister ATE project

Supported partner efforts to develop local and regional learning opportunities

Visit to FAS Biopharmaceutical Manufacturing Training Center in Cork, Ireland

we conduct monthly faculty meetings among the grant faculty

SECTION 3: COLLABORATION (*N=158, 98%*)

Collaboration is defined as a relationship with another institution, business, or group that provides money and/or other support to your project or center. Collaborators are not funded by the grant; collaborators may include local businesses, other education institutions, public agencies, industry groups, other ATE projects and centers, or groups within your host institution but outside your project/center.

- For each type of collaborator listed below, report the number of different groups or organizations you collaborate with and the number from which your project/center received substantial monetary support (e.g., cash contributions, other grants) or in-kind support (e.g., personnel time, equipment, space, facilities) in 2007.

Type of Collaborator		# of Collaborator Groups	# Providing Support	
			Monetary	In-Kind
a. Business/industry	N:	122	38	102
	Mean:	16	5	13
	Median:	6	2	5
	SD:	25	9	23
	Max.:	150	50	140
	Total:	1,892	200	1,321
b. Within your host institution (e.g., department)	N:	120	24	88
	Mean:	4	2	4
	Median:	3	1	3
	SD:	5	3	3
	Max.:	29	15	20
	Total:	516	51	317
c. Other education institutions	N:	126	16	87
	Mean:	11	2	8
	Median:	4	1	4
	SD:	26	2	11
	Max.:	200	9	75
	Total:	1,411	36	683
d. Public agencies	N:	87	21	51
	Mean:	4	2	4
	Median:	2	1	2
	SD:	6	1	6
	Max.:	36	5	36
	Total:	373	33	220
e. Other ATE awards	N:	70	10	50
	Mean:	3	1	3
	Median:	2	1	2
	SD:	3	1	4
	Max.:	20	2	20
	Total:	244	14	167
f. Other types	N:	21	7	16
	Mean:	5	1	2
	Median:	2	1	2
	SD:	7	.5	2
	Max.:	30	2	8
	Total:	93	9	36

2. Report the total dollar value of monetary and in-kind support received by your project/center in 2007 from all sources other than your ATE award (round to the nearest thousand dollars).

Monetary support **Total: \$7,057,864; Mean: \$103,792; Median: \$35,000;**
N=68 **SD: \$154,760; Min: \$50; Max: \$678,000**

In-kind support Total: \$9,480,285; Mean: \$80,341; Median: \$20,000;
N=118 **SD: \$222,504; Min: \$1,000; Max: \$2,000,000**

3. For each type of collaborator listed below, check (✓) **up to two** options that best describe the primary benefits to your project/center in 2007. Each column should have two checked benefits at most.

Collaboration Benefit to Your Project/Center	Type of Collaborator				
	Business/ Industry (N=243)	Within Your Host Institution (N=265)	Other Education Institutions (N=254)	Public Agencies (N=180)	Other ATE Awardees (N=170)
a. General support	55 (23%)	76 (29%)	43 (17%)	32 (18%)	35 (21%)
b. Financial support	18 (7%)	30 (11%)	6 (2%)	16 (9%)	7 (4%)
c. Developing program content	28 (12%)	28 (12%)	49 (19%)	14 (8%)	31 (18%)
d. Facilitating service delivery	5 (2%)	26 (10%)	17 (7%)	13 (7%)	9 (5%)
e. Providing access to decision makers	7 (3%)	9 (3%)	10 (4%)	26 (14%)	5 (3%)
f. Providing information regarding workforce needs	61 (25%)	5 (2%)	3 (1%)	36 (20%)	5 (3%)
g. Developing articulation agreements	1 (0%)	12 (5%)	43 (17%)	3 (2%)	3 (2%)
h. Intellectual support	32 (13%)	14 (5%)	42 (17%)	13 (7%)	47 (28%)
i. Increased time on task	1 (0%)	11 (4%)	4 (2%)	1 (1%)	1 (1%)
j. Improved outcomes	21 (9%)	9 (3%)	15 (6%)	25 (14%)	22 (13%)
k. Direct instruction support	13 (5%)	45 (17%)	22 (9%)	1 (1%)	5 (3%)

4. If your project/center received other types of benefits from these collaborative efforts in 2007, please briefly describe the nature of benefits received and which of the collaborator groups provided these benefits.

1) The _____ Department of Education (LDOE) developed STArt (Success Through Articulation) Statewide Secondary to Postsecondary Articulation Agreement; 2) _____ DOE provided _____ High School Directory of Career clusters and Areas of Concentration and hosted 2007 Summer Institute where partners developed career pathway maps; 3) The _____ Board of Regents approved STArt for statewide articulation; 4) _____ Board of Regents provided training and membership for 22 institutions for Quality Matters peer review for online course assessment; 5) _____ College institutions provided training and assist in course development for General Education courses.

As part of our annual professional development workshop for teachers and counselors, we coordinate a two-day trip to Seattle, WA, one of the major biotechnology hubs on the west coast of the US. We participate in tours of small , medium and large biotechnology companies; research institutions; and biotechnology support centers. Each of these groups provided in-depth tours of their facilities and support materials to educate teachers and counselors on the types of career options for students and the educational pathways required for these careers. These collaborators also provide ongoing resource materials and ideas for classroom and lab activities for teachers.

ATE National Centers have all helped to disseminate the materials.

_____ representatives supported efforts to plan for future. In addition, they provided all materials needed to operate an effective internship program.

-Business and Industry provides information on workforce needs, hiring graduates and curriculum content advice. - _____ State University, Electronic Systems Department provides faculty expertise and financial support for administrators salaries, offices and other. - Support from Educational institutions such as K-12 Districts support the grant by providing transportation, facilities personnel for outreach events associated with the project.

Business and industry representatives join us on visits to high schools and other organization to talk to youth and adults about careers in manufacturing and the skills required to get those jobs.

business and industry: equipment donations

Business/Industry provided equipment/software support and "prizes" for participants

Close collaboration with the newly-formed Education Instruction department and with the Alternative Teacher Certification program, both at _____ Community College.

Collaborating with other education institutions, including such organizations as Project _____, has allowed our community colleges to promote Science, Technology and Engineering to high school students we normally would not have interaction with. In addition, our 4-year educational partners allow us to strengthen our articulation agreements and ensure students can transfer seamlessly to one of their colleges without loss in credit. Working collaboratively with other ATE Awardees allows the centers to share ideas and determine best practices.

Collaboration with industry and government organizations enhanced the Center's credibility with stakeholder groups; collaboration with industry, government and educational organizations created synergy in meeting mutually beneficial objectives; collaboration with industry, government and educational organizations enhanced strategic planning and implementation of activities to meet mutual goals and objectives.

Collaborative efforts benefit ___ in that they strengthen our STEM network and provide us with the greater ability to serve as a convener and disseminate program information. In addition, collaborative efforts have helped ___ to build connections that benefit the community college community on a national level inside and outside the STEM fields.

During this report period, our project was in the start-up phase and only in operation for six months of the noted timeframe. Other benefits received as a result of collaborative efforts will be further developed for reporting purposes in the 2008 annual survey.

Equipment donation for \$76000 - ___ a Community College Chancellor's Office of Economic and Workforce Development grants to strengthen the ___ Program curriculum and expand career exploration in middle school

GIS software and data from public agencies.

Giving "roots" to the program. Although grant monies are temporary, the collaboration has established contacts (like through advisory board), programs (like opportunities for college students and teachers at local industry; or for college students to tutor at local schools...), and processes (aka pathways; "if you want to be a teacher in ___ school district, this is what you need to do. If you'd prefer ___ school district, this is what they require...") that are sustainable.

___ High School System: Students exposed to aviation maintenance and inspection careers through open-house events.

Help in recruiting students from under-represented groups - All collaborator types

Honoraria for guest filmmaker/presenters and dissemination of publicity materials from professional associations (Business/Industry)

improved project effectiveness

Increased visibility of our Center due to the support of our industry partners and their associations.

Industry - collaboration for career awareness for high school students

industry volunteers came to class sessions to observe and evaluator student presentations and discuss the realities of work with students. They provided ideas and reviews of initial scenario content and then formal reviews of instructional and assessment materials as they were developed. They made suggestions on the overall work of the project and how we might improve it.

internship sites...exchange of ideas and knowledge

Local business and industry has collaborated with us to provide training of current employees on site at the ____. Additionally, other companies have heard of our efforts and have hired students to work in cooperative education experiences at their companies (i.e automotive industry, manufacturing industry, etc.). The City of ___ has hired 6 students; as a result other departments within the city have contacted us to place students in non IT cooperative education experiences and ultimately permanent jobs.

Local industries have provided general support as well as intellectual support by advising us in terms of the techniques required from our students as well as the equipment needed for effective training. We have also had personnel from industry as guest lecturers for our current students.

Local industry collaboration resulted in good PR and also providing job opportunities for graduating students.

Middle and high school teachers worked with us to hone our program and also teamed with us on offering content to their schools/students and developing GIS courses at their schools.

One of our partners is _____. They not only provide us with the director, but they also provide us with opportunities to collaborate on other projects such as k-12 outreach, mini-conferences held at _____, access to subject matter experts and materials. Another one of our partners, _____, provides us with industry contacts, access to member email data and assistance in reaching out to industry. This has been very valuable in our two industry surveys (one with a national focus and the other within the state) and allowed us to make contact with other educators as well which has resulted in additional projects. University of _____ has provided access to their clean room facilities, personnel and expertise above and beyond expectations.

