

# Meeting Requirements, Exceeding Expectations: Understanding the Role of Evaluation in Federal Grants

May 25, 2016

Webinar will begin at 3pm ET

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EvaluATE

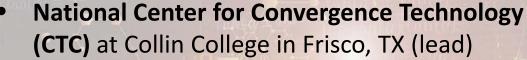
#### ATECENTERS

Disclaimer: This material is based upon work supported by the National Science Foundation under Grants # 1205077, # 1261893 and # 1204683. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



#### The CCTA IS Led By







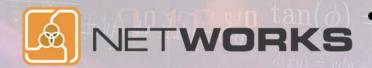
 South Carolina ATE National Resource Center (SCATE) at Florence Darlington Technical College in Florence, SC



• Florida ATE Center (FLATE) at Hillsborough Community College in Tampa, FL



 Bio-Link Next Generation National ATE Center for Biotechnology and Life Sciences (Bio-Link) at City College of San Francisco in San Francisco, CA



Networks Resource Center at the Maricopa Community College District in Phoenix, AZ



#### **CCTA Purpose**

- Respond to a request from the Department of Labor (DOL) to the NSF to have ATE Centers provide technical assistance services to DOL TAACCCT grantees
- Activities relevant for DOL grants, NSF grants and workforce-oriented programs of all kinds
- Deliverables
  - Topical webinars on existing and new solutions
    - Live/recorded with attendee Q&A
  - Identify and document best practices
  - Host convenings



#### TODAY'S PRESENTERS



Lori Wingate
Director of Research,
The Evaluation
Center at Western
Michigan University



Leslie Goodyear
Principal Research
Scientist,
EDC



Ann Beheler
Facilitator
PI, National CTC





#### Poll: Your Affiliation

- A. I am involved with an NSF grant
- B. I am involved with a TAACCCT grant
- C. Both
- D. Neither









Evaluation resource center for NSF's

Advanced Technological Education program

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# Overview

**PART I:** Evaluation Fundamentals

Commentary by Leslie Goodyear | Question Break

PART II: Evaluation Requirements and

Expectations

Commentary by Leslie Goodyear | Question Break

PART III: Evaluation Staffing, Budgeting,

and Utilization

Commentary by Leslie Goodyear | Question Break

Let's play

## Two Lies and a Truth!

Find your poll buttons

## Which is the truth?



A federal evaluation policy dictates the requirements for project-level evaluation.



All federal grantseekers and grantees should be evaluation-literate.



All federal grant programs require project-level evaluation.

systematic EVALUATION the determination of something's quality, value, or importance

1. Ask important questions about a project's processes and outcomes.



2. Gather evidence that will help answer those questions.



#### **EVALUATION**



4. Use the information for accountability, improvement, and planning.



3. Interpret data and answer the evaluation questions.

- sometimes used interchangeably
- not everyone agrees on what's what
  - follow funders' cues

#### **EVALUATION**

determines quality and value

#### RESEARCH

produces generalizable knowledge

#### ASSESSMENT

often associated with student evaluation



A federal evaluation policy dictates the requirements for project-level evaluation.

# But...

Some federal agencies have agency-specific guidance on evaluation (and research),



#### User-Friendly Handbook for Project Evaluation



Framework for Program
Evaluation in Public Health



Common Guidelines for Education Research and Development



# All federal grant programs require project-level evaluation.

# But...

There are good reasons to evaluate, even if you don't have to.

# Why some federal programs require projects to be evaluated

Accountability Improvement Evidence

# Why you should evaluate your project if even you don't have to

Accountability Improvement

**Evidence** 

Leadership Capacity Building for Faculty: The vitality and growth of the ATE community is closely linked to industry trends and needs as well as the acumen of the PIs and their institutions who educate technicians. As such, faculty must: 1) work with their institutional administration, 2) effectively manage both programs and project/center activities, 3) maintain industry connections that include local, statewide, and national economic development efforts, and 4) maintain and cultivate networks with other grantees across for acception.

thenturing gradual to the Complete, evaluate, disseminate and sustain their projects as well as fostering leadership skills such that they may become mentors at a future time;

Identifying and mentoring faculty and their administrators for the purpose of developing and implementing a new curriculum.

