This document is for review purposes only—the survey is conducted online.

EvaluATE ATE Survey 2017

This annual survey of the National Science Foundation's Advanced Technological Education program grantees is used to obtain information about the program's characteristics, activities, and impacts. The findings may be used by (1) NSF program staff to prepare their annual reports and make program decisions, (2) ATE grantees to help them gauge their performance in relation to the overall program, and (3) researchers investigating issues related to technician education.

Some of the data collected from this survey will be shared in selected ways to further ATE collaboration and research efforts. We encourage you to review the Survey FAQs at http://www.evalu-ate.org/annual_survey/survey-info/ for details about data protections and uses.

The survey will be open from February 21 through March 20, 2017. We recommend that you review this document before responding to the online version so that you will have all the necessary information at hand to answer the questions. The survey is web-based; access information will be e-mailed to principal investigators at the start of the survey period.

Additional information about the survey is available at http://www.evalu-ate.org/annual_survey/survey-info/. Questions should be directed to Miranda Lee at (269) 387-5913 or miranda.lee@wmich.edu

Thank you for participating in this survey.

General Instructions

1. **SAVING:** Your responses are automatically saved as you complete the web version of the survey. If you wish to leave the survey and continue later, simply close your browser.
2. **NAVIGATION of Web Survey:** Use the red "BACKWARD" and "FORWARD" buttons at the bottom of each survey page to move throughout the survey. DO NOT use your browser's navigation features.
3. **ANSWERING questions:** If you do not have the information necessary to answer question or if a question is not applicable to your work, skip the question.
4. **COMPLETING/SUBMITTING the survey:** Once you have answered all the survey questions that pertain to your grant, proceed to the end of the survey and click the "SUBMIT" button. This action submits your survey and you will not be able to reenter the survey – if you need to do so, contact miranda.lee@wmich.edu.
5. **TIMEFRAME:** Your responses should address the calendar year: **January 1–December 31, 2016**.
6. **SECTIONS:** Section 1 is required for all respondents, including grantees in their first year. This section is about grantee characteristics, organizational practices, evaluation, and collaboration.

   Sections 2-4 are about materials development, professional development, and program improvement, respectively. At the start of each of these sections, you are asked to indicate whether your grant activities in that area met a certain threshold (i.e., if in the target year you allocated EITHER 30 percent or more of your project/center's direct costs OR at least $100,000 to the activity in question) or whether you do not meet the threshold, but want to report on that aspect of your work anyway.

   Section 5 includes questions that are being asked on a one-time basis. We ask that all respondents complete this brief section.

Section 1: Grantee Characteristics and Practices

1.1.   What type of award is your ATE grant?
Project
- ○ Program development and improvement
- ○ Curriculum and educational materials development
- ○ Professional development for educators
- ○ Leadership capacity building for faculty
- ○ Teacher preparation
- ○ Business and entrepreneurial skills development for students
- ○ Small grant for institutions new to the ATE program
- ○ Conference or workshop
- ○ Coordination network
- ○ Other _____

Center
- ○ National center
- ○ Regional center
- ○ Support center
- ○ Other _____

Targeted Research on Technician Education
- ○ Planning project
- ○ Exploratory research and development
- ○ Full-scale research and development
- ○ Other _____

Other type of award
- ○ Describe _____

1.2.   Was 2016 the first year of your current grant?
- ○ Yes
- ○ No

1.3.   Is your current grant a continuation of a previous ATE project/center?
- ○ Yes
- ○ No

1.4.   Does your grant have a co-PI(s)?
- ○ Yes
- ○ No

1.4.1. Co-PI name(s) and email address(es):

Co-PI _____

Email address _____

1.5a. Who is completing the survey this year?

○ PI

○ Designated contact (name and email address) _____

1.5. Which of the following is the grantee institution?

○ 4-year college/university

○ 2-year college or 2-year college system

○ K-12 school or school system

○ Nonprofit organization

○ Other (describe): _____

1.6. Project/center website: http:// _____

1.7. Total award amount: $ _____

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

Advanced Manufacturing Technologies
- ○ Automotive manufacturing
- ○ General manufacturing
- ○ Additive manufacturing

Agricultural and Environmental Technologies
- ○ Agricultural and natural resources
- ○ Energy production
- ○ Energy use (or conservation)

Bio and Chemical Technologies
- ○ Biotechnology
- ○ Chemical processes

Engineering Technologies
- ○ Optics
- ○ Electronics and controls
- ○ Marine technologies
- ○ Space technologies

Information and Security Technologies
- ○ Information and communications technologies
- ○ Geospatial technologies
- ○ Security, information assurance, and forensics

Micro and Nanotechnologies
- ○ Micro and nanotechnologies

General Advanced Technological Education
- ○ Evaluation
- ○ Research
- ○ Learning

Other
- ○ Other (specify):_____

In order to better understand the composition of the ATE community, the next few questions ask about the demographic characteristics of ATE principal investigators. If you prefer not to share this information, you may skip these questions.