Other ATE awardees provide opportunities for dissemination. They also provide us their research and developments so that we do not duplicate efforts.

Other ATE Awardees: Collaborated and submitted (3) joint ATE proposals Public Agencies: Potential collaboration on future projects.

Our ATE project is one component of several being interfaced to create a recognized and viable Center of Excellence in Transportation, Distribution and Logistics. Business and industry have been primarily involved to date by providing information regarding workforce needs and identifying industry competency skills standards to support curriculum development from high school through an associate degree for the initial component of a TDL career pathway. However, in doing so, they have also shared ideas and expert advice on the direction of our project, with many devoting considerable time to participating in and offering input regarding our Web-based industry survey. _____ Community College is the host institution and has provided support at all possible levels that is difficult to quantify. The Finance Office and Grants Administration Office have provided the necessary structure of internal controls, fiscal management assistance, and program review and support. In-kind contributions also extend to visibility and dissemination at executive levels, additional time on task when needed, research and data mining to support project activities and reports, better quality products through internal review processes, expanded community relations through interfacing of various projects related to TDL, facilities usage, and administrative time from the Executive Vice President and Vice President for Workforce Technology. Other educational institutions not only have provided general and intellectual support but also have engaged in initial discussion regarding course development and baccalaureate degree articulation beyond the project scope and extending to the center of excellence level. This is a current action item of the new University Center located on the _____ campus that serves the _____ Training and Education Consortium (5 community colleges) with the transportation/logistics curriculum planned for delivery to the 12-county region. Additionally, several other educational institutions and existing ATE projects are collaborators in our project's planning proposal to explore the particulars of creating a national center of excellence and are committed to sharing resources, expanding partnerships, and implementing strategies that are requisite for development of a national center.

Our interactions with business and industry provided real world projects for our students to work on. In addition these partners provided information on current trends and directions in their business sectors. Our collaborators in the Business Department and the English Department continue to provide valuable input on instructional techniques and assistance on assessment and evaluation of student performance.

Our many collaborators were extremely helpful to the Center again in the past year within a multitude of areas. Again it was difficult to narrow the benefits received by collaborators to just two. For instance the host institution, the other education institutions, and the public agencies have all assisted the Center in the Center's industry outreach initiative to spread more awareness across the state of Pennsylvania.

Outreach Activities: ____ Department of Public Instruction - ____ Advanced Learning Technologies Association International Game Developer Association - ____ County Economic Development Advisory Committee/Program Development International Game Developer Association

Participating in joint activities with other educational institutions, industry associations and ATE projects and centers.

Perhaps it falls under the category of "General Support", but our work with the local area high schools has been very useful. The high schools have collaborated with us to take students on field trips, provide the students with tours of our ATE center, and provide us with the opportunity to speak to students in their career exploration classes.

Personnel support from the host institute was exceptional and allowed opportunities to share resources to have a greater impact on the participants and community. The collaborations with both the host institute and other educational institutions provided many students and faculty they would not have encountered with out the support of the ____ Grant.

____ provided current information on Energy Services industry employment trends and current and emerging workforce needs. They also provided faculty development and support.

Professional Societies have been especially helpful with providing access to industry professionals.

Public Agencies and Industry on our advisory team have given time and effort to support our new program. They attend our functions and talk with students about career opportunities. State universities in ____ have been helpful in collaborating on articulation agreements and see the value of our project. ATE awardees network at meetings and give informational support. Through this network we were invited to participate in a GIS&T forum hosted by the ____ Center to determine criteria for siting a GIS&T National Center.

Representatives from collaborating institutions (both industry and academic) -sit on ____ advisory committee -advertise the ____ Biotechnology Program and ____ Project to other institutions within the Biotech industry -guest lecture at ____ to a student audience from different disciplines, which include, Biotechnology, Biology, Chemistry, Mathematics and Engineering.

Scholarship benefits to students (approx.\$35K); support from economic development agency for ____ video production, speaker support for interviews; donated space for meetings hosted at automaker facilities; intellectual support from key industry personnel; tours, other direct industry contributions; etcetera.

Software donations for participants

Staff and major personnel at ATE Centers ____ and ____ both have provided continued support since the inception of the grant. Due to the proximity to the project in real and abstract terms, they have contributed in almost all areas of the grant.

**Student support services such as collaboratively developed summer learning experiences
Textbooks and instructional materials for the Working Connections conference.**

The 31 schools noted in question 1 all have teacher members of our Biotechnology Teacher Support Network.

The donation of equipment and materials from business and industry partners.

The ____ Center for Learning and Instruction is a unit within the ____ Community Colleges that supports innovation and faculty development. ____ staff supported the district DVL Dialogue Day; they have also provided graphic design support and some technical assistance. Two of the ____ colleges have provided general support to the project.

The support from ____ University and ____ has been great in developing articulation agreements. The ____ program which has a link to NASA has been excellent in providing assistance in outreach instruction and internships.

The supporting automotive manufactures provide vehicles, expert trainers and all necessary training aides to tech hybrid automotive technology to college instructors. The value of such training is immeasurable.

The ____ Stem Cell Educational Facility provided us with lectures, faculty training, supplies, and stem cells so that we can provide hands-on instruction to our students in this area.

Two ____ engineering graduate/senior students were hired by NASA AIHEC and NASA STARS programs to help in mentoring ET students as well as the laboratory development. A complete laboratory development guideline was designed. New laboratory equipment for Instrumentation, Automation, and Robotics lab. were ordered under 2006 DoD grant. 10. ____ and ____ submitted a proposal to NSF ITEST program. The proposal will help to establish ____ MARS-Intelligent Cooperative Multi-Agent Robotics Project and experimental Mars Yard. 11. Articulation agreement is underway with ____ University. 12. ____ and ____ attended NSF Tribal Colleges Engineering Conference. 13. A "small Equipment Grant" request was submitted to INTEL for 12 new desktop computers for the new Manufacturing Technology Lab. 14. ____ attended the " Minority Serving Institute-Cyber Infrastructure " meeting in ____ . MSI-CI2 project will help ____ to set up its Grid computing infrastructure. ____ received an INTEL Foundation donation of ten PC computers and two laptop computers for the robotics laboratory. National Instrument foundation agreed to donate site license of MULTISIM Circuit Simulation Software to ____ ATE program.

We are currently operating on in year four of a three-year project. We are making the move to full self support using carry over funds from the project, and support we received from a the state of ____.

We have collaborated extensively with the ____ ATE Center in ____ for faculty development, workforce needs assessment, and professional development.

We have used students at ____ High School and ____ Community College as test subjects to try out our online assessments

We were able to attend the ____ conference through the Southwest center for micro systems education.

We worked closely with our partner institution (____), but they are sharing this ATE grant.

Working with the high school educators provided forum for both discussion and collaborative fund raising. Working with industry provided improved skills based programs and professional development.

5. Collaborative efforts are expected to produce benefits to the collaborator groups as well as to your project/center. For each type of collaborator, please check (✓) **up to two** benefits that you believe the collaborator group received. *Each column should have two checked benefits at most.*

Benefit to the Collaborating Group	Type of Collaborator				
	Business/ Industry (N=231)	Within Your Host Institution (N=257)	Other Education Institutions (N=240)	Public Agencies (N=160)	Other ATE Awardees (N=139)
a. Direct monetary benefit (e.g., reduced costs for training employees)	27 (12%)	28 (11%)	27 (11%)	8 (5%)	8 (6%)
b. Access to facilities, equipment, etc.	19 (8%)	38 (15%)	37 (15%)	23 (14%)	12 (9%)
c. Intellectual support (new ideas, better techniques, expert advice, etc.)	21 (9%)	54 (22%)	52 (22%)	24 (15%)	56 (40%)
d. Increased time on task—more people and/or more time applied to defined priorities	3 (1%)	19 (8%)	14 (6%)	8 (5%)	7 (5%)
e. Improved quality of a targeted group (workforce technicians, students, etc.)	61 (26%)	23 (9%)	27 (11%)	29 (18%)	8 (6%)
f. Marketing or sales improvement	4 (2%)	18 (8%)	4 (2%)	11 (7%)	6 (4%)
g. Improved outcomes (better quality products, community relations, etc.)	19 (8%)	29 (12%)	18 (8%)	25 (16%)	18 (13%)
h. Access to your program or its students	50 (22%)	26 (10%)	46 (19%)	26 (16%)	19 (14%)
i. Opportunities to teach in your college	27 (12%)	14 (6%)	15 (6%)	4 (3%)	5 (4%)

6. If other benefits resulted from these collaborations in 2007, in the space provided please describe the nature of benefits received and indicate which of the collaborating groups received the benefits.

**1) Business and industry partners have increased access to better prepared student interns.
2) Secondary and postsecondary faculty has greater access to ongoing professional development at no cost to the participating institution.**

A large number of teachers will be trained in the process of Problem Based Case Learning by project staff from across the nation using video and web based materials developed by this project. This report represents only 4 months of planning. Future reports will concentrate much more on the benefits received.

As a result of the collaboration between the different entities at ____, there is increased visibility of the teacher preparation programs and increased participation in these programs by community college and post-baccalaureate students.

