EVALUATION: A KEY INGREDIENT FOR A SUCCESSFUL ATE PROPOSAL

August 21, 2013

This material is based upon work supported by the National Science Foundation under Grant No. 1204683. The content reflects the views of the authors and not necessarily those of NSF.

Introductions

Krystin Martens
Lori Wingate
Rachael Bower
Connie Della-Piana
Karen Austin
Evaluation: A Key Ingredient for a Successful ATE Proposal

Advanced Technological Education

www.nsf.gov/ate

Materials

- Checklist
- Slides
- Recording

Available from evalu-ate.org/events/august_2013

or the Recent Additions section of our homepage (through September 2013)
Objectives

By the end of the webinar, you will

1. Know what evaluative elements should be included in a proposal and where

2. Understand how evaluation can be leveraged to strengthen a proposal
Lori Wingate

**RECIPE FOR: Successful ATE proposal**
FROM THE KITCHEN OF: EvaluATE

- ✔ Cover Sheet
- ✔ Project Summary
- ✔ Project Description
- ✔ References Cited
- ✔ Biographical Sketches
- ✔ Budget & Budget Justification
- ✔ Current & Pending Support
- ✔ Facilities, Equipment & Other Resources
- ✔ Supplementary Documents

Add a dash of evaluation and mix thoroughly.
Human Subjects

**Exemption Subsection**

**IRB App. Date (MM/DD/YY)** pending

**Human Subjects Assurance Number**

---

**Project Summary**

1-page overview of the proposal’s **Intellectual Merit** and **Broader Impacts**
Project Summary

ATE-Specific INTELLECTUAL MERIT Criteria about Evaluation:

“Is the evaluation plan clearly tied to the project outcomes?”

Project Summary

ATE-Specific INTELLECTUAL MERIT Criteria about Evaluation:

“Is the evaluation likely to provide useful information to the project and others?”
**Project Summary**

ATE-Specific INTELLECTUAL MERIT Criteria about Evaluation:

“Does the project provide for effective assessment of student learning?”

**Project Description**

- Cover Sheet
- Project Summary
- Project Description
- References Cited
- Biographical Sketches
- Budget & Justification
- Supplementary Documents

15-page narrative
Evaluation: A Key Ingredient for a Successful ATE Proposal

8/21/2013

Project Description

Results of Prior NSF Support
- Rationale
- Goals, Objectives, Deliverables, Activities
- Timetable
- Management Plan
- Roles and Responsibilities of the PI, co-PI(s), and Other Senior Personnel
- Plan for Sustainability
- Evaluation Plan
- Dissemination Plan

Results of Prior Support

“specific outcomes and results including metrics to demonstrate the impact of the activities undertaken including evidence of the quality and effectiveness of the project's deliverables”

©2013 EvaluATE

www.evalu-ate.org
Evaluation: A Key Ingredient for a Successful ATE Proposal

8/21/2013

Project Description

Results of Prior NSF Support
Rationale
Goals, Objectives, Deliverables, Activities
Timetable
Management Plan
Roles and Responsibilities of the PI, co-PI(s), and Other Senior Personnel
Plan for Sustainability
Evaluation Plan
Dissemination Plan

Evaluation Plan

Read the solicitation carefully for details about evaluation expectations for your type of project
## Evaluation Plan

1. Identify evaluator and briefly describe his/her experience/expertise
2. Describe the evaluation plan
3. Show integration with other elements of the proposal as appropriate (e.g., biosketch, logic model, data management plan)

1-3 pages of your 15-page narrative

---

## ATE Program Solicitation

“The funds to support an evaluator independent of the project or center must be requested...”
Finding an Evaluator

Other ATE PIs
ATE Evaluator Directory
American Evaluation Association’s Evaluator Directory
Universities in your region

Evaluation Plan

1. Identify evaluator and briefly describe his/her experience/expertise
2. Describe the evaluation plan
3. Show integration with other elements of the proposal as appropriate (e.g., biosketch, logic model, data management plan)
Evaluation Plan

2. Describe the evaluation plan:
   a. Evaluation focus
   b. Data collection plan
   c. Analysis and interpretation
   d. Reporting schedule and projected uses

a. Evaluation Focus

Align the evaluation’s focus with the project’s intended outcomes
Logic Model

Helpful for focusing a project on outcomes and planning the evaluation

Logic Model Example

The Green Energy Technology (GET) Institute at Midwest Community College

<table>
<thead>
<tr>
<th>Activities</th>
<th>Outputs</th>
<th>Short-Term Outcomes</th>
<th>Mid-Term Outcomes</th>
<th>Long-Term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty workshops</td>
<td>Trained faculty</td>
<td>Increased student knowledge &amp; skills in green tech</td>
<td>Graduates enter green tech careers</td>
<td>Increased regional economic vitality</td>
</tr>
<tr>
<td>Follow-up support</td>
<td>Modules</td>
<td>Increased student interest in green tech careers</td>
<td>Regional demands for green technicians are met</td>
<td></td>
</tr>
<tr>
<td>Guest lectures</td>
<td>Model curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field trips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campus-wide activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissemination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community colleges adopt curriculum</td>
<td></td>
<td>Enhanced national capacity for sustainable development</td>
</tr>
</tbody>
</table>
Logic Model Example