1.9. What is your ethnic identity?
- ○ Hispanic or Latino/Latina
- ○ Non-Hispanic, non-Latino/Latina

1.9.1. What is your racial identity?
- ○ American Indian or Alaska Native
- ○ Asian
- ○ Black or African American
- ○ Native Hawaiian or other Pacific Islander
- ○ Multiracial
- ○ White
- ○ Other _____

1.10. What is your gender identity?
- ○ Male
- ○ Female
- ○ Identity not listed

1.11. What is your age?
- ○ Under 25 years
- ○ 25-34 years
- ○ 35-44 years
- ○ 45-54 years
- ○ 55-64 years
- ○ 65 years or older

ATE-Supported Instruction

1.12. Did you project/center support the provision of science, technology, engineering, or mathematics instruction in 2016?
- ○ Yes
- ○ No

1.13. Report the number of locations were your ATE-supported programs were offered in 2016. If you conducted contract training, report the numbers for those students separately. Do not include contract training numbers in the education-level figures.

	Type of Students in Program				Contract Training
	Secondary School	2-Year College	4-Year College	Post Baccalaureate	
Total number of locations where the ATE-supported programs were offered					

The following questions are about the number of students from different demographic categories who took at least 1 course in 1 of your ATE-supported programs (if a student took more than 1 course, count that person only once within each table). Do not include contract training numbers in the education-level figures.

1.14. Report the number of students from each gender category by education level.

	Education Level of Participating Students				Contract Training
	Secondary School	2-Year College	4-Year College	Post Baccalaureate	
a. Male					
b. Female					
c. Unknown					

1.15. Report the number of students from each ethnic category by education level.

	Education Level of Participating Students				Contract Training
	Secondary School	2-Year College	4-Year College	Post Baccalaureate	
a. Hispanic or Latino/Latina					
b. Non-Hispanic or Latino/Latina					
c. Unknown					

1.16.   Report the number of students from each race category by education level.

	Education Level of Participating Students				Contract Training
	Secondary School	2-Year College	4-Year College	Post Baccalaureate	
a. American Indian or Alaska Native					
b. Asian					
c. Black or African American					
d. Native Hawaiian or other Pacific Islander					
e. Multiracial					
f. White					
g. Unknown					

1.17.   How many students requested accommodation under the Americans with Disabilities Act?

_____

1.18   Did your ATE grant support a degree or certification program in 2016?
   ○   Yes
   ○   No (if NO go to question 1.20)

1.19   Indicate the number of students across all of your **ATE-funded degree or certification programs** who met the following conditions in 2016.

Student Status	Education Level of Students			
	Secondary School	2-Year College	4-Year College	Post Baccalaureate
a. Completed the specified program				
b. Left the program prior to completion and is not expected to return to complete (e.g., dropped out, changed majors)				
c. Students remaining in the program (i.e., did not complete or leave the program in 2016).				

Articulation Agreements

Articulation agreements are defined as specific agreements between two or more institutions 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 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 enrolled simultaneously at both institutions.

1.20.   Was developing articulation agreements ever part of your project/center activities?
- ○ Yes
- ○ No

1.21.	Report the number of articulation agreements, institutions, and students associated with each education level.		
		Education Level	
		High school to 2-year college	2-year college to 4-year college
a.	Total number of articulation agreements <u>developed</u> in 2016		
b.	Total number of articulation agreements <u>in place</u> in 2016 (sequential and concurrent)		
c.	Number of <u>institutions</u> involved in all the agreements		
d.	Number of <u>students</u> that matriculated in 2016 (enrolled at the higher education level under the terms of an articulation agreement)		

Evaluation

1.22.   Do you have a current, written evaluation plan for your project/center?
- ○ Yes
- ○ No

1.23.   If you have any information related to the evaluation of your grant online (e.g., plans, instruments, reports), please provide the URL where they can be located:
http://_____

1.24.　　Did your project/center have an evaluator in 2016?
　　　　○　Yes
　　　　○　No

1.25.　　Select the type of evaluator(s) your project/center had in 2016.
　　　　○　External evaluator
　　　　○　Internal evaluator (i.e., is a member of your staff)
　　　　○　Both internal and external evaluators

1.25.1.　Your evaluator's name and organizational affiliation (e.g., Jane Smith, Western Michigan University):

_____

1.25.2.　Your evaluator's email address:

_____

1.25.3.　EvaluATE is working with ATE Central to make information about ATE evaluators available on the ATE Central website (www.atecentral.net). *If the evaluator you named above approves,* may we identify him or her as your evaluator on the ATE Central website along with other information about your ATE project or center?
　　　　○　Yes
　　　　○　No