Business and industry again received indirect monetary support, by their ability to access highly skilled employees with both theoretical knowledge and applied hands-on training. This enables companies to save large amounts of up front training time for these workers, gives the new employee a wider view of the processes they will encounter, and allows them to hit the ground running. This has allowed these new employees / former program students to contribute to bottom line gain at their respective organizations.

Business and Industry improve community relations due to the collaboration.

Business/Industry gained support for legislative initiatives affecting their workforce.

Businesses will receive interns and potential employees for the first time in May 2008 (first cohort completing the ____).

buy in to our curricular development efforts

____ has begun work on manufacturing video and links to other ATE Center video productions that will be provided to our ____Automotive Manufacturer's Association in a collaborative effort to improve the knowledge of and image of manufacturing via their website. We continue to receive strong support from the ____ in the form of direct scholarships, industry advice, advice from their board, and direct access to their industries with support for our meetings, training, tours, etc. In exchange, they have access to an increasing number of technicians, input into our technical program content, access to our schools to offer industry training, and many other direct benefits.

Collaboration on curriculum and industry participant skills. Identify and strengthen Biotech connections between ag and life science disciplines.

Collaborative efforts with local workforce boards and industry have allowed the Center to pursue non-NSF funding.

Collaborative relationships have lead to additional activities outside of the ATE grant. These include joint proposals to other funding sources and continued participation with partners after a grant ends. I continue to serve on industry association Advisory Boards even though the grant through which I was appointed to the Board has completed since the new grant is also relevant to the societies.

Collaborators, especially other education institutions, were provided educational opportunities through our project.

Due to the connectivity of the center with partners from government, education and business, each partner has access to individuals and resources they might not normally. The center has the ability to bring individuals together from varying arenas to work on the common goal of trying to increase the skills of students so they can meet the demands of area employers in manufacturing.

During this report period, our project was in the start-up phase and only in operation for six months of the noted timeframe. Other benefits received as a result of collaborative efforts will be further developed for reporting purposes in the 2008 annual survey.

Example: ____ Technology Council is helping to start lecture series on Renewable Energy Technologies. The ____ Technology Council members benefit by the outcomes of this project and will be informed of potential opportunities of these renewable technologies.

Host institution as well as university have benefited from development of ____ program to actualize initiatives on energy efficiency and sustainability. Program developed under grant has been adapted by ____ Taskforce on Sustainability for dissemination and duplication.

Increase enrollment at the host institution

Industry saw quality and our students and their training. Comment was made that they will now rethink their policy on requiring 4 year degrees for some positions. College benefited from new connections with community members and industry representatives who may become benefactors of the college in the future.

Institutional, business & industry upgrading and support of computer systems. Students provided technical support to community outreach agencies by replacing and repairing computers to be given to needy children. This project was coordinated through the local Chamber of Commerce.

It helped in finding part time faculty from local industry to fill the instructional needs in the department.

New start up Biotech companies in the San Diego area have contacted the ____ Project to initiate internship and hiring collaborations of the SWC Biotechnology Program graduates.

North Texas InterLink utilized data from our job forecast survey. New Student Programs used data from our student survey as well as grant staff serve as ____ in presenting the case for AAS degrees and workforce certificates. Collaborate with Tech Prep consortium, co-hosted educational symposium which resulted in reaching a broader cross audience of both high school and college faculty.

Other ATE Awardees looked to us as innovators to partner with and develop new joint projects. This resulted in (3) joint ATE proposals submitted. Other Education Institutions: Colleges pilot testing our project materials learned that their students had a skills gap that was previously unknown to both the faculty and the students; piloting materials gave the students real-world, hands-on experience, and gave them model that can be implemented campus-wide. Other colleges are adapting our rubrics to assess entering students' basic IT skills and benchmark their progress.

Other ATE awards, expert advice, shared models and strategies, evaluation assistance.

Other benefits include a Harmonized Skill Standard for Biopharmaceutical Manufacturing Jobs which benefits industry, educators and public agencies (DOL).

Other benefits included increased exposure to previously unknown partners.

Our curriculum material development benefitted both local, regional and national first responders.

Our partner high schools definitely received a benefit in that very few California high schools have technician training programs available to students. With our existing articulation agreements, students can be enrolled in high school and take classes in our ATE center.

Our work experience/internship program is considerably approved now. Local business and public agencies gain from this by having more access to our GIS students as their interns--the students certainly gain by having excellent intern choices. This is also a valuable marketing tool for the college as we expand our internship opportunities and build relationships into the community.

Participated in the Legislative Roundtable Discussion. TO share information about economic, technological, and educational impact of the Video Game Industry to NC law makers. EPIC GAME, Electronic Arts, Virtual Heroes, IGDA-____ Chapter, Microsoft, Entertainment Software Association, Virtual Heroes, ____ County Economic Development, NC State University, Destineer, NC Retail Merchants Association

Participating school districts are receiving significant benefits from business/industry/education institutions through resource materials, mentoring, and increased awareness of science enrichment opportunities. In turn, the collaborators have established new and effective ways of communicating their specific workforce needs to teachers and counselors to better prepare students for these careers.

Partner community college, ___ College, received training and technical assistance to manage and implement their own LAB Program at one of their district's high school. ___ College is expanding the LAB Program to two other high schools including the ____. Have observed increased awareness of the program in the region as evidenced by the attendance of local and regional businesses and community members to our regional advisory meetings and events.

Professional societies receive increased exposure for the society which will aid in the recruitment of future members.

Public agencies gained insight into the newly created training programs at community and technical colleges. Industry is able to obtain qualified technicians.

___ does benefit by hiring several of our graduates as interns. In the past these students have acquired permanent positions at ___ and the expectation is several of the current interns will end up as permanent or contract employees. ___ benefits as part of their charter is to support education, our input has resulted in significant visibility of the plight of Manufacturing Technician programs in the state and also the value of these programs. ___ has benefited by receiving several of our AAS degreed students into their engineering programs.

Schools supporting interim in-class evaluations also received the benefits of learning about the videos before others. They can then begin to plan how they can work the videos into their curricula as the project nears completion.

Sharing of best practices, scholarships, donated equipment. Industry received the most benefits.

Sharing of information, techniques, and upcoming events through a local GIS users group. Placement of student interns.

Since 2007 was the first full year and a development year for our project, many of the benefits to our collaborators have not yet been realized. However, the foundation is strongly in place and the accomplishment of our objectives in 2008 and beyond will provide a wealth of benefits to existing and new collaborators.

Surplus equipment from ET program was donated to ___ and ___ high schools. ___ and ___ attended a recruitment meeting in ___ hosted the fall 2007 RoboRave competition. ____, and ___ are offering mentoring for RoboRave competition teams from ___ high school. The efforts will help to improve ___ outreach and recruitment. ___ Roadrunner 2.0 and 3.0 versions were selected as the platforms for levels I – IV of RoboRave competitions (please check: [website]). Platforms are provided free of charge.

Technical expertise is shared among partner institutions.

The "roots" of this program will continue to produce fruit for the collaborating groups as well. Groups are happy to have more interaction with college students who may become teachers.

The benefits to collaborators include the opportunity to network, and build further collaborations of benefit to their STEM programs.

The Center's involvement in various collaborative projects have resulted in additional money and staff time to help increase their variety, enhance their quality and speed their implementation with industry, government and educational partners.

The ___ Center benefited from our participation and discussion of the needs and criteria for the proposed National Center for GIS&T.

The students of both ___ and ___ benefited greatly from the internship opportunities provided by the collaborative partners formed through the grant.

The ____ Technical College System developed a process by which faculty can be certified to teach renewable energy technologies and has asked us to write a proposal by which faculty can receive professional development in this area.

We have provided support and information to a number of institutions and their staff who are beginning biotechnology programs. This is part of our grant-related work and also is part of our on-going program efforts.

7. What factors do you consider important for extending your collaborative relationships beyond the completion of your ATE grant funding?

1) The development of statewide and local articulation and dual enrollment agreements; 2) Establishment of ongoing professional development for ICT faculty at all educational levels; 3) Strengthening of key secondary and postsecondary relationships from local to state level; 4) Development of special advisory committee for ICT Career Pathways; 5) Strengthened internship program to better serve business and student needs.

2008 is a year in which we are building connections with local industry. We expect that these connections will assist in sustaining the project beyond August 2009.

A long-term relationship will be enhanced by establishing a successful "track record" on collaborative projects while under NSF funding.

A quality product our project has produced that other users want, and funding from my own institution.

A shared vision and a sustainability plan

____ is committed to supporting STEM education in community colleges. AACC will continue to build its network of ATE awardees and other community colleges and educational institutions for the purposes of improving STEM programs, awareness, and leadership.

Access to ideas and collaboration with faculty in similar disciplines at other colleges. Improved outreach. Better advisory committee participation; use of institutionalization of professional development and regular catalogue/curricula placement of all courses developed.

Building relationships

____ is considered by several of our major automakers as the one stop shop for access to our students, programs, course content, training needs and many other services directly impacting the automotive manufacturing industry.

Career pathways for students; knowledge and learning dissemination; hands-on training; ____ alumni to market the importance to new students; industry to continue playing supportive role (equipment, scholarships, internships, externships, improve working conditions of technical personnel with acquired education from this effort, promote the concept in collaboration with industry of continuing education towards a higher degree.

Channels for placement of students in internships.

collaborations with industry and collaborations with ATE project manages, and especially our local center!

