Evaluation: Understanding Programs and Outcomes

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Assistant Director,
UTEP Center for Institutional Evaluation, Research and Planning (CIERP)
Outline

❖ CIERP’s mission at UTEP
  ▪ What does CIERP do?
  ▪ What is the scope of CIERP’s role in evaluation?

❖ Knowledge about evaluation that will allow program leaders and researchers to submit a funding proposal with a strong evaluation plan
  ▪ Asking key questions about your program
  ▪ Developing a logic model
  ▪ Aligning the evaluation plan with requirements from the funding agency or foundation

❖ Logistics of the Evaluation
  ▪ How CIERP can help program leaders and researchers
  ▪ Working with an evaluator
CIERP at UTEP
CIELRP’s Roles

**Institutional Evaluation**
Tracking progress (key metrics) toward institutional goals

**Institutional Research**
Developing an understanding of factors that explain or hinder progress toward goals

**Planning**
Supporting the application of knowledge – insights into action

**Policy Analysis**
Analyzing proposals for policy and administrative changes to assess their impact on institutional mission and goals

**Data Retrieval, Storage, and Distribution**
Institutional Evaluation

Focuses on the unique and combined impact of programs on advancing institutional priorities (e.g., meta-analyses)

- Are programs producing the intended outcomes on institutional goals?
- What is the marginal impact of a program on a specific goal?
Program Evaluation

Systematic investigation of the progress of a program in attaining its goals and the effectiveness of continuous improvement efforts

- Does the program do what it is supposed to do?
- What is the association between the program and its projected outcomes?
Program Evaluation

Key Principle:

Evaluation is intended to contribute to a decision

Reasons for conducting program evaluation:

- Monitor progress to the stated goals
- Improve program performance
Evaluation Section of Proposal: The Plan

• Evaluation Plan

Should assure potential funder that there is a way to know whether you achieved your goal(s).

❖ Goal(s) should be clearly stated.
❖ Project outcomes should be measurable.
Program Evaluation Plan cont’d: Your Job as PI or Program Leader

Think about & assemble possible data “evidence”

- What data are most likely to help show progress?
- What data are most likely to demonstrate the program’s performance?
Six Phases of Evaluation

1. Develop a conceptual model of the program and identify key evaluation points
2. Develop evaluation questions and define measurable outcomes or ongoing measures of improvement.
3. Develop an evaluation design
4. Collect data
5. Analyze data
6. Report/disseminate information to interested audiences

From NSF publication, *The 2002 User-Friendly Handbook for Project Evaluation*
Example from the National Science Foundation: Discovery Research in K-12 STEM Education

Proposals should describe the main features of the evaluation design
• assessing whether the project is making satisfactory progress toward its goals
• recommending reasonable, evidenced-based adjustments to project plans
• determining the effectiveness and impact of the research, resources, models, and tools developed by the project
• attesting to the integrity of outcomes reported by the project.
Key Questions:

• What do you want to accomplish with your program?
  – Goals
  – Sub-goals

• How will you accomplish these goals?
  – Strategies / Activities
    Think: Is there a clear rationale for activities in terms of connections with the goal(s)?

• How will you know you have reached these goals?
  – Measureable Outcomes
Key Questions: Working Toward a Logic Model

<table>
<thead>
<tr>
<th>What do you want to accomplish?</th>
<th>What actions do you need to take to accomplish it?</th>
<th>How will you know that you have accomplished it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify one or more broad aims (goals desired as a result of program efforts).</td>
<td>Identify a set of distinct steps that will allow you to accomplish your goals.</td>
<td>Identify measurable elements that will allow you to determine if you have accomplished (or moved closer) to your aim.</td>
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</tbody>
</table>
Evaluation Section of Proposal: Measures and Methods

• Describe measures

• Mix methodologies – use quantitative and qualitative measures, as appropriate
  – allows for more converging evidence
  – allows for development of the project
e.g. Is another type of measure needed in Year 2?