1.26.　　What type of report did you receive from your evaluator in 2016?
　　　　○　Written
　　　　○　Oral
　　　　○　Both oral and written
　　　　○　None (skip to question 1.27)

1.26.1.　How has your project/center used the information provided in the evaluation report(s)? (check all that apply)
　　　　☐　To make changes in our activities
　　　　☐　To make changes in our goals
　　　　☐　For marketing our work
　　　　☐　To gauge impact
　　　　☐　To inform stakeholders (e.g., partners, industry, advisory board, NSF)

1.27. How frequently did your <u>external evaluator</u> interact with your staff (e.g., email, teleconferences, face-to-face) in 2016?
- ○ Rarely (annually or semiannually)
- ○ Infrequently (not every month but at least quarterly)
- ○ Occasionally (more often than quarterly and as much as monthly)
- ○ Often (more often than monthly and as much as biweekly)
- ○ Continually (very nearly weekly, weekly, or more often)

Collaboration

Collaboration is a relationship with another institution, business, or group that provides money or other support (e.g., volunteer instruction, donated materials) to your project or center. Collaborators are not funded by the grant.

1.28. For each type of collaborating organization listed below, report the number of different organizations you collaborated with in 2016.

_____ Business/industry

_____ Within your host institution (e.g., other department or administrative unit)

_____ Other education institutions

_____ Public agencies (e.g., government agencies)

_____ Other ATE projects/centers

_____ Other (specify): _____

1.29. Report the total dollar value of monetary and in-kind support received by your project/center from all sources <u>other</u> than your ATE award in 2016 (round to the nearest thousand dollars).

a. Monetary support $ _____

b. In-kind support $ _____

1.30. For each type of collaborating organization listed below, check up to two options that best describe the main benefits to your project/center in 2016. *Each underline column underline should not have more than two checked benefits*.

Type of Benefit	Type of Collaborating Organization				
	Business/ Industry	Within Your Host Institution	Other Education Institution	Public Agency	Other ATE Grantee
a. General support	☐	☐	☐	☐	☐
b. Financial or in-kind support	☐	☐	☐	☐	☐
c. Developing program content	☐	☐	☐	☐	☐
d. Facilitating service delivery	☐	☐	☐	☐	☐
e. Access to decision makers	☐	☐	☐	☐	☐
f. Information about workforce needs	☐	☐	☐	☐	☐
g. Developing articulation agreements	☐	☐	☐	☐	☐
h. Student support	☐	☐	☐	☐	☐
i. Other (describe):	☐	☐	☐	☐	☐

Section 2: Materials Development

This section of the survey focuses strictly on materials developed for national dissemination to serve instructional purposes (it does not include project/center promotional materials).

All respondents are asked to complete at least the first question in this section—a determiner of who should complete the full section.

2.1.   Did your project/center allocate at least 30 percent of its direct costs **OR** at least $100,000 to instructional materials development in 2016?
   ○   Yes (Complete this section)
   ○   No, BUT we consider it a significant area of our activity, and we want to report our work. (Complete this section)
   ○   No (You are now finished with this section)

Materials addressed here are the media (textbooks, laboratory experiments and manuals, software, online materials, CD-ROMs, videos, or other courseware) used to convey the content and instruction of activities, modules, and courses.

DEFINITIONS
Course: A stand-alone collection of instructional content and activities to achieve 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.

2.2.   How many of each of the following types of materials did you develop in 2016? Report only materials that were *completed*.

_____Courses	
_____Modules	
_____Activities	

2.3.   Of the materials completed in 2016, how many were targeted to each of the following audience types?

	Secondary school students	2-year college students	4-year college students	Incumbent workers	Other
a. Courses					
b. Modules					
c. Activities					

2.4.   For the materials you completed in 2016, which of the following best describes their availability?
- ○   Not available to anyone outside the project
- ○   Available upon request
- ○   Available only to a select group
- ○   Publicly available on the internet
- ○   It depends on the type of material (Explain) _____

Section 3: Professional Development for Educators

This section addresses professional development provided to secondary school teachers, college faculty, and preservice teachers to enhance their disciplinary capabilities, teaching skills, understanding of current technologies and practices, and 21st century skills in ways that will directly impact technician education.

All respondents are asked to complete at least the first question in this section—a determiner of who should complete the full section.