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Teacher Preparation: The foundation for advanced technological education is grounded in strong mathematics, stance, and technology education in K-12 schools. The preparation of future teachers who will facilitate student learning in mathematics and science and cultivate an interest in technological careers is an important component of the ATE program ATE teacher preparation projects hip prepare a future K-10 teaching worldow that is skilled in teaching spience and medylogical careful to saving real world technology related problems using design processes and practices (see Standards for Technological Seesay, TEA http://www.iteaconnect.org)

Teacher Preparation projects must involve both two-year and four-year institutions and should an project number, quality and diversity of prospective K-12 science, mathematics, or technology teachers in pre-service or paraprofessional programs. These

Programming Anniouncements, property in science and mathematics. These projects are expected to build on the attensive research the attensive research with the birth professor.

preparation. Two-year colleges have the unique advantage of having technology facult, connected with the high performance workplace, who can work with mathematics and selence faculty in developing and teaching the annual how to apply

The project's evaluation (b) trusting care received tension lend to be recurred projective K-12 teachers, transfer those students into four-year teacher preparation programs, enhance their understanding of a Chiced technologies used in the workplace, and enhance their ability to improve the technological literacy of their students. Project leaders should also be prepared to contribute to longitudinal studies that track students beyond the grant Selical in order to prepare the number who graduate with teaching credentials, find positions in K-12 schools, A 1 A 2 and 1 the classroom.

Business and Entrepreneurial Skills Development for Students: In addition to the sical skills and disciplinary content, students entering the industry environment need skills that allow them to understand and work effectively in a business environment. Many companies have a global presence, and students need to understand that the global economy affects them as employees. Another sector of the industry is comprised of small start-up companies, and these have different attributes than large established firms. Students need to understand these attributes and differences to be effective employees.

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Teacher Fri ation projects mus hould aim to increase the number, quality, and diversit rvice or paraprofessional programs. These ected to improve the prospective teachers' technological understand provide them with experiences to use in projects are engaging stul in real world technological problems; improve their understanding modern workplace; and strengthen their poe and mathematics. These projects are expected to build on esearch literature on teacher preparation in ar colleges have the unique advantage of having technology h the high performance preparation. Tv work with mathematics and science faculty in developing a workplace, who ?

The project's evaluate plan must measure the effectiveness of efforts to proper prospection of the project into four-year teacher and ration programs, enhance their understanding and vanced team and enhance their ability to into the technological literacy of their studies project leaders should longitudinal studies that track and its beyond the grant period, it is not measure the number who grant period in the classroom.

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### We'll look at examples from









#### Comments



#### Leslie Goodyear, Ph.D.

- Principal Research Scientist at EDC
- Former NSF program officer in the Division of Research on Learning

# Questions?

Lori
Wingate





Leslie
Goodyear

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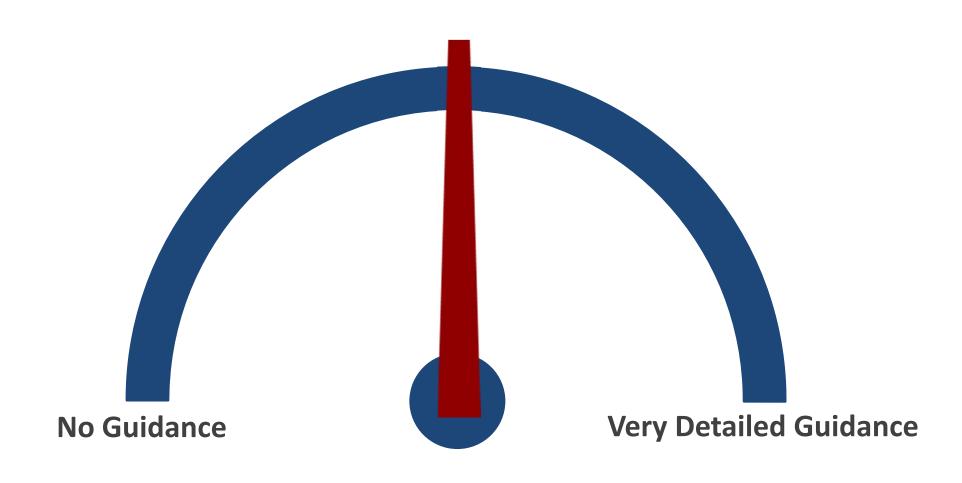
Expectations