**Activities**

- Faculty workshops
- Follow-up support
- Guest lectures
- Field trips
- Campus-wide activities
- Dissemination

**What activities will be supported by your project?**

Logic Model Example

**Outputs**

- Trained faculty
- Modules
- Model curriculum

**What tangible outputs will be generated from these activities?**
Logic Model Example

What do your project’s beneficiaries need to know or be able to do?

- Increased student knowledge & skills in green tech
- Increased student interest in green tech careers
- Community colleges adopt curriculum

What should people do differently because of your project?

- Graduates enter green tech careers
- Regional demands for green technicians are met
Logic Model Example

How are your project’s long-term goals aligned with the ATE program?

Activities
- Faculty workshops
- Follow-up support
- Guest lectures
- Field trips
- Campus-wide activities
- Dissemination

Outputs
- Trained faculty
- Modules
- Model curriculum

Short-Term Outcomes
- Increased student knowledge & skills in green tech
- Increased student interest in green tech careers
- Community colleges adopt curriculum

Mid-Term Outcomes
- Graduates enter green tech careers
- Regional demands for green technicians are met
- Community colleges adopt curriculum

Long-Term Outcomes
- Increased regional economic vitality
- Enhanced national capacity for sustainable development
- Increased regional economic vitality
- Enhanced national capacity for sustainable development

The Green Energy Technology (GET) Institute at Midwest Community College
Logic Model + Evaluation

Whom did you reach? (who, how many)
What were participants’ reactions to the activities?
What is the quality/utility of the activities and products?

Logic Model + Evaluation

How did the activities affect participants’ knowledge, skills, abilities, or attitudes?
Logic Model + Evaluation

To what extent did participants change their behavior because of what they learned?

Mid-Term Outcomes

Logic Model + Evaluation

What is the cumulative effect of the project’s outcomes?
What aspects of the project are sustainable?
What was transformative about the project?

Long-Term Outcomes
Evaluation Plan

2. Describe the evaluation plan:
   a. Evaluation focus
   b. Data collection plan
   c. Analysis and interpretation
   d. Reporting schedule and projected uses

b. Data Collection Plan

What information do you need?
How will you collect it?
From whom?
When?
Data Collection Plan: Example 1

...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.
Data Collection Plan: Example 2

WHAT?  
Project staff will administer an end-of-workshop 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.

HOW?  
Project staff will administer an end-of-workshop survey to obtain participants’ feedback, including both rating 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 Plan: Example 2

**WHO?**

Project staff will administer an end-of-workshop survey to obtain participants’ feedback, including both rating 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.

---

**WHEN?**

Project staff will administer an *end-of-workshop* survey to obtain participants’ feedback, including both rating 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 Matrix**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Evaluation Question</th>
<th>Indicator</th>
<th>Measure/Method</th>
<th>Data Source</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ interest in green tech careers increases</td>
<td>To what extent did students’ interest in green tech careers increase because of the project?</td>
<td>Change in course enrollment numbers</td>
<td>Institutional and departmental records</td>
<td>Experts in green tech</td>
<td>End of each semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students’ intent to pursue green tech job</td>
<td>In-class survey in retrospective pre-post format</td>
<td>Students in technician ed courses</td>
<td>End of each semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opinions of faculty and career center staff</td>
<td>Interviews</td>
<td>Sample of faculty/staff</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Number/quality of employment interviews</td>
<td>Interviews</td>
<td>On-campus recruiters</td>
<td></td>
<td>Each visit</td>
</tr>
</tbody>
</table>

**RECIPE FOR: Successful ATE proposal**

**FROM THE KITCHEN OF: EvaluATE**

**Tips for Data Collection:**

- **Build a body of evidence**
  - **Multiple data sources**
  - **Qualitative + quantitative data**
- **Embed data collection into regular project activities**
  1. Use existing data whenever possible
  2. Use existing instruments when/if they match your needs
Evaluation Plan

2. Describe the evaluation plan:
   a. Focus of the evaluation
   b. Data collection plan
   c. Analysis and interpretation
   d. Reporting schedule and projected uses

C. Analysis & Interpretation

How will you make sense of the data?
What sorts of comparisons will be made?
What counts as “success”?
c. Analysis & Interpretation

Analysis
Organizing, transforming, and describing data

Interpretation
Making sense of analyzed data so that conclusions can be made about a project’s quality, progress, and/or impact
Evaluation Plan

2. Describe the evaluation plan:
   a. Focus of the evaluation
   b. Data collection plan
   c. Analysis and interpretation
   d. Reporting schedule and projected uses
d. Reporting & Projected Uses

ATE-Specific INTELLECTUAL MERIT Criterion

“Is the evaluation likely to provide useful information to the project and others?”