3.1. Did your project/center allocate at least 30 percent of its direct costs **OR** at least $100,000 to professional development in 2016?
  ○ Yes (Complete this section)
  ○ No, BUT we consider it a significant area of our activity, and we want to report our work. (Complete this section)
  ○ No (You are now finished with this section)

Questions 3.2 and 3.3 ask about the number of different types of professional development activities offered by your project/center and the number of participants in those activities. If your project/center did not offer the activity in question, put a zero (0) in the space provided.

3.2. Report the number of professional development activities of each length listed below that were offered by your project in 2016.

Type of Professional Development Activity	Total Number of Activities Offered
a. Short presentations to raise awareness	
b. Instructional activities of less than a day (e.g., lecture, training session)	
c. Instructional activities that last one day or more, but less than one week (e.g., workshop, online module)	
d. Instructional activities that last from one to several weeks (e.g., course, summer institute)	
e. Long-term periodic instructional activities (e.g., internship, peer coaching)	

3.3. Report the number of participants in your 2016 professional development activities who taught at each education level.

Professional Development Activity	Number of Participants			
	Secondary School	2-Year College	4-Year College	Other or Unknown
a. Short presentations to raise awareness				
b. Instructional activities of less than a day (e.g., lecture, training session)				
c. Instructional activities that last one day or more, but less than one week (e.g., workshop, online module)				
d. Instructional activities that last from one to several weeks (e.g., course, summer institute)				
e. Long-term periodic instructional activities (e.g., internship, peer coaching)				

Section 4: Program Improvement

This section addresses the development or improvement of technician education programs for secondary students, college students, or persons employed as technicians.

All respondents are asked to complete at least the first question in this section—a determiner of who should complete the full section.

DEFINITION

Program: A sequence of classes, laboratories, and/or work-based experiences that lead students to a degree, certification, or an occupational competency point.

4.1. Did your project/center allocate at least 30 percent of its direct costs **OR** at least $100,000 to program improvement in 2016?
  ○ Yes (Complete Question 4.2)
  ○ No, BUT we consider it a significant area of our activity, and we want to report our work. (Complete Question 4.2)
  ○ No (You are now finished with this section)

4.2. Report the number of programs and courses for each education level and on-the-job training included in your program improvement work in 2016.

  If you conducted contract training, report the numbers for those students separately. Do not include contract training numbers in the education-level figures.

	Education Level				On-the-Job Training/ Contract Training
	Secondary School	2-Year College	4-Year College	Post Baccalaureate	
a. Total number of programs supported by your ATE grant in 2016 (including programs developed in previous years)					
b. Total number of ATE grant-funded programs developed or modified in 2016					
c. Total number of separate courses developed or modified in 2016 with ATE support (if a course appears in more than one program, count it only once)					

Section 5: Special Topics

This section of the annual ATE survey addresses research and emerging topics of interest to NSF program officers, ATE researchers, and other ATE projects/centers. All respondents are asked to complete this section.

Industry Partnerships

5.1. In which of the following ways did your project/center partner with industry in 2016? Select only those models that reflect measureable activity as you will be asked a short set of follow-up questions for each model selected.

- ☐ **Advisory Board**: Industry professional serves as board member, usually for a set term. Board provides expertise, information and guidance to develop, sustain, and improve upon program, project or center efforts.

- ☐ **Curricular Development/Review**: Industry professional provides occupational expertise to assist with program, course, and/or outcomes development and review.

- ☐ **Workplace-Based Learning (WBL):** Industry partner provides on-site opportunity for student applied learning, paid or unpaid, frequently with employment potential, often integrated with coursework. Examples include internships, apprenticeships, co-op learning.

- ☐ **Faculty Professional Development:** Industry partner provides educators with occupational and industry experience and training. Examples include externships, mentoring, equipment access, demonstrations.

- ☐ **Instructional Support:** Industry partner provides support/resources for instruction-related components of program. Examples include providing guest lectures or demonstrations, classroom teaching, serving as panelists/judges, conducting site tours.

- ☐ **Program Support:** Industry partner provides support/resources for program sustainability or enhancement. Examples include financial support, equipment donation, recruitment, marketing assistance.

- ☐ **Sponsored Research:** Industry partner provides topic and resources/support for research conducted at educational institution and receives results/findings in return.

- ☐ **Business Incubation/Entrepreneurship:** Educational program partners with industry to foster and grow student or industry economic development opportunities. Examples include maker spaces, entrepreneurship competitions.

- ☐ **None of the Above (skip to question 5.44)**

[Respondents will receive additional question based on the type of industry partnerships selected above.]

Industry professional serves as board member, usually for a set term. Board provides expertise, information and guidance to develop, sustain, and improve upon program, project or center efforts.