Community awareness of the long term goals of the project and the immediate benefits to the high school and college students.

Conducting related training activities to broader audience. Extended relationships among teachers, staff and other collaborating institutions. Finding additional sources of funding.

Considering a network orientation to enhance a community of practice that yields to local and regional access and opportunity to interact with other community colleges so that they can assess the benefits of implementing the program within their walls.

Continue to provide expert advice, project evaluations, grant writing assistance and continued professional development activities through the website.

Continued communicating with the business/industry partners.

Continued Communication Advisory board participation

Continued communication and presence at meetings and participation in collaborative activities

Continued contact with business & industry, one-on-one and through ____ advisory group

Continued networking and sharing of resources initiated through this grant will definitely be continued. The continuation of partnerships that have had a positive impact on students, teachers, faculty, and community members will be expanded as well. The productive relationships formed and positive outcomes of this project should create avenues for collaborative efforts with educational and industry support.

Continued open communication channels between partner institutions and collaborators. Continue to take advantage of opportunities to collaborate together to reach larger audiences, make a bigger impact. Job market trends continue to influence choices of collaborative partners.

Continued support by industrial partners in both equipment upkeep and maintenance

Continuing relationship on instructional materials development and improvement.

Continuing the personal relationships among participants and contributors.

Continuing to develop industry contacts.

Continuing to stage guest filmmaker events, establishing a creative locus for the professional community. Maintaining high aesthetic standards, classical fine art training, current technology and participation in international conferences. Outside forces: Reduction of film industry outsourcing of technician jobs. Relaxation of federal restrictions on foreign student visas for community colleges (their stronger art skills influence American students favorably).

Curriculum Improvement, Workforce Needs, Outreach activities. The Serious and Entertainment Game Industry is a fast growing industry which has already surpass the movie industry. The technology evolves almost from day to day. We will continue working with Serious and Entertainment Game Industry to make sure our curriculum is up to date and to meet the workforce needs. We will also work with North Carolina Department of Public Instruction North Carolina Advanced Learning Technologies Association International Game Developer Association - ____ Chapter - ____ County Economic Development to educate the public about the economic, technological, and educational impact of the video game industry, especially the applications of serious game technology in Science, Technology, Engineering and Mathematics.

Determination by host institution of tuition costs for dual credit courses

Developing a community of expertise and sharing curriculum development tools and techniques.

Developing and maintaining various means for communication individually and through communication networks.

Developing opportunities for collaboration with other ATE projects; endorsement of materials by other ATE projects; endorsement of project products by industry associations and colleges that have adopted our materials into their programs of study.

Developing programs and activities that align with the goals and interests of potential collaborators is key to developing and maintaining long-term relationships. Additionally, the professional and personal relationships that Center staff develop with collaborators is critical to the success of the Center. Having a low turn-over of key staff is critical and staff that know how to work a trade show!

____ University has made significant inroads in terms of generating support from business and industry in _____. ____ and ____ have committed significant amounts of money to in-service teacher training, particularly in math, using many of the ideas developed via this project. It is anticipated that we will continue to sell the content driven and pedagogical ideas derived from this project to other business interests. In addition, an interactive relationship has been established with ____ Universities. In this case, ____ is interested in how we might blend the content/pedagogy approach to math and science with their emphasis on the research experience to enhance both K-6(8) teachers as well as the faculty who teach them math and science courses.

Ensuring that all collaborators continue to mutually benefit is crucial. If collaborators cease to benefit, the collaboration will disintegrate. Industry representatives must be actively involved in project operations through advisory committees, mentoring programs, internship programs, and other measures supportive to the Project, all of which need to show tangible results in order for collaborative relationships to continue beyond the grant period.

Establish good working relationships with colleagues at other institutions.

Establishing a solid relationship with collaborators and meeting the needs of industry will help with our sustainability.

establishing status as THE national center for agriculture and having a critical mass of ag educators. This will provide a network for the center's work through the US, which will continue to: grow additional education collaboration; and encourage continued support by industry. A critical mass of ag educators is important to industry as they want to work with an entity rather than many different individual colleges. Continued quality workshops and materials/ services will help promote further relationships with education and industry. Industry sees the value in hiring a person that already has the fundamental technology skills.

Establishment of a statewide IT education consortium. Establishment of college career pathway teams with ____ funds provided as stimulus or seed funding.

Facilities, knowledge of the project and education

Factors include Institutional Support, Faculty Development, Access to Facilities, Curriculum Content.

Financial Support Common interests and needs Other resources as needed

Finding additional financial support and funding opportunities.

Gaining buy-in from all collaborators and stakeholders by institutionalizing the relationships built during the project.

Generalizing our ATE educational software effort to a broader range of STEM disciplines.

Good communication between partnering institutions.

Good relationships; potential internships

greater intra-institution cooperation (partnerships with other departments within the college) maintaining quality staff and scientific expertise at the 2-year college level

Having contact with Power Plant employees helps our students have access to co-op and full-time jobs.

Hopefully area businesses will be willing to continue allowing information technology staff to complete summer internships with them.

If the organization that received the grant continues to work in the field that is relevant to the collaborative relationship.

Improved relationship between the two collaborating colleges.

In order to continue collaborative relationships beyond the completion of the ATE grant funding, Fuel Cell developmental support from government and industry with the educational system is needed together to develop the industry into economical enterprises. A key feature of doing this would be a database of collective effort and dissemination of information into more of a regional collaborative dissemination activities center. Another key feature is the continuance of hands on projects for students, besides the support for technological advancement in the fuel cell areas, being integrated with other alternative energy sources.

Increased enrollment in IT programs for this year's high school juniors. Economic development continues to promote and recruit business to the Volusia and Flagler County areas. Incentive programs are in place to assist with training and retraining of employees. Industry involvement continues to be crucial to the success in meeting the demands of the future.

Increased number of articulation/joint transfer agreements and resources to stay current.

Industry is in need of having flexible training available at their finger tips. If we can continue to offer innovative offerings that will meet their needs and are physically do-able on our end we will be able to expand our collaborative partnerships. Continuing to work with other institutions giving industry more options will also aid our collaborative partnerships.

Industry perceives a value-added benefit to working with their area community and technical colleges; e.g., use the results of the electronic DELPHI survey on the skilled maintenance work duties and tasks to standardize the required college curriculum content revisions and maintaining.

institutionalization

Institutionalizing specialized training programs. Continue to use industry instructors. Keep the online network communications.

Intellectual support

Involving more teachers in our professional development workshops.

It is important to make connections within ____, beyond our organization with other educational institutions, and with business and industry. Early in 2008, we formed a dissemination advisory group that represented all of these constituents to provide guidance about dissemination through the end of the project and beyond. We hope to collaborate with partners from these types of entities to develop new proposals to continue the digital visual literacy work at the end of this project.

Keeping the relationships going.

Maintain contact. Continue to keep groups informed of pertinent college activities. Continue to encourage interested students to work with participating groups. Continue to inquire about the needs of the collaborators. Sustaining the advisory board would be an excellent idea.

Maintain direct contact with members of industry and academia by participation in local and international Meetings and conferences related to biotechnology. Maintain our industry advisory board and meet with them frequently.

Maintain ongoing communication with our advisory board and with the professional community. Commitment to diversity within our project will allow us to raise our visibility among underrepresented populations.

Maintaining active industrial advisory groups is critical for our project and the sustainability of our project. The most important factor for maintaining collaborative relationships will be communication. The institutions involved in the articulation agreements must maintain communication with each other and with the students to ensure that everyone understands the process and that we do not erect barriers to students.

Maintaining business/industry contacts.

Maintaining collaborators on advisory committees.

Maintaining relationships with local GIS user group and networking meetings. Access to resources at the college and trained students. Developing opportunities for internships with partner organizations.

Maintaining relevance.

Maintaining the expertise and credibility of the staff, its services and its activities; securing funding to continue Center operations; extending the reach of the Center into the broader area of engineering technology; and, maintaining and enhancing the personal and professional relationships that support collaborative ventures.

Many of the relationships we have established during the funding period will be sustained.

____ ATE Program working with industry and public agencies that use GIS technology supports the community and the mission of the college. Many ____ students transfer to state universities and increased interaction and articulation with them makes a seamless transition for students. It also supports local and regional education goals.

Mutual benefit for collaborators

mutually beneficial arrangements

My personal relationship with the collaborators. My joint appointment with ____ and ____.

Networking Keeping Current Sharing Resources Articulation Awareness and Diversification

None expected - the collaborative relationship was in the role of test site of the concepts

Obtaining funds to keep the center in operation

Opportunities to serve on advisory groups.

Our original proposal to NSF was reduced in scope and budget through the funding negotiation process, so we had to scale back our activities, number of partners, and target outcomes. Extended collaboration will provide more support in the delivery of the funded project as well as a demonstrated framework for continuation of project activities. Also, we have submitted a planning grant proposal to NSF, which has been approved by the program officer and forwarded to the NSF grants office. This planning proposal outlines strategies for project continuation and development into an ATE National Center of Excellence in Transportation, Distribution, and Logistics. It is critical that we not only maintain current collaborative relationships but also expand our network of partners, to include other ATE projects and non-ATE entities. It is also important to create interfaces between our project and its extended activities with the _ WIRED region and other WIRED regions in order to maximize outcomes and federal investments.