Commentary by Leslie Goodyear | Question Break

**PART III:** Evaluation Budgeting, Personnel, and Utilization

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# Guidance Gauge



Leadership Capacity Building for Faculty: The vitality and growth of the ATE community is closely linked to industry trends and needs as well as the acumen of the PIs and their institutions who educate technicians. As such, faculty must: 1) work with their institutional administration, 2) effectively manage both programs and project/center activities, 3) maintain industry connections that include local, statewide, and national economic development efforts, and 4) maintain and cultivate networks with other grantees across funding agencies. Activities that foster these skills might include:

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- Identifying and mentoring faculty and their administrators for the purpose of developing and implementing a new curriculum in an advanced technological area to educate technicians for local industry needs; and
- Outreach activities that reach faculty and their institutions to educate them about the value and potential impact of working
  with the ATE Program and its community. These efforts could include providing information on funding opportunities,
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  needs as well as finding and working with local workforce investment boards and other entities.

Teacher Preparation: The foundation for advanced technological education is grounded in strong mathematics, science, and technology education in K-12 schools. The preparation of future teachers who will facilitate student learning in mathematics and science and cultivate an interest in technological careers is an important component of the ATE program. ATE teacher preparation projects help prepare a future K-12 teaching workforce that is skilled in teaching science and mathematics, understands the technological workplace, and can prepare students to use a variety of approaches to solving real world technology related problems using design processes and principles (XXX) Standards for Technological Literacy, ITEA, http://www.choonnect.org)

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The project's evaluation plan must measure the effectiveness of efforts to recruit prospective K-12 teachers, transfer those students into four-year teacher preparation programs, enhance their understanding of advanced technologies used in the workplace, and enhance their ability to improve the technological literacy of their students. Project leaders should also be prepared to contribute to longitudinal studies that track students beyond the grant period, in order to measure the number who graduate with teaching credentials, find positions in K-12 schools, and demonstrate successful performance in the classroom.

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**Evaluation Plan.** The application must describe an evaluation plan to review and determine the **quality and effectiveness** of the training project grant.



Occupational Safety and Health Training Project Grants

—Centers for Disease Control and Prevention



**Evaluation Plan:** Based on the theory of change and the desirable outcomes of the proposed revolution, enumerate appropriate **indicators of success** related to accomplishing the **goals and objectives** and a **timeframe** to seek measurable change.



Formation of Engineers: Revolutionizing Engineering and Computer Science Departments

-National Science Foundation



The [evaluation] plan should describe the evaluation design, indicating: (1) what types of data will be collected; (2) when various types of data will be collected; (3) what methods will be used; (4) what instruments will be developed and when; (5) how the data will be analyzed; (6) when reports of results and outcomes will be available; and (7) how the applicant will use the information collected through the evaluation to monitor progress of the funded project and to provide accountability information ...



Innovative Approaches to Literacy Program —U.S. Department of Education



Performance Evaluation Describe a data collection plan, aimed at describing the measures, methods, techniques, and tools used to evaluate the project and whether it achieved its anticipated outcomes, that includes, at minimum:

- Identification of specific data on participants and other data that the grantee plans to use, and how the data will be collected for analysis
- Plans for how the grantee will document the lessons learned, both positive and negative
- Plans to identify the most effective TA models and how they were implemented and could potentially be replicated
- Plans for involving program participants in evaluation activities
- Plans for how the data will be used to inform program delivery



Women in Apprenticeship and Nontraditional Occupations Technical Assistance Grants