5.2. **Challenges:** When partnering with industry to recruit and maintain an **advisory board**, how challenging were each of the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Involving the right mix of industry members for your project/center's needs	◯	◯	◯	◯	◯
b. Engaging industry members to obtain deep, meaningful feedback	◯	◯	◯	◯	◯
c. Scheduling meetings when all industry members can participate	◯	◯	◯	◯	◯
d. Finding/allocating time and resources to build and sustain industry relationships	◯	◯	◯	◯	◯
e. Overcoming industry misconceptions of two-year programs	◯	◯	◯	◯	◯
f. Other challenges (describe) _____	◯	◯	◯	◯	◯

5.3. **Impacts:** Which of the following impacts related to recruiting and maintaining a successful **advisory board** have resulted from your partnership with industry? Select all that apply.
☐ Maintained or improved project, center, or program currency and relevancy
☐ Established or improved alignment of curricula with industry needs
☐ Promotion of project, center, or program by industry board members
☐ Provided opportunities for students (mentoring, internships, job placement)
☐ Obtained direct or in-kind program support (financial, equipment)
☐ Received support in recruiting new industry members or growing board industry membership
☐ Other impacts (describe) _____

5.4. **Implementation**: How important are the following practices when partnering with industry to implement a successful **advisory board**?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Ensuring that industry members understand benefits of board participation	○	○	○	○	○
b. Setting clear expectations for industry board members	○	○	○	○	○
c. Being respectful of members' time (efficient meetings, detailed requests, etc.)	○	○	○	○	○
d. Communicating and meeting with board members regularly	○	○	○	○	○
e. Providing various methods for meeting (in-person, web, conference call)	○	○	○	○	○
f. Ensuring the board is diverse in multiple ways (geographically, disciplinarily, etc.)	○	○	○	○	○
g. Providing opportunities for industry board members to interact with students	○	○	○	○	○
h. Other important implementation practices (describe) _____	○	○	○	○	○

5.5. Additional comments about your project/center's experience with industry-related **advisory boards**:

CURRICULAR DEVELOPMENT/REVIEW					

Industry professional provides occupational expertise to assist with program, course, and/or outcomes development and review.

5.6. **Challenges**: In partnering with industry to provide **curricular development or review**, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Recruiting industry experts with relevant experience, expertise, and knowledge	O	O	O	O	O
b. Managing industry experts' expectations around timing and implementation of curricula	O	O	O	O	O
c. Ensuring that industry expert feedback is accurately captured in the resulting curricula	O	O	O	O	O
d. Finding qualified industry experts able/willing to donate their time	O	O	O	O	O
e. Handling logistical issues (including travel time, costs related to meeting)	O	O	O	O	O
f. Other challenges (describe) _____	O	O	O	O	O

5.7. **Impacts:** Which of the following impacts related to **curricular development or review** have resulted from your partnership with industry? Select all that apply.
- ☐ Established industry-informed and aligned curriculum
- ☐ Maintained curriculum currency through regular/annual reviews
- ☐ Provided with real-world problems or challenges for courses from industry experts
- ☐ Deepened relationships with industry
- ☐ Shortened pathway to employment/increased access to skilled workers
- ☐ Recruited industry experts for on-going involvement with project, center or program
- ☐ Other impacts (describe) _____

5.8. **Implementation:** How important are the following practices when partnering with industry to implement successful **curricular development or review**?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Being respectful of industry experts' time	○	○	○	○	○
b. Communicating specific expectations when approaching industry experts	○	○	○	○	○
c. Demonstrating to industry experts their return on investment for assisting with curricular development and/or review	○	○	○	○	○
d. Recruiting industry experts from a variety of sources: advisory boards, professional organizations, local businesses, entry-level technicians, etc.	○	○	○	○	○
e. Providing food and beverages	○	○	○	○	○
f. Bringing in a trained, professional facilitator(s)	○	○	○	○	○
g. Using feedback loops to verify industry experts' input	○	○	○	○	○
h. Other important implementation practices (describe) _____	○	○	○	○	○

5.9. Additional comments about your project/center's experience with industry-related **curriculum development and review**:

Industry partner provides on-site opportunity for student applied learning, paid or unpaid, frequently with employment potential, often integrated with coursework. Examples include internships, apprenticeships, co-op learning.