When and what types of reports will be issued?
How will results be shared?
d. Reporting & Projected Uses

Information from the evaluation will be needed for
- annual reports to NSF
- annual survey of grantees
- reports to advisory groups

Evaluation Plan

1. Identify evaluator and briefly describe his/her experience/expertise
2. Describe the evaluation plan
3. Show integration with other elements of the proposal as appropriate (e.g., biosketch, budget, data management plan)
Evaluation: A Key Ingredient for a Successful ATE Proposal

Project Description

Results of Prior NSF Support
Rationale
Goals, Objectives, Deliverables, Activities
Timetable
Management Plan
Roles and Responsibilities of the PI, co-PI(s), and Other Senior Personnel
Plan for Sustainability
Evaluation Plan
Dissemination Plan
References

Include references to pertinent evaluation literature in your evaluation plan section

Bio Sketch

Get one for your evaluator

Follow 2-page NSF format

Include with Supplementary Documents
“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.”
Poll

On average, what percentage of ATE budgets is spent on evaluation?
A. 2%
B. 8%
C. 15%
D. 24%

Budgeting for Evaluation

rule of thumb
10%
Budgeting for Evaluation

8% reality

Evaluation Budget Components

- Time
- Travel
- Materials and other expenses
- Institutional indirect/overhead costs
Time

How many days does the evaluator need to spend in order to generate the needed evaluation deliverables and services?

Travel

Will the evaluator need to travel to
- attend the ATE PI conference, advisory committee meetings, or special project events?
- collect data from participants?
- meet with project staff to plan the evaluation or discuss results?
Materials and other expenses

Examples:
- Materials (e.g., paper for surveys, reports)
- Copying
- Incentives
- Survey hosting

Institutional Indirect/Overhead

Percentage of direct costs
Varies by organization
Budget & Budget Justification

Under “Other Direct Costs” identify
- evaluator’s daily rate
- time committed to the project
- travel costs
- materials costs
- institutional indirect/overhead, if applicable

Supplementary Documents

- A commitment letter from your evaluator
- Your evaluator’s biosketch
- Data Management Plan (REQUIRED)
  (data collection for the evaluation should be addressed in this plan)
Comments

Connie Della-Piana

Rachael Bower
What is ATE Central?

an information hub for the ATE community that supports and promotes the work of the ATE program through services, publications, and tools designed for ATE grantees and the audiences they reach.

Information Portal

ATE Central collects, organizes, and disseminates information about:

- ATE projects and centers
- Resources used and created by ATE projects and centers
- Events sponsored, hosted, or attended by the ATE community
Proposal Writing Support

ATE Central can assist your project or center with:
- Developing online resource collections
- Archiving resources as project sunsets
- Supporting outreach and sustainability planning
- Creating effective data management plans
- Finding collaborators and partners

Collections Building and Maintenance

Digital collection development planning
Schemas, metadata, and harvesting (oh my!)
Cataloging and workflow
Maintenance and archiving
Collection Building: CWIS

Free open-source software designed to assemble organize and share collections of data about resources

ATE Outreach Kit

Outreach support specifically for ATE projects and centers:
- Outreach Planning
- Social Media
- Communication
- Outreach Resources

©2013 www.evalu-ate.org 41
Who’s Your Audience?

(Be very specific—e.g., second-year female welding students)

Identifying your audience

– Who are your potential collaborators on campus?
– Which news outlets might be interested in this work?
– What professional associations might be interested in the outcomes of this project?
– Which specific groups could use and benefit from the deliverables of your project or center?
– Have you identified other ATE centers or projects engaged in similar work?
Finding Partners: ATE Central Map

ATE Social Media Directory

Tracks social media channels for:
- ATE projects and centers
- NSF projects, directorates, and offices
- ATE-related organizations (AACC, AAAS, WGBH, etc.)
Data Management Plan

1. Types of data

2. Standards to be used for data and metadata format and content

3. Policies for access and sharing

4. Provisions for privacy, confidentiality, security, and intellectual property

5. Policies and provisions for re-use, re-distribution, and production of derivatives

6. Plans for archiving data preserving access

What types of data, metadata, or resources will the project create?

