

Evaluation of NIH's Science Education Partnership Award (SEPA) Program



Scientific Management Review Board
Pre-College Engagement in Biomedical Science
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 National Institutes of Health

 U.S. Department of Health and Human Services

SEPA SCIENCE EDUCATION
PARTNERSHIP AWARD
Supported by the National Institutes of Health

Established 1991

Genesis:

- Inquiry-based STEM educational resources to increase the numbers of urban, rural and minority students considering research and medical careers

Partnerships:

- Scientists and clinicians partnering with educators, community organizations and science centers

Goals:

- Increased diversity in the workforce
- Increased public health literacy

Status FY 2014:

- SEPA R25 Awards = 57
- Budget = \$18.5M

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Evolution of SEPA *Project* Evaluation Rigor

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Evolution of SEPA Project Evaluation Rigor

- Pre-2004
 - Evaluation encouraged but not scored
 - Project evaluation by PI
- 2004 (RFA-RR-04-004)
 - 10% of requested budget for evaluation
 - External evaluator required
- 2006 – 2008 (PAR-06-549)
 - Encourage Randomized Controlled Trial (RCT) or Case-Comparison
 - Key Personnel must have evaluation expertise

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Evolution of SEPA Project Evaluation Rigor

- 2010 -2012 (PAR-10-206)
 - Logic model encouraged
 - External and internal evaluation team required

- 2014 – 2016 (PAR-14-228)
 - May 2014 release
 - November 2014 review
 - January 2015 Council of Councils Review

Department of Health and Human Services	
Part 1. Overview Information	
Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	Division of Program Coordination, Planning and Strategic Initiatives Office of Research Infrastructure Programs (ORIP)
Funding Opportunity Title	NIH Science Education Partnership Award (SEPA) (R25)
Activity Code	R25 Education Projects
Announcement Type	This is a reissue of PAR-10-206
Related Notices	None
Funding Opportunity Announcement (FOA) Number	PAR-14-228

Evaluation Plan

- SEPA classroom-based P-12 projects *must utilize either a Randomized Controlled Trial (RCT) or a Well-Matched Comparison study evaluation design* to evaluate project effectiveness.

- The proposed evaluation plan *must include a Logic Model*.

- It is *recommended* that SEPA projects have an *Advisory Committee for independent feedback* on content development and project management

SEPA Program Evaluation

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 Highlights <small>Highlights of GAO-12-108, a report to congressional requesters</small>	January 2012
	SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION Strategic Planning Needed to Better Manage Overlapping Programs across Multiple Agencies

- *Agencies' limited use of performance measures and evaluations may hamper their ability to assess the effectiveness of their individual programs as well as the overall STEM education effort.*
- *A majority of programs did not conduct comprehensive evaluations since 2005 to assess effectiveness.*

GAO-12-108 , January 2012

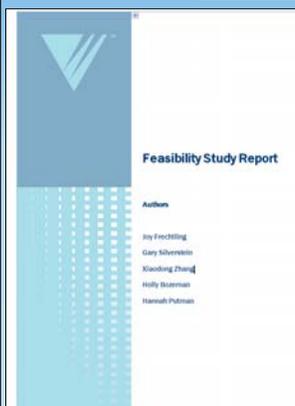
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September 2010 SEPA Program Evaluation *Feasibility Report*

Overview of the Evaluation and Questions to Be Addressed

1. The evaluation should be designed to provide information for both *program improvement and assessment of program impacts*.
2. SEPA should be *examined at multiple levels*: the program as a whole, the program as it relates to its various potential target populations, and the program's subcomponents.
3. The evaluation should examine the program within the *context of the overall work of the NCRR, NIH, and other federal funding for science, technology, engineering, and mathematics (STEM) educational programs*.
4. The evaluation should *draw on a variety of data sources*, both primary and secondary.
5. The evaluation should be designed to keep the burden on respondents as low as possible

September 2014 - SEPA Program Process Evaluation

Evaluation of the Science Education Partnership Award (SEPA) Program

Statement of Work:

- This evaluation will be a Process Evaluation that will *focus on the SEPA portfolio, the development of partnerships, and the rigor of project evaluations*.
- The questions identified for examination during this process evaluation were selected because of their importance in documenting how the SEPA program:
 - Functions at both the program and awardee levels
 - Contributes to the NIH goals of diversity in the workforce and public health literacy
 - Interacts with other Federal P-12 STEM programs.



GAO
Accountability * Integrity * Reliability
Highlights
Highlights of GAO-12-108, a report to congressional requesters

January 2012

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION

Strategic Planning Needed to Better Manage Overlapping Programs across Multiple Agencies

- Agencies' limited use of performance measures and evaluations may hamper their ability to assess the effectiveness of their individual programs as well as the overall STEM education effort.
- A majority of programs did not conduct comprehensive evaluations since 2005 to assess effectiveness.
- Completed STEM education evaluation results had not always been disseminated in a fashion that facilitated knowledge sharing between both practitioners and researchers.

GAO-12-108 , January 2012

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FEDERAL SCIENCE, TECHNOLOGY,
ENGINEERING, AND MATHEMATICS
(STEM) EDUCATION
5-YEAR STRATEGIC PLAN

P-12 CoSTEM Interagency Working Group

Strategic Objective 1.1:
Identify, develop, test, and support effective teacher preparation efforts that encourage teachers' use of evidence-based practices that provide students with rich STEM learning opportunities.

Strategic Objective 1.2:
Increase the number and quality of authentic STEM experiences for pre- and in-service P-12 teachers participating in Federally-supported internship, fellowship, and scholarship programs.

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Update on SEPA Presentation to SMRB
March 2014
Vanderbilt/Nashville model

Nature of *effective pre-college interventions* that
produce a robust biomedical workforce pipeline

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School for Science and Math (SSMV) Vanderbilt

- 9-12th grade research-based laboratory program
 - Open to all Nashville students
 - Traditional high school courses
 - 1 day/week for 4-years at Vanderbilt
- Training
 - Vanderbilt faculty, post-doctoral and graduate student mentors
 - Science and math curriculum
 - Critical thinking skills and problem solving
 - Authentic laboratory research experience
- Evaluation
 - RCT student selection from all Nashville Middle Schools
 - Quantitative: student scores
 - Qualitative: pre/post, mentor surveys
 - Longitudinal student tracking

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Outcomes – SSMV at Vanderbilt

- SSMV student college matriculation rate (98%)
- Students attending top 50 colleges and universities
 - SSMV (60%)
 - MNPS academic magnet schools (20%)
- Longitudinal studies (early data)
 - Continuing in STEM disciplines
 - SSMV (79%)
 - MNPS academic magnet schools (53%)
 - Nationally (10%)

Eeds, A., Vanags, C., Creamer, J., Loveless, M., Dixon, A., Sperling, H., et al. (2014). The School for Science and Math at Vanderbilt: An innovative research-based program for high school students. *CBE—Life Sciences Education*, 13, 297–310.

Science Education Partnership Award (SEPA)



West Virginia Health Sciences and Technology Academy (HSTA)
West Virginia University, Morgantown, WV
Students Design Public Health Clinical Trials, R25 RR023274

Teaching to Learn: WV-HSTA Students Take CBPR to Their Community (R25 OD010495)