5.10. **Challenges**: In partnering with industry to provide **workplace-based learning** opportunities for students, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Finding/allocating resources to support industry involvement in WBL (student matching, providing access to forms and reports, visiting sites, etc.)	○	○	○	○	○
b. Lack of local industry partners	○	○	○	○	○
c. Lack of WBL coordinator/ administrator at educational institution	○	○	○	○	○
d. Recruiting appropriately skilled students that fulfill industry needs	○	○	○	○	○
e. Arranging for academic credit within educational institution	○	○	○	○	○
f. Maintaining student opportunities database or list	○	○	○	○	○
g. Other challenges (describe) _____	○	○	○	○	○

5.11. **Impacts:** Which of the following impacts related to providing **workplace-based learning** opportunities for students have resulted from your partnership with industry? Select all that apply.
- ☐ Increased employment opportunities for students
- ☐ Graduates are better prepared to transition into workplace
- ☐ Provided applied, real world learning for students
- ☐ Provided tuition reduction for students, in part or full
- ☐ Both student and industry get to see if work environment is a good fit
- ☐ Developed closer and more meaningful ties with industry
- ☐ Participant feedback can inform gaps in curriculum
- ☐ Other impacts (describe)

5.12. **Implementation:** How important are the following practices when partnering with industry to implement successful **workplace-based (WBL)** opportunities for students?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Utilizing a coordinator to manage program, seek out and maintain workplace-based learning (WBL) opportunities	O	O	O	O	O
b. Working with stakeholders to identify WBL opportunities (faculty, industry associations, advisory board, alumni)	O	O	O	O	O
c. Collaborating with industry to develop WBL programs that meet industry needs	O	O	O	O	O
d. Defining and communicating explicit learning goals and expectations to WBL hosts	O	O	O	O	O
e. Screening and revisiting industry sites periodically to ensure appropriateness and safety	O	O	O	O	O
f. Maintaining student WBL opportunity job board, list, or database	O	O	O	O	O
g. Other important implementation practices (describe) _____	O	O	O	O	O

5.13. How many hours per week – on average – do students serve in the **workplace-based learning** opportunities that have resulted from your industry partnerships?
- O 30-40 hours per week
- O 15-29 hours per week
- O Less than 15 hours per week
- O Other (describe)

5.14. Do the majority of students engaging in **workplace-based learning** also attend classes?
- O Yes, they take classes that support the work they are doing at their work sites.
- O Yes, but the classes are not tied to their WBL.
- O No, students do not take classes while engaged in WBL.
- O Other (describe) _____

5.15. What do the majority of students who are engaged in **workplace-based learning** receive in terms of compensation? Select all that apply.
- ☐ Students receive no compensation
- ☐ Students receive compensation in the form of tuition or other indirect education-related support
- ☐ Students receive direct compensation as wages
- ☐ Other (describe) _____

5.16. Is **workplace-based learning required** for completion of degree or certificate?
- ○ Yes, by the educational institution or program
- ○ Yes, by industry certification organization
- ○ No
- ○ Other (describe) _____

5.17. What is the PRIMARY term your project/center uses to describe the **workplace-based learning** opportunities that result from your industry partnerships?
- ○ Co-operative learning
- ○ Internships
- ○ Apprenticeships
- ○ We use the above terms interchangeably
- ○ We administer multiple, distinct WBL programs (describe) _____
- ○ Other (describe) _____

5.18. Additional comments about your project/center's experience with industry-related **workplace-based learning**:

FACULTY PROFESSIONAL DEVELOPMENT

Industry partner provides educators with occupational and industry experience and training. Examples include externships, mentoring, equipment access, or demonstrations.

5.19. How do your industry partners support your project/center's **faculty professional development** efforts? Select all that apply.
- ☐ Provide faculty with workplace-based learning opportunities (externship/internship, co-employment)
- ☐ Provide faculty with direct exposure to workforce (job shadow, mentoring)
- ☐ Host guided site tours for faculty
- ☐ Provide access to, or payment for, professional training for faculty
- ☐ Provide faculty access to specialized equipment/tools
- ☐ Offer demonstrations, lectures or other instruction to faculty
- ☐ Other (describe) _____

5.20. **Challenges**: In partnering with industry to provide **faculty professional development**, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Finding and securing partners, opportunities, or sites for faculty development	O	O	O	O	O
b. Facilitating a good match between faculty and industry partner	O	O	O	O	O
c. Ensuring faculty receive credit for participation	O	O	O	O	O
d. Locating/allocating resources for coordinating logistics	O	O	O	O	O
e. Budgeting for fees, stipends	O	O	O	O	O
f. Navigating institutional requirements for licensing, liability insurance, etc.	O	O	O	O	O
g. Other challenges (describe) _____	O	O	O	O	O

5.21. **Impacts:** Which of the following impacts related to **faculty professional development** have resulted from your partnership with industry? Select all that apply.
- ☐ Updated faculty knowledge of industry practices, trends
- ☐ Addressed specific faculty skill gap(s) by providing additional training
- ☐ Provided faculty access to equipment, tools
- ☐ Connected industry and faculty
- ☐ Improved course and curriculum relevance
- ☐ Other impacts (describe)