Remember: Not everything can be measured with a survey.
### Science Stars

<table>
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<th>What do you want to accomplish?</th>
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1. Increased access to ed. & research training activities for students interested in the sciences.
   a. Improved persistence in science majors
   b. Enhanced research skills
2. Increase number of students who are prepared for graduate school.
Activity:
Reviewing Key Questions for a Sample Program
Activity Observations: Evaluation Across Time

- **Evaluation** - may examine:
  
  - **process** - implementation activities, measures of progress to the goal

  and/or

  - **product** - outcomes, and later, impact
Evaluation Across Time

• Formative Evaluation Measures
  are often related to examining the implementation of the program
  provide information that is useful for improving the program
  “feedback”

• Summative Evaluation Measures
  provides information on the program’s impact and efficacy
  *Does the program do what it is supposed to do?*
  “evidence”
## Logic Models: A Flexible Tool

**NSF Handbook**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Short-term Outcomes</th>
<th>Long-term Outcomes</th>
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<tr>
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</table>
## Logic Models: A Flexible Tool

### Proposal to Foundation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Steps</th>
<th>Tasks &amp; Who is Responsible</th>
<th>Outcome Measures</th>
<th>Dissemination Strategy</th>
</tr>
</thead>
</table>

### NSF Proposal

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Activities</th>
<th>Data Collection Methods</th>
<th>Milestones &amp; Impact</th>
</tr>
</thead>
</table>
Other Considerations, Depending on the Grant Program

• **Risk Assessment**
  If things do not go as planned, what is Plan B?

• **Sustainability**
  Some funding agencies will want to know how you plan to continue your great work.
Dissemination

• How will you use lessons learned from the evaluation?

• With whom might you share this information?
  – conference presentations
  – website, blog, or listserv
  – journal article or written publication for practitioners

Funding agencies want to know that your project will have a life beyond the grantee’s lab.
Evaluation Section of Proposal

Describe evaluation throughout the life of the project. This way, you will have information for making mid-project corrections if necessary.
To Summarize

- The PI must be able to explain how the program is expected to reach the stated goals.
- The evaluation framework must be consistent with the research plan.
- The logic model template you have is a tool—it is flexible and can be changed to suit the needs of your program proposal.

The best evaluation plans are developed when the program leader has clear goals.
Logistics of Evaluation
Data Availability and Data Requests
Data Availability

❖ Two types of institutional data available from UTEP
  ▪ Fact book data: Available to UTEP faculty and staff
  ▪ Special requests: Submit a data request

❖ Keep in mind: Student-level information is subject to FERPA (except for directory information) AND you may need to submit an IRB proposal
Interactive Fact Book

http://cierp.utep.edu

- UTEP staff and faculty may log in using their network id and password.
Information about Students’ Majors

[Image of a website section titled "2011-2012 Interactive Fact Book"]
### Five-Year Distribution of Undergraduate Majors by Department

<table>
<thead>
<tr>
<th>Term</th>
<th>Fall 2011</th>
<th>Fall 2010</th>
<th>Fall 2009</th>
<th>Fall 2008</th>
<th>Fall 2007</th>
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</thead>
<tbody>
<tr>
<td><strong>Accounting</strong></td>
<td>269</td>
<td>287</td>
<td>308</td>
<td>273</td>
<td>201</td>
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<tr>
<td><strong>Business Administration</strong></td>
<td>1,020</td>
<td>1,398</td>
<td>1,306</td>
<td>1,303</td>
<td>1,690</td>
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<tr>
<td><strong>Economics and Finance</strong></td>
<td>205</td>
<td>224</td>
<td>237</td>
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<tr>
<td><strong>Information and Decision Sciences</strong></td>
<td>111</td>
<td>105</td>
<td>105</td>
<td>99</td>
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<tr>
<td><strong>Marketing and Management</strong></td>
<td>361</td>
<td>432</td>
<td>463</td>
<td>398</td>
<td>362</td>
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<tr>
<td><strong>College Total</strong></td>
<td>2,564</td>
<td>2,446</td>
<td>2,421</td>
<td>2,407</td>
<td>2,551</td>
</tr>
<tr>
<td><strong>College of Education (Dean's Office)</strong></td>
<td>1,812</td>
<td>2,032</td>
<td>2,059</td>
<td>2,159</td>
<td>2,112</td>
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<tr>
<td><strong>Teacher Education</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>College Total</strong></td>
<td>1,812</td>
<td>2,032</td>
<td>2,059</td>
<td>2,159</td>
<td>2,112</td>
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<tr>
<td><strong>Civil Engineering</strong></td>
<td>352</td>
<td>326</td>
<td>309</td>
<td>274</td>
<td>257</td>
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<tr>
<td><strong>College of Engineering (Dean's Office)</strong></td>
<td>864</td>
<td>874</td>
<td>823</td>
<td>765</td>
<td>708</td>
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<tr>
<td><strong>Computer Science</strong></td>
<td>297</td>
<td>236</td>
<td>225</td>
<td>191</td>
<td>185</td>
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<tr>
<td><strong>Electrical and Computer Engineering</strong></td>
<td>409</td>
<td>393</td>
<td>389</td>
<td>440</td>
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<tr>
<td><strong>Industrial Engineering</strong></td>
<td>98</td>
<td>118</td>
<td>133</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial, Manufacturing, and Systems Engineering</strong></td>
<td>124</td>
<td>108</td>
<td></td>
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<tr>
<td><strong>Mechanical Engineering</strong></td>
<td>467</td>
<td>441</td>
<td>430</td>
<td>376</td>
<td>367</td>
</tr>
<tr>
<td><strong>Metallurgical and Materials Engineering</strong></td>
<td>62</td>
<td>56</td>
<td>49</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td><strong>College Total</strong></td>
<td>2,575</td>
<td>2,436</td>
<td>2,323</td>
<td>2,218</td>
<td>2,106</td>
</tr>
</tbody>
</table>