—U.S. Department of Labor



### **Evaluation Plan Elements**

- 1 Evaluation questions
- 2 Indicators
- 3 Data sources
- 4 Data collection methods and instruments
- 5 Data analysis procedures
- 6 Evaluation deliverables
- **7** Timeline
- 8 Personnel
- 9 Budget
- 10 Plan for use of results



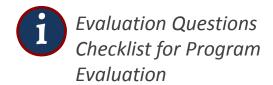
# Learn more by checking out related resources

—links on the final slide



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Identify what aspects of the project will be evaluated





### **Evaluation Plan Elements**

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Identify what will be measured in order to answer the evaluation questions



Criteria for Selection of High-Performing Indicators: A Checklist to Inform Monitoring and Evaluation



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Describe how evidence will be gathered and analyzed



- 1 Evaluation questions
- 2 Indicators
- 3 Data sources
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Identify products to be generated by evaluation (detailed plan, instruments, reports)



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Show how evaluation activities align with project activities and milestones



- 1 Evaluation questions
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Identify who will be responsible for which aspects of the evaluation



- 1 Evaluation questions
- 2 Indicators
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Include a line item for evaluation that matches the scope of work



- 1 Evaluation questions
- 2 Indicators
- 3 Data sources
- 4 Data collection methods and instruments
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Demonstrate intention and commitment to use results for improvement and sharing lessons learned



- 1 Evaluation questions
- 2 Indicators
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Tailor these elements to your specific project!

Evaluation Planning
Checklist for NSF-ATE
Proposals

10 Helpful Hints and 10
Fatal Flaws: Writing
Better Evaluation Sections
in Your Proposals



- 1 Evaluation questions
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Details about data collection and analysis will probably receive the most scrutiny



### Which data collection description is better?





The evaluation will utilize an accepted mixed-methods design (Cook & Campbell, 1979). Quantitative and qualitative measures of performance will be used in both a formative and summative manner to gauge the merit and worth of the grant initiative. This mixed-methods approach has proven useful in utilizing both quantitative and qualitative performance indicators in a single research design (Frechtling & Sharp, 1997). It is also consistent with the best practices and recommendations for rigorous scientifically-based research.

Project staff will administer an end-ofworkshop survey to obtain participants' feedback, including both ratings and open-ended comments. The external evaluator will conduct interviews with participants six months following the workshop to determine the extent to which they applied the workshop content. She also will interview a random sample of students at the end of each semester to learn how their knowledge and perceptions of green energy technology were impacted.

## **Data Collection Planning Matrix**

Evaluation Question: How has the project impacted enrollment in renewable energy programs and courses?

Indicator	Data Source	Method	Responsible Party	Timing	Analysis Plan
Change in course enrollment numbers	Institutional research database	Review of institutional and departmental records	Project PI	End of each semester	Comparison of enrollment numbers over time (start 2 years prior to project start)
Opinions of faculty and career center staff about the project's impact	Participating faculty Career center advisors Career center director	In-person interviews	External evaluator	Annually	Inductive coding of interviews to identify themes
Students' reports about why they enrolled	Enrolled students	Web survey	Instructors (instructions provided by evaluator)	Beginning of each semester	Descriptive statistics and inductive coding

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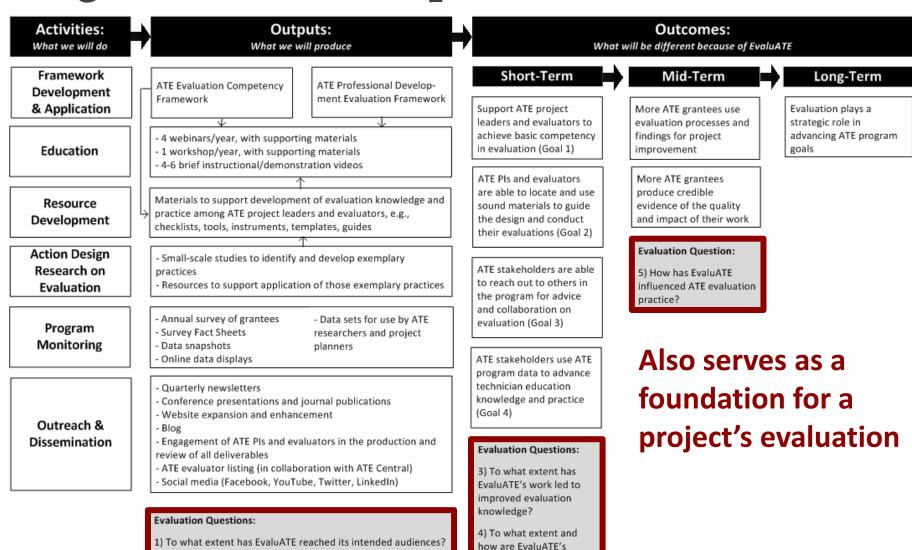
## Visual representation of a project sinputs, activities,