Our outreach project will "live on" if a subset of our participating teachers firm up as teacher-leaders, and if we can help them network with other higher education institutions in their region, and if we can institutionalize our lab modules aligned with state science standards. we are moving in these directions.

Possibility of collaboration in future activities and projects such as continued communication for articulation and feedback on new trends in STEM careers.

Professional and personal networking that ATE money and influence has allowed me to develop. It's been invaluable.

Professional development - summer conference to share best practices and master science techniques to further integrate additional labs classes. Established a resource support system as Biotech Curriculum is further integrated.

Provides increased opportunities for students

providing a good return in investment

Providing online resources to insure that the curriculum is available to teachers and trainers beyond the ATE grant funding for this project.

Quality of the product produced and the extend of training provided to faculty regarding the Problem Based Case Learning process.

regular communication and networking opportunities with all stakeholders

Relation with the industry and professional organizations

Student numbers in the community college programs. This is really the only metric of value to many of today's administrators as their funding formulas are generally based on the number of students enrolled. It is even less important as the percentage of students which obtain employment as a result of their education. Most of our collaborative efforts are funding by the grant. Less funding will result in less collaboration overall. These programs are strategic and long term in nature - they are building the infrastructure for the future. For the emerging technologies - these are always evolving and by nature, the programs need to continuously evolve. This is opposite of what is traditionally done (Classical physics, english, mathematics don't change much so improvements to how things are taught have a longer shelf life. Programs such and Nanotechnology, BioTech and Microsystems, for example, are constantly evolving and need a continuous process improvement infrastructure to remain valuable.)

Student success will stimulate more interest in the program at the local high schools. The career pathway starting in middle school will contribute to the affluence of high school students to our program.

Success of current modules is certainly important. We need to get our materials widely distributed. This will help us get feedback that will convince a businesses, secondary and postsecondary institutions to adopt our products.

Success of students transferring to other institutions. Marketing efforts to feeder schools (high schools). Providing direction for further career/educational pathways beyond the two year degree.

Sufficient time allocated and financially supported to maintain relationships. This requires acknowledgement of the importance of the collaboration and benefits from Executive Management of the Institution -- which DCTC has.

Sustainability and funding are one of our primary concerns. The industry has embraced the efforts. With enough time, we will grow to become self sustaining.

Sustainability of collaborative relationships will require ongoing contact between (1) business/industry/education institution representatives, (2) participating teachers and counselors, and (3) project staff. Central to this triangle will be project staff who will need to be available both for mentoring and resource support to middle and high school teachers and counselors, as well as primary contact with collaborating businesses, industries and research institutions. This project also will partner teachers with businesses for summer internships. It is hoped this relationship will have long-term impact for both the teachers and the businesses.

sustainability of our Center and its projects; long-term viability of Center and its work; continuity of leadership of Center

Sustaining the collaborations beyond the grant requires that we: (1) demonstrate we listened to the advice given and adjusted our work as appropriate, (2) explicitly state benefit of the collaboration for all parties, and (3) connect online through a community of practice that is supported by some institution or funding source but maintained and sustained by the participants independent of any one institution.

Technology support for website; funding for networking resources

The accessible database of products generated as part of the program will support interest and inquires about the project goals. The distance education methods and curriculum will continue to enhance and affect all education districts in the state of ND.

The collaborative relationships will remain between the community colleges, 4-year partners, business and government because the relationships already existed as a result of the College of Technology. These collaborations will continue after the completion of ATE grant funding.

The factors we considered important are intellectual support and development of program content

The goal of the collaborative effort is to increase the number and quality of highly trained research technicians which will then increase productivity in the workforce in surrounding industry, institutions, and public agencies. If we can maintain and increase the quality and numbers of workers, industry and higher education institutions will recruit our students on a regular basis. We have already seen signs of this as a result of the ATE grant.

The growing demand for the high quality product (the graduating student) that is produced through the regional ATE Center. Also the growing projected need for people who are proficient at working at the nanoscale and with nanomaterials. We have to date just scratched the surface.

The implementation and use of Web 2.0 Collaboration tools, the ____ open content system.

The important factors that should extend the collaborations beyond the project end date evolve in great part due to the reputation and capabilities of _____. Their involvement in major, national, technical databases and their own open content portal, will help to disseminate information and communications technology videos throughout the nation and the world. Arrangements are in progress to include this project as part of their plans in this area.

The industry partners will continue to be interested in the skills and abilities of our students. The continued input of these partners will be valuable as we continue to adjust program content to meet current industry needs.

The most important factor is keeping the momentum and synergies we have developed operational. We have made excellent connections with business/industry and public agencies. Our project has not developed anything new, but we have served to make connections between existing resources in the public and private sectors with the K-12 (mostly middle-high school) educational community. It seems that K-12 education wants/needs involvement from business/industry/public/private groups but don't know how to secure that and business/industry/public/private groups want to help K-12 education but don't know how to get involved. We have provided the connections, and everyone has benefited. The issue seems to be that both parties speak different languages, have different visions for what is needed, but in the end, they both have common goals (although they may not realize it because of the "language" they use). Our connections have helped each group. We want to be able to continue to provide that service and to expand to a larger audience, possibly statewide. Our model should be able to be duplicated across the state, and we have had some limited successes outside our primary targeted project regions, but more funding is needed for more personnel to continue and expand our efforts.

The most important factors are: (1) development of supportive relationships with local industry/businesses in the Energy Services industry and (2) development of articulation agreements with 4-year colleges to where our graduates can transfer.

The most important factors in extending our collaborative relationship are: 1. Resources and support continuing with our public agency partners 2. Our host institution supporting current and future career pathways 3. Continued cooperation and communication with business and industry partners 4. Increasing our outreach to other educational institutions

The mutual benefits received by the collaborators and the host institution from working together on this particular ATE project will insure future collaborations. The activities supported by this grant improved engineering and technology programs at both the high school and college level and should result in an improved workforce for the engineering and technology industry.

The needs shared with us for necessary courses (those businesses need and/or schools don't provide). Additional information that is shared with us regarding workforce needs. The access to our program and computer lab that is made available to secondary students.

The PI will continue to be active in the Education Instruction department and will continue to pursue the development of science courses for pre-service teachers.

The programs we have established will have long term effects on students and we have already begun setting up or extending our partnerships beyond the grant period.

The relationships and legitimacy we establish now will help us, as well as ATE funded projects, in the future. We expect we will continue to see our collaborators at national and regional conferences in the coming years. We also expect to continue collaborations with our partners to produce scholarly research related to ATE, its role in training a diverse group of technicians, and ATE's contribution to society at large.

The relationships that have "stuck" are self-sustaining in that each party is benefitting from the collaboration in some way. The parties share a mission and many of the same challenges.

The relationships we have established are being sustained.

There are mainly two benefits of extending collaborations with local industry. First it keeps the local industry informed of the educational training our program is capable of providing. Second it immensely helps our students in finding practical training while still taking classes at school and then to find full time gainful employment upon graduation.

There are three crucial factors that will allow us to build on the successes of the current ATE project. First, continued strong outreach to high schools. Second, continued operation of the Summer Innovation Institute. Third, continued emphasis on the application project management skills in manufacturing classes.

This grant established a foundation for seeking other grant funds from NSF and elsewhere.

This is good work and very important to the long term economic growth of the region, it can not just cease once the grant comes to an end.

This project supports an industry vital to the nation in terms of national defense and economic development.

Time and money

We are going to partner on a new proposal.

We intend to continue the relationships established with the public agencies and with the four year institutions.

We intend to expand our partnerships with K12 teachers and schools to bring GIS to their students. This collaborative effort has succeeded perhaps beyond what we had originally anticipated: San Diego is at the forefront of offering GIS education at the high school level. We also intend to continue building relationships to businesses and public agencies that will both hire our students after they finish our program and that also wish to provide internships while the students are in training.

We will probably submit another ATE proposal to continue and expand our project. My dean has said that another few years of funding would then give our college the ability to sustain this effort.

Workforce needs and educational needs. These are two very important factors, and as long as they exist we will continue to have collaborations.

would be helpful to have continued access to (and funding opportunities for) ATE conference

SECTION 4: MATERIALS DEVELOPMENT (*N=57, 35%*)

Complete this section if your project/center develops materials for national dissemination and the funds your project/center allocated to materials development activities in 2007 amounted to EITHER 30 percent or more of its direct costs OR at least \$100,000.

This section of the survey focuses strictly on materials developed for national dissemination to serve instructional purposes (e.g., it does not include project/center promotional materials). Materials addressed here are the media (textbooks, laboratory experiments and manuals, software, CD-ROMs, videos, or other courseware) used to convey the content and instruction of activities, modules, and courses. For survey purposes we have defined activity, module, and course as follows:

Course: A stand-alone collection of instructional content and activities to achieve some desired educational outcomes. Courses usually last a semester or a year.

Module: A self-contained collection of content and activities designed to achieve a set of specific objectives. Modules are generally shorter than courses and focus on fewer outcomes.

Activity: An activity is an instructional exercise—for example, a laboratory experiment—designed to achieve a discrete learning outcome or a test to measure achievement or progress toward that outcome.,

For the items in this section, we are interested in the number of **discrete** activities, modules, and courses that your project/center developed in 2007. Do not count an activity in the activity category if it was included as part of a module or course. Similarly, do not count a module separately if it is included within a course you reported.