2 pages max—titled “Data Management Plan”

Goes in as a supplementary document

May include only the statement that no detailed plan is needed, as long as the statement is supported by a clear justification.
**Data Management Plan**

1. **Types of data**
   - Description of the type of data to be collected, analyzed, and stored.
   - Rachael: How will this data be used in the proposal?

2. **Standards to be used for data and metadata format and content**
   - Methods for standardizing data formats and metadata.
   - Rachael: Are these standards widely accepted in the field?

3. **Policies for access and sharing**
   - Guidelines for access and distribution of data.
   - Rachael: How will this data be made accessible to the public?

4. **Provisions for privacy, confidentiality, security, and intellectual property**
   - Measures to protect data privacy and intellectual property rights.
   - Rachael: Are there any legal concerns associated with this data?

5. **Policies and provisions for re-use, redistribution, and production of derivatives**
   - Conditions for re-use and redistribution of the data.
   - Rachael: How can this data be repurposed for future projects?

6. **Plans for archiving data preserving access**
   - Strategies for long-term data preservation.
   - Rachael: How will the data be archived securely?

---

Which formats will be used to create, share, and store that data?

How and where will that data be stored?
### Data Management Plan

1. **Types of data**

2. **Standards to be used for data and metadata format and content**
   - Phasellus aliquam nisl in dolor. Integer sed lorem in velit. Nulla facilisis, et commodo consectetur, lectus mi tincidunt venenatis, lorem ligula luctus odio, eget gravida augue mi.

3. **Policies for access and sharing**
   - Integer sed lorem in velit. Nulla facilisis, et commodo consectetur, lectus mi tincidunt venenatis, lorem ligula luctus odio, eget gravida augue mi.

4. **Provisions for privacy, confidentiality, security, and intellectual property**
   - Nulla facilisis, et commodo consectetur, lectus mi tincidunt venenatis, lorem ligula luctus odio, eget gravida augue mi.

5. **Policies and provisions for re-use, redistribution, and production of derivatives**
   - Integer sed lorem in velit. Nulla facilisis, et commodo consectetur, lectus mi tincidunt venenatis, lorem ligula luctus odio, eget gravida augue mi.

6. **Plans for archiving data preserving access**
   - Integer sed lorem in velit. Nulla facilisis, et commodo consectetur, lectus mi tincidunt venenatis, lorem ligula luctus odio, eget gravida augue mi.
Data Management Plan

1. Types of data
   - Types of data to be included in the plan. Describe the data that will be collected, analyzed, and stored. This section should outline the different types of data that will be managed, including any specific standards or formats that will be used.

2. Standards to be used for data and metadata format and content
   - Standards that will be used to format and present data. This section should describe the standards that will be used to represent data in a consistent and understandable way. This includes metadata standards, which will be used to describe the data.

3. Policies for access and sharing
   - Policies that govern access to the data. This section should outline the policies that will be in place to ensure that the data can be accessed and shared in a responsible and ethical manner.

4. Provisions for privacy, confidentiality, security, and intellectual property
   - Provisions that ensure the privacy, confidentiality, and security of the data. This section should describe the measures that will be taken to protect the data from unauthorized access and use.

5. Policies and provisions for re-use, redistribution, and production of derivatives
   - Policies that govern re-use and redistribution of the data. This section should outline the policies that will be in place to ensure that the data can be re-used and redistributed in a responsible and ethical manner.

6. Plans for archiving data preserving access
   - Plans for archiving the data. This section should outline the plans that will be in place to ensure that the data can be preserved and accessed in the future.

How will this data continue to “live” after project funding expires?

Sustainability & Archiving

What are you sustaining?

- What’s appropriate for your project or center?
- Look at deliverables – what should “live on”?
- Involve partners – industry, your institution, funders
- Look at real costs
- Think about:
  - Technologies
  - Activities
  - Materials
  - Data
  - Staff
ATE Central Handbook

Support and best practice for ATE projects & centers:
- ATE 101
- Finding Partners and Collaborators
- Outreach Planning
- Managing and Sharing Deliverables
- Other Key ATE Players
- Data Management

http://atecentral.net

Greater Impact Through Collaboration

ATE Evaluation 101
September 18, 2013

This material is based upon work supported by the National Science Foundation under grant number 1244862. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the presenters and do not necessarily reflect the views of NSF.
Strategies for Meaningful Interpretation of ATE Evaluation Data

Preconference workshop at the ATE Principal Investigators Conference

October 23, 2013

www.evalu-ate.org

Resource Library
Evaluator Directory
Events (including past webinars)
Newsletters
Thank You

EvaluATE
Evaluation Resource Center for advanced technological education