## outputs, and outcomes and the logical progression enhance their ability to improve the technological literacy of their students. Project leaders should also be prepared to contribute to longitudinal studies of how resources translate into impact ching

Business and Entrepreneurial Skills Development for Students: In addition to technical skills and disciplinary content, students entering the industry environment need skills that allow them to understand and work effectively in a business environment. Many companies have a global presence, and students need to understand that the global economy affects them as employees. Another sector of the industry is comprised of small start-up companies, and these have different attributes than large established firms. Students need to understand these attributes and differences to be effective employees.

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## Logic Model Example



materials being used?



Small Project Evaluation: Principles and Practices ATE Logic Model Template

2) What are users' perceptions of EvaluATE's quality?

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## Comments



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## Questions?

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## **Evaluation Staffing and Budgeting**



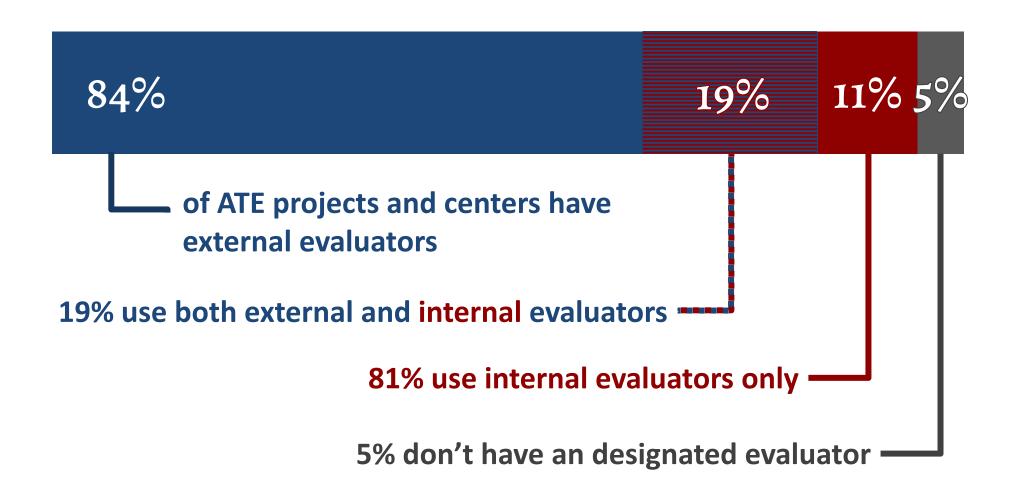
**Evaluation**: All projects and centers carry out evaluative activities. The funds to support an **evaluator independent of the project or center** must be requested, and the requested funds must match the scope of the proposed evaluative activities.



Advanced Technological Education Program

—National Science Foundation

## Evaluators in the ATE Program



## Locating an Evaluator

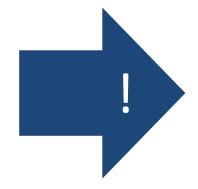


Check the American Evaluation Association's Evaluator Directory

If already funded, post an RFP in the "Career" section of AEA's website



Check with university-based evaluation centers in your region



Ask for recommendations from colleagues or other program grantees

## **Evaluation Staffing and Budgeting**



**Evaluation**: All projects and centers carry out evaluative activities. The funds to support an evaluator independent of the project or center must be requested, and the requested funds must match the scope of the proposed evaluative activities.