- For each type of material listed below, report the number of materials that were in draft stage or field-tested in 2007.

Development Stage		Type of Material		
		Course	Module	Activity
a. # in draft stage	N:	28	25	23
	Mean:	3	10	16
	Median:	2	710	10
	SD:	3	10	22
	Max.:	12	43	100
	Total:	82	245	373
b. # field-tested	N:	22	21	24
	Mean:	4	11	17
	Median:	3	8	4
	SD:	5	12	41
	Max.:	16	43	200
	Total:	95	228	407

2. For each type of material listed below, report the number of materials that were completed in 2007.

		Type of Material		
		Course	Module	Activity
a. Number that were completed (If your answer is 0 for each of these three cells, skip to item 4)	N: Mean: Median: SD: Max.: Total:	23 4 2 4 16 99	25 10 6 10 40 249	23 37 8 104 500 854

3. For the materials you reported as complete in Question 2, report that are being used locally, elsewhere, and that have been published commercially. (A single course, module, or activity may be reported in multiple rows.)

Materials Distribution		Type of Material		
		Course	Module	Activity
a. Number in use locally (at your institution)	N: Mean: Median: SD: Max.: Total:	23 4 2 4 16 86	21 9 5 10 40 190	19 39 5 114 500 732
b. Number in use elsewhere (i.e., at other institutions)	N: Mean: Median: SD: Max.: Total:	15 4 2 4 16 54	18 10 6 11 40 184	14 19 9 29 100 269
c. Number that were published commercially	N: Mean: Median: SD: Max.: Total:	3 2 1 2 4 6	4 6 7 3 8 23	3 170 10 286 500 511

4. For the materials you reported as complete in Question 2, report the number of institutions, other than your own, that are using at least one of them.

N: 29
Mean: 56
Median: 5
SD: 190
Max.: 1,000
Total: 1,635

5. For the materials you reported in **Questions 1a-b and Question 2**, report the number of materials that are directed at each target audience for each type of material.

Target Audience		Type of Material		
		Course	Module	Activity
a. Secondary school	N:	9	19	24
	Mean:	3	7	29
	Median:	2	4	6
	SD:	2	7	101
	Max.:	7	26	500
	Total:	26	142	687
b. 2-year college	N:	29	26	24
	Mean:	5	13	15
	Median:	3	8	9
	SD:	4	12	17
	Max.:	17	45	72
	Total:	131	325	355
c. 4-year college	N:	9	13	13
	Mean:	3	10	13
	Median:	3	6	4
	SD:	2	12	20
	Max.:	7	45	72
	Total:	30	126	170
d. Business/industry training or education program	N:	8	11	6
	Mean:	8	8	14
	Median:	5	6	13
	SD:	9	8	14
	Max.:	25	26	32
	Total:	62	91	86
e. Other (specify): incumbent workers Military multiple education levels Workers in various careers	N:	3	2	2
	Mean:	2	4	11
	Median:	1	4	11
	SD:	2	3	13
	Max.:	4	6	20
	Total:	6	8	21

6. For the materials you reported in **Questions 1a-b and Question 2**, report the number of materials that use the instructional media indicated.

Instructional Media		Type of Material		
		Course	Module	Activity
a. Print only (e.g., textbooks, manuals)	N:	13	10	13
	Mean:	5	13	10
	Median:	1	8	6
	SD:	6	12	11
	Max.:	17	40	40
	Total:	62	130	125
b. Audio/video only (e.g., cassettes, videotapes, one medium only)	N:	2	1	4
	Mean:	6	40	12
	Median:	6	40	3
	SD:	6	-	19
	Max.:	10	40	40
	Total:	11	40	47
c. CD-ROMs (e.g., may include video, DVDs, audio, text, or a combination)	N:	7	10	11
	Mean:	5	9	8
	Median:	1	5	5
	SD:	6	12	11
	Max.:	17	40	40
	Total:	32	94	88
d. Online/Web-based only (e.g., Web CT, online self-paced learning)	N:	13	12	9
	Mean:	3	10	15
	Median:	2	7	10
	SD:	3	12	16
	Max.:	10	43	49
	Total:	44	120	133
e. Mixed media (e.g., textbooks with supporting CD-ROM—any combination of above types)	N:	15	12	13
	Mean:	5	14	53
	Median:	4	6	10
	SD:	4	14	136
	Max.:	15	45	500
	Total:	75	163	690
f. Ipods, MP3s, etc.	N:	2	2	1
	Mean:	3	1	2
	Median:	3	1	2
	SD:	2	0	-
	Max.:	4	1	2
	Total:	5	2	2
g. Other (describe): <i>datalogger from PASCO</i> <i>Hybrid course</i> <i>Web-based Software</i> <i>Materials download from a wiki</i> <i>Print & CD</i> <i>Hands On & Research</i> <i>3d virtual environment</i>	N:	2	3	5
	Mean:	1	8	8
	Median:	1	6	6
	SD:	0	4	8
	Max.:	1	12	22
	Total:	2	23	41

7. In 2007, did you evaluate the quality of materials developed by your project/center?

42 (78%) Yes (If YES, please go to Question 8)

12 (22%) No (If NO, please skip to the end of this section)

8. How useful were the following types of data or practices for that evaluation?

(Percent values in “Data Gathered” column are based on the n of 42 that answered “yes” to item 7. Percent values in the four “Degree of Usefulness” columns are based on the n obtained in the “Data Gathered” column for that row.)

Type of Data or Practice	Data Gathered or Practice We Used	Degree of Usefulness of Data or Practice Used			
	Check (✓) those that apply	Not Useful	Somewhat Useful	Useful	Very Useful
a. Business and industry input to verify the alignment of materials to industry needs	33 (79%)	-	3 (9%)	12 (38%)	17 (53%)
b. Student and industry standards or guidelines	22 (52%)	-	2 (10%)	8 (38%)	11 (52%)
c. Review by external experts	31 (74%)	-	13 (43%)	17 (57%)	-
d. Field test of materials internally (i.e., within your project/center)	32 (76%)	-	2 (7%)	6 (19%)	23 (74%)
e. Field test of materials externally (i.e., outside your project/center)	22 (52%)	-	2 (9%)	4 (18%)	16 (73%)
f. Assessment of student performance in the classroom (learning effects)	26 (62%)	-	2 (8%)	8 (32%)	15 (60%)
g. Assessment of student performance in the workforce (work performance effects)	10 (24%)	-	2 (20%)	-	8 (80%)
h. Other (describe): Module Quality Control Rubric	1 (2%)	-	-	-	1 (100%)

SECTION 5: PROFESSIONAL DEVELOPMENT (N=68, 42%)

Complete this section if the funds your project/center allocated to professional development activities in 2007 amounted to EITHER 30 percent or more of its direct costs OR at least \$100,000.

1. Listed below are various types of professional development activities. In column i, report the total number of such opportunities your project/center **provided** in 2007.

In columns ii, iii, iv, and v provide additional descriptive information about those activities.

- In column ii, report the number of these activities that were conducted **at your institution**.
- In column iii, report the number of these activities that were conducted mainly **at a business or industry site**.
- In column iv, report the number of activities that employed distance education techniques (e.g., conducted online or with online support).
- In column v, report the number of activities that employed follow-up after an initial event (e.g., workshop) to support implementation.
- *If you haven't done the activity, put a zero (0) in the space provided.*

(Percent values in the "Total Number" column [column i] are based on the number of respondents to this section [N=68]. Percent values in columns ii-v are based on the n value in column i.)

Professional Development Activity		(i) Total Number of Activities Offered	(ii) Number Offered On Site <u>at Your Institution</u>	(iii) Number Offered On Site <u>at a Business or Industry</u>	(iv) Number Offered Using Distance Education Techniques	(v) Number Offered With Follow-Up to Support Implement- ation
a. Short presentations to raise awareness	N: Mean: Median: SD: Max.: Total:	53 (78%) 21 10 41 278 1,118	44 (83%) 7 4 12 70 314	27 (51%) 9 5 12 55 243	13 (25%) 7 4 8 25 86	18 (34%) 23 7 35 123 414
b. Instructional activities of less than a day (e.g., lecture, training session)	N: Mean: Median: SD: Max.: Total:	38 (56%) 19 9 58 364 716	29 (76%) 7 6 7 35 202	12 (32%) 8 6 8 27 100	8 (21%) 7 4 9 23 59	21 (55%) 19 6 53 246 402
c. Instructional activities that last one day to one week (e.g., workshop, online module)	N: Mean: Median: SD: Max.: Total:	56 (82%) 7 5 8 42 400	46 (82%) 5 3 7 37 234	17 (30%) 5 2 8 32 84	10 (18%) 2 1 1 5 20	29 (52%) 5 4 6 34 155

Professional Development Activity		(i) Total Number of Activities Offered	(ii) Number Offered On Site <u>at Your Institution</u>	(iii) Number Offered On Site <u>at a Business or Industry</u>	(iv) Number Offered Using Distance Education Techniques	(v) Number Offered With Follow-Up to Support Imple- mentation
d.	Instructional activities that last from one to several weeks (e.g., course, summer institute)	N: 31 (46%) Mean: 4 Median: 2 SD: 7 Max.: 35 Total: 127	20 (65%) 3 2 3 9 59	4 (13%) 2 1 2 4 7	9 (29%) 5 2 8 26 45	18 (58%) 3 2 3 10 46
e.	A long-term periodic instructional activity (e.g., internship, peer coaching)	N: 26 (38%) Mean: 6 Median: 3 SD: 8 Max.: 31 Total: 155	11 (42%) 3 3 3 10 36	8 (31%) 9 5 10 31 69	2 (8%) 12 12 3 14 24	13 (50%) 3 2 4 14 45

2. For the listed types of professional development activities **provided by your project/center**, write in the number of each type of participant who attended these activities. *Enter zero (0) in the space provided if activities had no participants in a particular category.*

(Percent values in the “Total Number of Participants” columns are based on the “Total Number” value reported for the corresponding row in item 1 above. For example, the row a N of 39 is 74% of 53, the number of projects and centers reporting for row a in item 1.)

