Evaluation of R&D Grant results: thoughts about the challenges

Workshop on Tracking and Evaluation of RD&D Programs at DOE
Hosted by RFF

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EPA POC: Katherine Dawes
EPA Evaluation Officer (Acting)
dawes.katherine@epa.gov
What is our evaluation question?

And what data do we need to answer the question?

What knowledge and/or technology was developed through this R&D grant program? *(Outcomes)*

What were the R&D project results? *(Outputs)*

Was this grant program the best mechanism for generating R&D? *(Impact)*
EPA Grant Context*

* Includes R&D

2020

- $4 Billion in annual grant appropriations
- Over 100 grant programs
- 1400 grant program staff

2023

- $5 Billion in annual grant appropriations
- $80 billion in supplemental grant appropriations
- Over 100 grant programs + new grant programs
- 1400 grant program staff + new grant program staff
Data and reporting
How do we measure results?

Grants

- Difficult to standardize and consolidate across programs
- Challenging to track collective progress
- Data is collected via word documents, pdfs, forms, email

- Missing data, hard to find data
- Variable definitions, variable frequency
- CBI, PII

462 Survey Responses
457 (99%)
257 (56%)
238 (52%)
145 (31%)

R&D

Research Projects
- Total Number of Abstracts: 7740
- Total Number of Abstracts, excluding Center sub-projects: 6412
- Total Number of Progress Reports: 6087
- Total Number of Final Reports: 4079
- Total Number of Open Projects: 224

Publications:
- Total Number of Publications: 54410
- Total Number of Publications with Full-Text Pubs: 12306
- Total Number of Journal Articles: 17549
- Total Number of Publications with Publication Abstracts: 15781
- Total Number of Journals Containing Articles: 2905

Institutions:
- Total Number of Institutions: 1637
- Total Number of Researchers: 16450
- Principle Investigator: 5707
- Co-Investigators (may also be included in above number): 1203

EPA Learning Agenda: Grants Commitments Met (September 2022, March 2023)

Summary of the research information housed in EPA’s Grantee Research Project Results DB.
Evaluation
How do we assess R&D grant program outcomes or impact?

https://www.dol.gov/agencies/eta/skills-training-grants/community-colleges/evaluation

Figure A-1. A Logical Framework for a Basic Science Program Reference
OUR PATH FORWARD?

- Better data
- New evaluation planning approaches
- Evolve our R&D evaluation culture and expectations
- New partnerships
References

- EPA Learning Agenda: Grants Commitments Met (Year 1) (pdf) (EPA, September 2022)
- EPA Learning Agenda: Grants Commitments Met (Year 2) (pdf) (EPA, March 2023)
- EPA Order 5700.7A1: EPA's Policy for Environmental Results under EPA Assistance Agreements (EPA, January 2005, updated October 2021)
- Grantee Research Project Results (EPA/ORD, online)

- National Evaluation of Trade Adjustment Assistance Community College and Career Training (DOL/ETA, online)
- Economic Report of the President, Chapter 7: Evaluation As A Tool For Improving Federal Programs (March 2014)

- Evaluating Research Efficiency in the U.S. Environmental Protection Agency (National Research Council, 2008)
- Overview of Evaluation Methods for R&D Programs (EERE/DOE, March 2007)