Advanced Technological Education Program

—National Science Foundation

## Evaluation Budgeting Rule of Thumb



of the cost of conducting the project should be allocated to evaluation



#### **Evaluation Utilization**

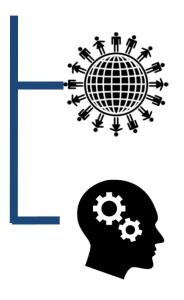
- Use results to inform for continuous project improvement
- 2 Share results with project participants, partners, and other stakeholders
- Report on project success and lessons learned in annual reports to funders
- Incorporate evaluation results into new funding proposals



## Results from Prior NSF Support



specific outcomes and results including metrics to demonstrate the impact of the project



#### **Broader Impacts**

Benefits to society; contributions to the achievement of desired societal outcomes

#### **Intellectual Merit**

Advances in knowledge and understanding



Served groups that have historically been underrepresented in STEM

Improved STEM education

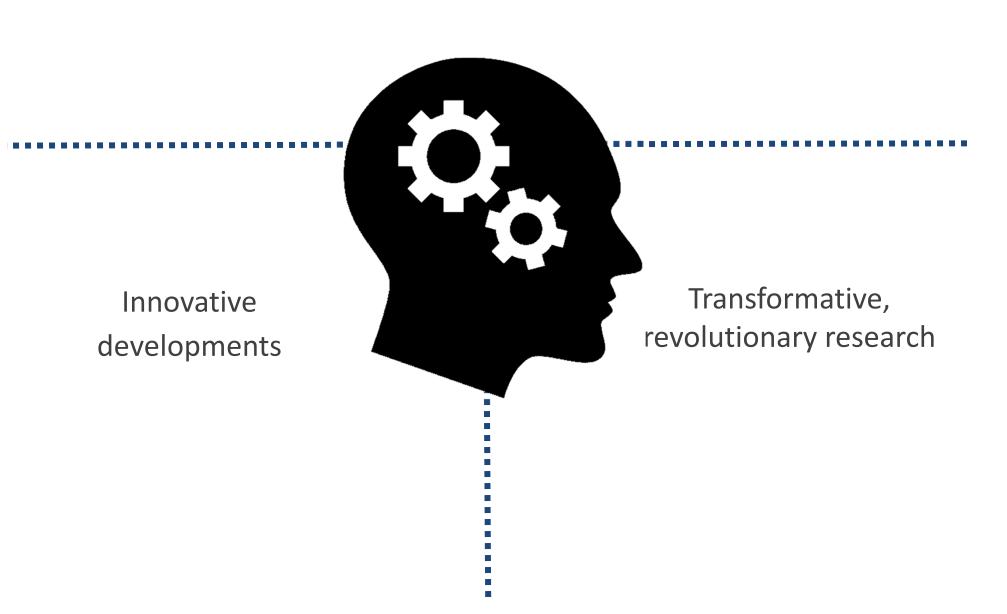
Enhanced infrastructure for research and education

Contributed to the development of a diverse, globally competitive STEM workforce

Increased economic competitiveness of the United States

Expanded partnerships between academia, industry, and others

#### New knowledge or improved understanding



#### Advice from EvaluATE blog contributor, Amy Germuth



State goal

As part of this project, our goal was to increase the number of women who successfully earned an associate's degree in welding. To this end, we began a targeted recruiting campaign focusing on women who were about to complete or had recently completed other related programs such as pipefitting and construction and developed a brochure for new students that included positive images of women in welding. We used funding to develop the Women in Welding program and support team building and outreach efforts by them. Institutional data reveal that since this project was started, the number of women in the welding program has almost tripled from 12 (2006-10), of which only 8 graduated to 34 (2011-16), of which 17 have already graduated and 5 have only one semester left. Even if the remaining 17 were not to graduate, the 17 who already have is double the number of female students who graduated from the program between 2006 -10."