Professional Development Activity		Total Number of Participants			
		Business/Industry or Organizations	Secondary Education Level	Associate Degree Level	Baccalaureate Degree Level
a.	Short presentations to raise awareness	N: 39 (74%) Mean: 252 Median: 48 SD: 727 Max.: 4,500 Total: 9,829	40 (75%) 181 75 267 1,200 7,243	40 (75%) 185 93 311 1,500 7,386	34 (64%) 65 28 97 400 2,194
b.	Instructional activities of less than a day (e.g., lecture, training session)	N: 20 (53%) Mean: 56 Median: 33 SD: 70 Max.: 234 Total: 1,120	30 (79%) 146 42 252 1,200 4,365	28 (74%) 196 75 409 2,120 5,490	24 (63%) 35 18 47 200 828

Professional Development Activity		Total Number of Participants			
		Business/Industry or Organizations	Secondary Education Level	Associate Degree Level	Baccalaureate Degree Level
c. Instructional activities that last one day to one week (e.g., workshop, online module)	N:	28 (50%)	42 (75%)	40 (71%)	35 (63%)
	Mean:	46	69	88	18
	Median:	14	25	31	12
	SD:	88	101	133	18
	Max.:	400	418	630	75
	Total:	1,290	2,910	3,520	634
d. Instructional activities that last from one to several weeks (e.g., course, summer institute)	N:	9 (29%)	25 (81%)	25 (81%)	15 (48%)
	Mean:	15	23	33	11
	Median:	20	14	20	4
	SD:	10	24	39	19
	Max.:	30	100	150	75
	Total:	139	565	819	166
e. A long-term periodic instructional activity (e.g., internship, peer coaching)	N:	8 (31%)	8 (31%)	15 (58%)	14 (54%)
	Mean:	14	10	21	5
	Median:	6	6	5	3
	SD:	17	7	40	5
	Max.:	53	20	150	14
	Total:	112	78	309	65

3. This question is about the impact of professional development activities. Please report the percentage of participants that actually implemented new materials or ideas after attending a professional development program. Your estimate for each response should be based on follow-up data your project/center collected. *If you did not collect data for a type of activity, enter NA.*

Professional Development Activity	Level of Outcome
	% of participants who implemented one or more of the new materials or ideas
a. Short presentations to provide awareness	38% (n=18)
b. Instructional activities of half-day or less (e.g., a lecture, training session)	55% (n=24)
c. Instructional activities that last one day to one week (e.g., workshop, online module)	70% (n=40)
d. Instructional activities that last from one to several weeks (e.g., a course, summer institute, etc.)	74% (n=28)
e. A long-term periodic instructional activity (e.g., internship, peer coaching)	70% (n=23)

4. For professional development activities **provided by your project/center**, please rank order the following purposes in terms of importance for your project/center's efforts. **1 = greatest importance; 5 = least importance. To exclude a purpose from the ranking, check "not a focus."**

Purpose of Professional Development	Importance (Rank 1-5 where 1=highest and 5=lowest)				
	1	2	3	4	5
a. Prepare participants to teach new courses or programs	16 (29%)	14 (25%)	8 (14%)	11 (20%)	7 (13%)
b. Update participants' knowledge and skills for specific equipment or technology used in business or industry (e.g., milling machine)	12 (20%)	16 (27%)	9 (15%)	15 (25%)	7 (12%)
c. Update participants' general technology knowledge and skills (continuous learning processes, future trends, etc.)	18 (29%)	8 (13%)	23 (37%)	10 (16%)	4 (6%)
d. Update participants' specific instructional knowledge and skills (learning new techniques to teach a course)	12 (20%)	16 (26%)	18 (30%)	12 (20%)	3 (5%)
e. Update participants' general instructional knowledge and skills (e.g., increase attention and sensitivity to diversity in the classroom and workplace, prepare faculty to manage team problem-solving situations)	4 (8%)	8 (16%)	6 (12%)	7 (14%)	24 (49%)

5. Did you evaluate the quality of your project/center's professional development program in 2007?

53 (82%) Yes (If YES, go to Question 6)
12 (19%) No (If NO, skip to the end of this section)

6. How many professional development activities were evaluated?

N 55
Mean 17
Median 4
SD 60
Max. 440
Total 917

If you evaluated more than one professional development activity, use your most comprehensive evaluation effort to answer Questions 7–9.

7. (a) Did you collect end-of-program participant reaction data (e.g., satisfaction, intent to use)?

51 (96%) Yes

2 (4%) No

- (b) If YES, indicate which of the following types of data you collected (check all that apply).
(Percentages based on N=51 from above)

49 (96%) Participants' opinions about the training.

47 (92%) Perceived value of new ideas, materials, or techniques for use in the participants' home institutions

40 (78%) Participant learning/achievement in the professional development program you provided

- (c) If you assessed participant learning/achievement, what method(s) did you use? (check all that apply) *(Percentages based on N=40 from above)*

40 (100%) Participants' self-assessment of how much they learned

19 (48%) Instructor-prepared hands-on or written assessments

6 (15%) Externally prepared exams (e.g., Microsoft certification exam)

8. (a) Did the evaluation include follow-up with participants to determine implementation or adoption of ideas?

40 (78%) Yes

11 (22%) No (If NO, go to Question 9.)

- (b) If YES, did you probe to learn about whether the participants implemented the ideas, materials, or techniques correctly?

30 (77%) Yes

9 (23%) No

- (c) If YES, did you probe to learn about any changes in their students' interest or achievement?

30 (81%) Yes

7 (19%) No

9. Did your evaluation obtain feedback from experts about the content and instruction of the professional development activities?

28 (48%) Yes

30 (52%) No

SECTION 6: PROGRAM IMPROVEMENT (N=53, 33%)

Complete this section if the funds your project/center allocated to program improvement activities in 2007 amounted to EITHER 30 percent or more of its direct costs OR at least \$100,000.

ATE program guidelines state that program improvement “activities should enhance a curriculum in multiple ways, producing a coherent sequence of classes, laboratories, and work-based educational experiences that revitalize the learning environment, course content, and experience of instruction for students preparing to be science and engineering technicians. The improved program leads students to an appropriate degree, certification, or occupational competency point and provides industry with a larger pool of skilled technicians.”

For purposes of this survey, a program is defined as a sequence of classes, laboratories and/or work-based experiences that lead students to a degree, certification, or an occupational competency point.

- For the year 2007, report the number of programs, institutions, courses, and students enrolled for each education level and on-the-job training that your project/center targeted with program improvement efforts. If a requested number is not applicable to your project/center situation, enter the letters NA for “not applicable.” *Complete each cell with either a number or NA (not applicable). Blank cells will be treated as zeros.*

		Education Level			On-the-Job Training/ Contract Training
		Secondary	Associate	Bacca- laureate	
a. Total number of ATE grant-funded programs developed and/or offered	N: Mean: Median: SD: Max.: Total:	16 5 1 9 33 73	41 7 2 11 44 287	10 2 1 3 10 22	6 7 3 7 19 39
b. Total number of separate courses offered across all ATE grant-funded programs. If a course appears in more than one program, count it only once	N: Mean: Median: SD: Max.: Total:	17 8 4 14 61 136	40 20 10 38 227 789	11 8 6 5 20 87	2 4 4 1 4 7
c. Total number of individual students who took at least 1 course in 1 of your ATE grant-funded programs. If students took more than 1 course, count them only once	N: Mean: Median: SD: Max.: Total:	21 525 100 955 3,000 11,024	44 1,098 103 2,755 16,000 48,312	12 1,930 63 6,196 21,600 23,162	5 190 80 232 559 948
d. Total number of institutions/businesses where the ATE grant-funded programs were offered	N: Mean: Median: SD: Max.: Total:	11 20 3 53 180 222	35 14 2 34 175 485	10 4 1 6 20 38	6 40 3 89 221 237

Section 6: Program Improvement

2. Based on the total number of students reported in item **1c** above, estimate the number of students in each of the following demographic categories across all of your ATE grant-funded programs at the levels indicated.