5.22. **Implementation**: How important are the following practices when partnering with industry to implement successful **faculty professional development**?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Ensuring alignment of faculty and industry interests, areas of concentration	O	O	O	O	O
b. Providing support for faculty participation with industry (orientations, forms, etc.)	O	O	O	O	O
c. Providing clear expectations, goals for faculty-industry interactions	O	O	O	O	O

	Not important	Minimally important	Moderately important	Very important	Not applicable
d. Utilizing advisory board, industry contacts to generate faculty professional development opportunities	O	O	O	O	O
e. Navigating institutional requirements on behalf of faculty and industry partners	O	O	O	O	O
f. Other important implementation practices (describe)_____	O	O	O	O	O

5.23. Additional comments about your project/center's experience with industry-related **faculty professional development**:

INSTRUCTIONAL SUPPORT

Industry partner provides support/resources for instruction-related components of program. Examples include providing guest lectures or demonstrations, classroom teaching, serving as panelists/judges, conducting site tours.

5.24. How do your industry partners provide **instructional support**? Select all that apply.
- ☐ Provide guest lectures or demonstrations
- ☐ Teach some of our courses
- ☐ Assist with student evaluation (panelists, judges, testing, etc.)
- ☐ Contribute to educational materials (videos, cases, etc.)
- ☐ Provide guided tours of facilities
- ☐ Other (describe) _____

5.25. **Challenges**: In partnering with industry to provide **instructional support**, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Preparing industry members to effectively interact with students	O	O	O	O	O
b. Finding and securing the right partners or sites	O	O	O	O	O
c. Finding time and resources for coordinating logistics	O	O	O	O	O
d. Navigating institutional requirements for licensing, liability insurance, etc.	O	O	O	O	O

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
e. Sustaining ongoing opportunities for instructional support	○	○	○	○	○
f. Budgeting for fees, stipends	○	○	○	○	○
g. Other challenges (describe) _____					

5.26. **Impacts:** Which of the following impacts related to **instructional support** have resulted from your partnership with industry? Select all that apply.
- ☐ Provided students with current, industry-informed instruction
- ☐ Increased student exposure to workplace settings
- ☐ Provided feedback on student performance directly from industry
- ☐ Created industry-informed educational materials
- ☐ Expanded student awareness of industry trends and expectations
- ☐ Deepened ties with industry
- ☐ Other impacts (describe) _____

5.27. **Implementation:** How important are the following practices when partnering with industry for the purposes of **instructional support**?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Securing resources for building and sustaining instructional support from industry partners	○	○	○	○	○
b. Being specific and detailed when making requests of industry	○	○	○	○	○
c. Navigating institutional requirements on behalf of industry partners	○	○	○	○	○
d. Preparing industry members for teaching, student interaction	○	○	○	○	○
e. Facilitating connections between faculty and industry partners	○	○	○	○	○
f. Providing clear educational goals for industry-student interactions	○	○	○	○	○
g. Other important implementation practices (describe) _____	○	○	○	○	○

5.28. Additional comments about your project/center's experience with industry-related **instructional support**:

PROGRAM SUPPORT

Industry partner provides support/resources for program sustainability or enhancement. Examples include financial support, equipment donation, recruitment, marketing assistance.

5.29. How do your industry partners provide **program support**? Select all that apply.
- ☐ Provide direct funding
- ☐ Donate equipment, goods, supplies
- ☐ Fund faculty or staff position(s)
- ☐ Provide sponsorship of student scholarships, conference attendance and/or travel
- ☐ Participate in student recruitment efforts
- ☐ Represent program at industry events
- ☐ Facilitate donations from other industry members
- ☐ Other (describe) _____

5.30. **Challenges**: In partnering with industry to provide **program support**, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Creating and maintaining relationships with industry	○	○	○	○	○
b. Increasing industry awareness of program needs	○	○	○	○	○
c. Finding/allocating resources for coordinating donation logistics	○	○	○	○	○
d. Understanding and following institutional procedures for processing support	○	○	○	○	○
e. Ensuring industry partners accurately represent program to other entities	○	○	○	○	○
f. Other challenges (describe) ___	○	○	○	○	○

5.31. **Impacts**: Which of the following impacts related to **program support** have resulted from partnerships with industry? Select all that apply.
- ☐ Improved availability of equipment, goods, materials for student use
- ☐ Increased general program funds
- ☐ Increased funding for staffing
- ☐ Increased funding for students
- ☐ Deepened relationship with industry
- ☐ Improved recruitment efforts by including industry representation
- ☐ Greater industry awareness of program, program needs
- ☐ Other impacts _____

5.32. **Implementation:** How important are the following practices when partnering with industry to implement successful **program support**:

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Soliciting industry input to inform program support requests	O	O	O	O	O
b. Hosting and/or attending industry events to cultivate program awareness, support	O	O	O	O	O
c. Communicating program needs and calls for support to industry partners	O	O	O	O	O
d. Inviting industry into classrooms/labs to increase awareness of program and its needs	O	O	O	O	O
e. Soliciting assistance from alums when seeking program support, donations	O	O	O	O	O
f. Hiring a program manager who can build and sustain relationships with industry	O	O	O	O	O
g. Other important implementation practices (describe) _____	O	O	O	O	O

5.33. Additional comments about your project/center's experience with industry-related **program support**:

Industry partner provides topic and resources/support for research conducted at educational institution and receives results/findings in return.