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Identify target audience

As part of this project, our goal was to increase the number of women who successfully earned an associate's degree in welding. To this end, we began a targeted recruiting campaign focusing on women who were about to complete or had recently completed other related programs such as pipefitting and construction and developed a brochure for new students that included positive images of women in welding. We used funding to develop the Women in Welding program and support team building and outreach efforts by them. Institutional data reveal that since this project was started, the number of women in the welding program has almost tripled from 12 (2006-10), of which only 8 graduated to 34 (2011-16), of which 17 have already graduated and 5 have only one semester left. Even if the remaining 17 were not to graduate, the 17 who already have is double the number of female students who graduated from the program between 2006 -10."

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Describe impact with evidence

As part of this project, our goal was to increase the number of women who successfully earned an associate's degree in welding. To this end, we began a targeted recruiting campaign focusing on women who were about to complete or had recently completed other related programs such as pipefitting and construction and developed a brochure for new students that included positive images of women in welding. We used funding to develop the Women in Welding program and support team building and outreach efforts by them. Institutional data reveal that since this project was started, the number of women in the welding program has almost tripled from 12 (2006-10), of which only 8 graduated to 34 (2011-16), of which 17 have already graduated and 5 have only one semester left. Even if the remaining 17 were not to graduate, the 17 who already have is double the number of female students who graduated from the program between 2006 -10.



#### **ADDITIONAL TIPS**

- Focus on outcomes
- Include as much evidence as possible
- Describe how the current proposal is building on results from prior work
- Be forthright about what didn't work and lessons learned





TOPIC	RESOURCE	LINK
Evaluation Questions	Evaluation Questions Checklist for Program Evaluation	http://bit.ly/eval-questions
Indicators	Criteria for Selection of High-Performing Indicators: A Checklist to Inform Monitoring and Evaluation	http://bit.ly/indicator-eval
Integrating Evaluation into Proposals	Evaluation Planning Checklist for NSF-ATE Proposals	http://bit.ly/planningChecklist
Γιομοναίν	10 Helpful Hints and 10 Fatal Flaws: Writing Better Evaluation Sections in Your Proposals	http://bit.ly/hints-flaws
Data Collection Planning	Data Collection Planning Matrix	http://bit.ly/data-matrix
Logic Models	Logic Model Template for ATE Projects and Centers	http://bit.ly/ate-logic
Evaluation Terminology	EPA Program Evaluation Glossary	http://bit.ly/epa-evalgloss
	Community Solutions' Evaluation Glossary App	http://bit.ly/cs-gloss
Evaluation Planning, Budgeting, and Staffing (and more on logic models and evaluation questions)	Small Project Evaluation: Principles and Practices:	http://bit.ly/2016-mar
Communicating Evidence of Prior NSF Support	EvaluATE's Winter 2016 newsletter: Revisiting Intellectual Merit and Broader Support	http://bit.ly/winter16news
	Getting Ready to Reapply: Highlighting Results of Prior Support	http://bit.ly/germuth_dec15
	Intellectual Merit and Broader Impacts: Identifying Your Project's Achievements and Supporting Evidence	http://bit.ly/wingate-oct15



# Webinar: Small Project Evaluation: Principles and Practices



#### Webinar included demonstrations of:

- Evaluation budget development
- Logic model development
- Evaluation question development
- How to divide internal and external evaluation tasks

Check out the recording, plus slides and resource handout!

www.evalu-ate.org/webinars/2016-march/

## Comments



## Leslie Goodyear, Ph.D.

- Principal Research Scientist at EDC
- Former NSF program officer in the Division of Research on Learning

## Questions?

Lori
Wingate





Leslie
Goodyear

### Join Us – All Webinars 3 pm Eastern

#### June 16, 2016

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Leading a consortium across one state or across 6 to accomplish goals can be hard. This webinar will provide best practices for helping you successfully lead any consortium to accomplish common goals.

#### **Presenters:**

Ann Beheler, National Convergence Technology Center (CTC)

John Sands, CSSIA

Marianne Krismer, Health Professions Pathway TAACCCT Consortium

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## July 25-28, 2016



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ATECENTERS



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Free follow-up DOL and NSF Workforce convening (formally TAACCCT Convening) for all TAACCCT grantees and others who can benefit on Friday,

July 29 from 8:30 am to 12:30 pm.



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