Questions about the data you see? CIERP can help explain the data.
Special Data Requests

cierp@utep.edu

❖ Expect a response from Cathe Lester, Ph.D. or another member of CIERP’s data team.

❖ If data will be needed on an ongoing basis for a grant project, there will be a charge. **Include CIERP in your budget.**
Examples of Data Requests

- How many first-time freshmen declared a major in engineering over the last five years?

- What is the time to degree for a group of students who participated in my program?

- What are the GPA’s for a group of students who participated in my program?*

* May need to have submitted an IRB proposal and obtained consent from students.
Deciding on an Evaluator

- Does the funding agency require an evaluation?

- If yes, what are the requirements for the evaluation, as stated by the funding agency?

  - **Independent Evaluator** – not part of the research team
  
  - **Internal Evaluator** – part of the researcher’s institution
  
  - **External Evaluator** – (generally) outside the researcher’s institution
Why not have someone else develop the entire plan?

- As the PI, you know the project, its context, and theoretical considerations best.

- The value base of the evaluation is important. (The grant program already states a purpose.)

- By thinking through the evaluation ahead of time, you will be prepared and to talk with potential evaluators and assess how they can be of assistance to you.
Evaluation has a Cost

- The budget for evaluation often totals between 5-10% of the awarded amount.

- Evaluator should be contacted soon after the evaluation goals, objectives, and possible methodologies are thought through.
Cost

Larger grants = more work and higher costs

- PI can sometimes evaluate own project—but there are limitations—may happen with small projects

- Larger projects—involve developing an evaluation report that is in-depth
What Determines the Cost of an Evaluation?

<table>
<thead>
<tr>
<th>Possible Tasks in an Evaluation</th>
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<tbody>
<tr>
<td>• Initial Consultation &amp; Planning</td>
</tr>
<tr>
<td>• Development of an evaluation plan and/or logic model</td>
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<tr>
<td>• Literature Review</td>
</tr>
<tr>
<td>• Data Request / Data Tools (CIERP / School Districts/ State)</td>
</tr>
<tr>
<td>• Survey Development</td>
</tr>
<tr>
<td>• Survey Administration</td>
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<tr>
<td>• Survey Results Summary</td>
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</table>
What Do You Expect from the Evaluator?

• Coordination of the evaluation
• Development of Instruments
• Synthesis of literature about evaluation in the area
• Data Analysis and Reports
Other Considerations

• Identification of Content Experts
  A researcher in math or science may not have expertise in pedagogy
  – e.g., math education, science education, engineering education projects
  – Biostatistician for environmental/ public health projects

• ORSP Expertise Database
Finding an Evaluator

www.eval.org
Questions?

Contact Denise at x5117 or dcarrejo2@utep.edu