		Education Level			On-the-Job Training/ Contract Training
		Secondary	Associate	Bacca-laureate	
a. Male	N:	20	44	11	7
	Mean:	317	464	259	102
	Median:	63	69	30	26
	SD:	680	859	570	156
	Max.:	2,280	4,125	1,944	425
	Total:	6,338	20,407	2,854	711
b. Female	N:	20	43	10	5
	Mean:	77	310	240	48
	Median:	20	20	15	5
	SD:	131	791	675	63
	Max.:	450	4,000	2,160	134
	Total:	1,546	13,345	2,403	242
c. Hispanic/Latino	N:	14	31	8	5
	Mean:	74	116	24	8
	Median:	10	18	7	2
	SD:	154	207	29	10
	Max.:	536	865	80	25
	Total:	1,035	3,584	193	40
d. American Indian or Alaska Native	N:	4	12	0	0
	Mean:	4	10		
	Median:	5	4		
	SD:	2	15		
	Max.:	5	51		
	Total:	15	118		
e. Asian	N:	7	23	7	3
	Mean:	64	119	24	11
	Median:	15	10	8	15
	SD:	94	295	32	9
	Max.:	250	1,262	80	17
	Total:	451	2,727	171	33
f. Black or African American	N:	14	31	8	4
	Mean:	86	100	27	30
	Median:	10	15	8	4
	SD:	166	196	32	54
	Max.:	536	1,000	80	110
	Total:	1,202	3,107	213	118
g. Native Hawaiian or other Pacific Islander	N:	4	7	1	0
	Mean:	3	35	1	
	Median:	2	6	1	
	SD:	2	65	-	
	Max.:	5	177	1	
	Total:	10	248	1	
h. Multiracial	N:	4	15	5	1
	Mean:	78	84	12	89
	Median:	5	17	5	89
	SD:	148	104	11	-
	Max.:	300	237	27	89
	Total:	310	1,261	58	89

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i. White Non-Hispanic/Latino	N:	14	38	10	4
	Mean:	149	372	52	135
	Median:	40	40	26	101
	SD:	384	768	52	160
	Max.:	1,476	3,900	133	332
	Total:	2,084	14,127	518	538
j. Students requesting accommodation under the Americans with Disabilities Act	N:	4	9	3	0
	Mean:	13	25	6	
	Median:	9	5	5	
	SD:	13	55	6	
	Max.:	31	171	13	
	Total:	50	229	19	
k. Incumbent workers (i.e., individuals who were employed as technicians while enrolled in courses)	N:	2	20	3	3
	Mean:	84	156	57	142
	Median:	84	41	72	26
	SD:	71	337	33	220
	Max.:	134	1,500	80	396
	Total:	168	3,124	172	426

3. Estimate the number of applicants to all of your ATE-funded programs in 2007 that may be characterized according to each of the following categories.

Applicant Categories		Education Level			On-the-Job Training/ Contract Training
		Secondary	Associate	Bacca-laureate	
a. Number of applicants to our programs	N:	18	37	8	6
	Mean:	237	476	67	147
	Median:	70	57	30	18
	SD:	616	1,368	77	228
	Max.:	2,682	8,125	223	559
	Total:	4,264	17,616	538	881
b. Number of students who were accepted to our programs	N:	18	37	7	6
	Mean:	225	476	68	146
	Median:	70	50	25	17
	SD:	617	1,368	84	229
	Max.:	2,682	8,125	223	559
	Total:	4,052	17,623	475	873
c. Number of students whose applications were denied due to the students' lack of qualifications	N:	4	6	4	1
	Mean:	24	16	7	6
	Median:	20	5	6	6
	SD:	23	19	2	-
	Max.:	54	50	10	6
	Total:	96	94	27	6
d. Number of students whose applications were denied because space was not available in the program	N:	4	4	1	0
	Mean:	53	31	15	
	Median:	43	29	15	
	SD:	55	21	-	
	Max.:	125	57	15	
	Total:	212	122	15	

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e. Number of students who newly enrolled in our programs	N:	17	35	9	5
	Mean:	145	336	41	25
	Median:	108	40	21	7
	SD:	64	1,365	45	36
	Max.:	670	8,125	150	86
	Total:	1,831	11,754	368	124

4. Please estimate the number of students across all of your ATE-funded programs who met the respective student status definitions at each education level.

Student Status		Education Level			On-the-Job Training/ Contract Training
		Secondary	Associate	Baccalaureate	
a. Completed the specified program	N:	12	28	9	3
	Mean:	99	109	52	10
	Median:	52	40	21	4
	SD:	114	198	83	14
	Max.:	392	987	267	26
	Total:	1,193	3,060	470	31
1. Started or continued employment as a technician	N:	6	24	8	1
	Mean:	71	49	29	26
	Median:	23	21	19	26
	SD:	91	63	31	-
	Max.:	196	260	80	26
	Total:	428	1,183	229	26
2. Continued STEM education	N:	9	25	6	1
	Mean:	51	53	12	4
	Median:	30	15	9	4
	SD:	59	100	10	-
	Max.:	196	433	27	4
	Total:	459	1,329	74	4
3. Both continued STEM education AND started or continued technician employment	N:	1	12	2	0
	Mean:	6	28	2	
	Median:	6	8	2	
	SD:	-	40	1	
	Max.:	6	125	2	
	Total:	6	335	3	
4. Did not continue STEM education nor start or continue employment as a technician	N:	5	13	3	0
	Mean:	23	114	3	
	Median:	20	10	2	
	SD:	18	13	2	
	Max.:	46	50	5	
	Total:	114	187	8	

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b.	Left the program prior to completion (e.g., dropped out, changed majors, etc.)	N:	7	27	5	1
		Mean:	15	50	9	85
		Median:	11	15	8	85
		SD:	15	78	11	-
		Max.:	46	270	27	85
		Total:	105	1,352	47	85
1.	Started or continued employment as a technician	N:	3	16	3	0
		Mean:	149	60	27	
		Median:	10	19	3	
		SD:	248	78	42	
		Max.:	436	225	75	
		Total:	448	967	80	
2.	Continued STEM education	N:	3	15	3	1
		Mean:	62	37	44	4
		Median:	30	10	27	4
		SD:	78	70	50	-
		Max.:	150	279	100	4
		Total:	185	548	132	4
3.	Both continued STEM education AND started or continued technician employment	N:	0	7	1	0
		Mean:		10	30	
		Median:		5	30	
		SD:		12	-	
		Max.:		32	30	
		Total:		73	30	
4.	Did not continue STEM education or start or continue employment as a technician	N:	3	9	1	0
		Mean:	11	13	1	
		Median:	11	5	1	
		SD:	9	17	-	
		Max.:	20	54	1	
		Total:	34	116	1	
c.	Students remaining in the program (i.e., did not complete or leave the program)	N:	11	31	5	2
		Mean:	262	339	80	99
		Median:	100	74	30	99
		SD:	581	774	85	130
		Max.:	2,000	4,123	204	191
		Total:	2,883	10,502	398	198

5. For 2007, estimate the **percentage** of students across all of your ATE-funded programs in each of the following categories. **(Mean reported percentages based on N respondents for each line item.)**

	Education Level			On-the-Job Training/ Contract Training %
	Secondary %	Associate %	Baccalaureate %	
a. Full- or part-time students <u>not</u> employed as technicians at the same time they are taking coursework	90% (n=17)	66% (n=39)	66% (n=12)	46% (n=5)
b. Incumbent workers (i.e., individuals who were employed as technicians while enrolled)	21% (n=3)	29% (n=29)	21% (n=8)	88% (n=2)
c. Employed as technician prior to enrollment	5% (n=1)	20% (n=28)	19% (n=7)	88% (n=2)

6. Were your project/center's program improvement activities evaluated in 2007?

35 (73%) Yes (If YES, go to Question 7.)

13 (27%) No (If NO, skip to the end of this section.)

7. Below is a list of sources of potential evaluation information. Please rate the usefulness of the evaluation information that your project gathered.

Potential Evaluation Information		Data We Gathered	Degree of Usefulness			
		Check (✓) those that apply	Not Useful	Somewhat Useful	Useful	Very Useful
a.	Course-level student satisfaction data	39	-	4 (13%)	14 (44%)	14 (44%)
b.	End-of-program student satisfaction data	16	-	-	6 (38%)	19 (63%)
c.	Student course grades	26	-	4 (15%)	14 (54%)	8 (31%)
d.	Data regarding student dropout rates	23	-	2 (9%)	12 (52%)	9 (39%)
e.	Data on student or industry referrals to the program	7	-	1 (14%)	2 (29%)	4 (57%)
f.	Postprogram follow-up data from students (e.g., employment status, preparedness for industry)	16	-	2 (13%)	6 (38%)	8 (50%)
g.	Postprogram follow-up data from supervisors of students (e.g., students' skills, knowledge, preparedness for industry)	8	-	1 (13%)	2 (25%)	5 (63%)
h.	Testing of students' knowledge and skills against established business/industry work standards	12	-	-	5 (42%)	7 (58%)
i.	Comparison of students' knowledge and skills against other critical competitors (e.g., personnel from other colleges or military programs or other course options)	5	-	-	2 (40%)	3 (60%)
j.	Faculty feedback on course and program implementation	27	-	1 (4%)	11 (41%)	15 (56%)
k.	Course records/logs (syllabi, content taught, sample assignments, etc.)	27	-	2 (7%)	12 (44%)	13 (48%)
l.	Feedback from instructional experts regarding content and instruction of courses and program (e.g., comparisons of program content and instruction against critical competitors)	20	-	1 (5%)	8 (40%)	11 (55%)
m.	Feedback from companies that employ your students and graduates	18	-	1 (6%)	1 (6%)	16 (89%)
n.	Expert panel review of program and/or products	14	-	-	5 (36%)	9 (64%)
o.	Other (describe): LAB Advisory Committee Input Pre-post tests CCDC feedback; student satisfaction/impactsurvey during program	3	-	-	1 (33%)	2 (67%)