5.34. **Challenges**: In partnering with industry to provide **sponsored research** opportunities for students, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Finding and securing appropriate research projects	○	○	○	○	○
b. Facilitating a good match between student skills and industry needs	○	○	○	○	○
c. Clarifying the assignment of intellectual property rights	○	○	○	○	○
d. Finding/allocating time and resources for coordinating logistics related to sponsored research opportunities	○	○	○	○	○
e. Obtaining necessary equipment, supplies, tools	○	○	○	○	○
f. Navigating institutional requirements for licensing, liability insurance, etc.	○	○	○	○	○
g. Other challenges (describe) _____	○	○	○	○	○

5.35. **Impacts:** Which of the following impacts related to providing **sponsored research** opportunities for students have resulted from your partnership with industry? Select all that apply.
- ☐ Updated student and faculty knowledge of industry practices, trends
- ☐ Provided students with real-world work experience
- ☐ Connected industry with faculty and students
- ☐ Provided service to industry partners
- ☐ Other impacts (describe)

5.36. **Implementation**: How important are the following practices when partnering with industry to implement successful **sponsored research** opportunities for students?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Soliciting projects from industry for student research	○	○	○	○	○
b. Selecting projects that align with faculty or staff expertise	○	○	○	○	○
c. Verifying student skills are sufficient to meet industry research needs	○	○	○	○	○
d. Relaxing institutional interest in intellectual property rights	○	○	○	○	○
e. Creating clear expectations, goals for research	○	○	○	○	○
f. Providing ample time for student-based research	○	○	○	○	○
g. Creating multiple points for industry review of results	○	○	○	○	○
h. Other important implementation practices (describe) _____	○	○	○	○	○

5.37. Additional comments about your project/center's experience with industry-related **sponsored research**:

BUSINESS INCUBATION/ENTREPRENEURSHIP

Educational program partners with industry to foster and grow student or industry economic development opportunities. Examples include maker spaces, entrepreneurship competitions.

5.38. **Challenges**: In partnering with industry to provide **business incubation/entrepreneurship** opportunities, how challenging are the following factors for your project/center?

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
a. Finding and recruiting appropriate industry partners	○	○	○	○	○
b. Ensuring students are engaged	○	○	○	○	○
c. Navigating liability issues	○	○	○	○	○
d. Clarifying ownership of intellectual property rights	○	○	○	○	○
e. Finding/allocating resources for coordinating logistics	○	○	○	○	○

	Not challenging	Minimally challenging	Moderately challenging	Very challenging	Not applicable
f. Obtaining necessary space, equipment, tools	O	O	O	O	O
g. Other challenges (describe) _____	O	O	O	O	O

5.39. **Impacts**: Which of the following impacts related to providing **business incubation/entrepreneurship** opportunities have resulted from your partnership with industry? Select all that apply.
- ☐ Increased interaction with local industry community
- ☐ Provided facilities for small businesses to prototype new products
- ☐ Exposed students to the entrepreneurial process
- ☐ Increased exposure of program
- ☐ Other impacts

5.40. **Implementation:** How important are the following practices when partnering with industry to implement successful **business incubation/entrepreneurship** opportunities?

	Not important	Minimally important	Moderately important	Very important	Not applicable
a. Hosting events that include the general public to generate interest	O	O	O	O	O
b. Facilitating the sharing of ideas/resources between industry and educators	O	O	O	O	O
c. Creating opportunities for student innovators to informally mix with entrepreneurs	O	O	O	O	O
d. Relaxing institutional interest in intellectual property rights	O	O	O	O	O
e. Providing professional audience for student innovation pitches	O	O	O	O	O
f. Other important implementation practices (describe) _____	O	O	O	O	O

5.41. Additional comments about your project/center's experience with industry-related **business incubation/entrepreneurship**:

5.42. In review, the eight partnership models covered in this portion of the survey are:
- advisory board
- curricular development/review
- workplace-based learning
- faculty professional development
- instructional support
- program support
- sponsored research
- business incubation/entrepreneurship

Does your project/center engage in **industry partnerships** that are not included on this list? If so, please describe them.

5.43. Additional comments regarding **industry partnerships** overall: