

STEM Education

National Science Foundation Awards: What Are Common Elements for Success?: Value-Added Strategy

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Value Added: Proven Competitive Strategy

Enhance your proposed project by leveraging national, state, or local resources that have proven to be effective.



Engagement w/ National Initiatives

NSF Hispanic-Serving Institution Award - \$2.5M

Three CSUs--Fresno, Bakersfield, Stanislaus--came together to redesign for success lower-division, high failure rate Math and Chem courses through “Ideas Labs” (Knowinnovation).



Engagement w/ National Initiatives

NSF ADVANCE Award: “Kindling Inter-university Networks for Diverse (KIND) Engineering Faculty Advancement in the California State University System.” CSU wide project effort enhanced through participation in [ASPIRE “IChange.”](#)

Engagement w/ National Initiatives

NSF Scholarships in STEM (S-STEM) Award: Computer Science: “Undergraduate Scholar Education and Research (USHER).” The project is enhanced by “STEM Impact Identity.” Training now delivered by ARIS: Advancing Research Impact in Society.

Reference: Risien and Storksdieck, “Unveiling Impact Identity: A Path for Connecting Science and Society.”

Grand Canyon Trail of Time Exhibition
(STEM Impact Identity Outcome)



Engagement w/ National Initiatives

Department of Education: CSM, LCOE, and JCAST came together in the “STEAM: Enriched Pathways” award. “STEAM” implements CUREs and WBLOs. *See [Erin Dolan’s A Guide To Course-based Undergraduate Research](#) and USDE’s [Work-based Learning Toolkit](#).*

Many other NSF initiatives can be leveraged, e.g., NSF 10 Big Ideas...

The “Big Idea” INCLUDES program was renewed with the CHIPS and Science Act (2022) and renamed “Eddie Bernice Johnson INCLUDES” program.

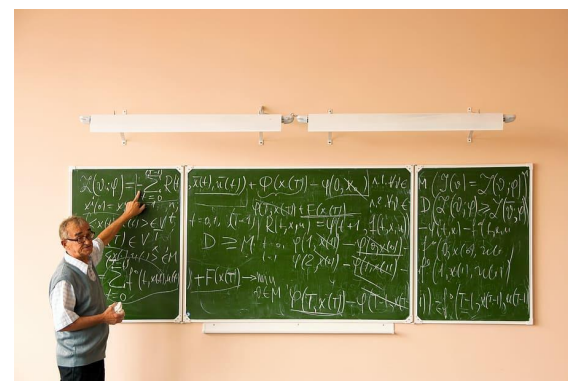




Engagement w/ National Initiatives

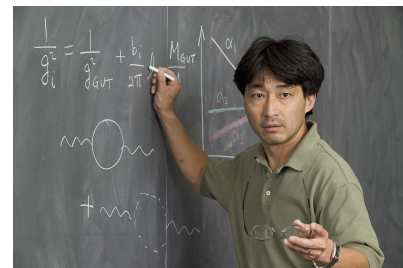
Contact the NSF Program Officer. S/he can offer experienced advice. Not infrequently, s/he will suggest an NSF-funded initiative to be leveraged. Sometimes the PO will redirect you to another NSF program that is the best fit for your proposed project.

Value-added Can Be State-level



Department of Mathematics NSF Robert Noyce Teacher Scholarship awards (Master's Level) enrolled the entire cohort in the Leadership Initiative of the [San Joaquin Valley Mathematics Project](#), a branch of the [California Mathematics Project](#).

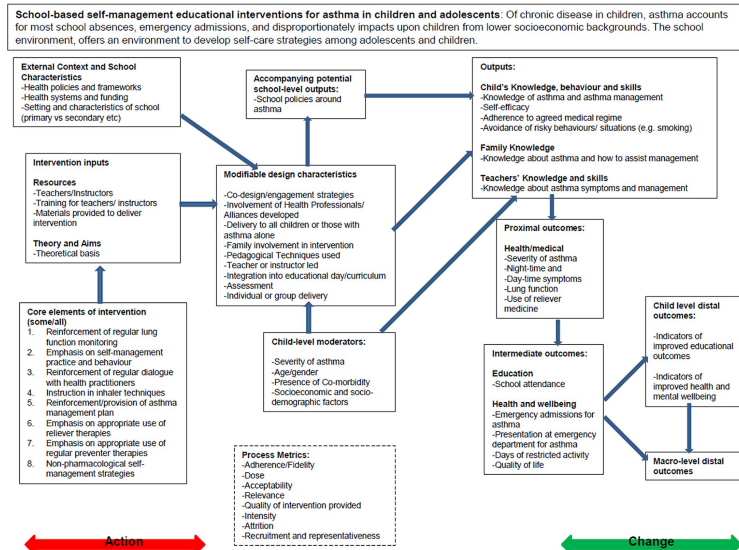
Value-added Can Be State-level



Department of Mathematics NSF Robert Noyce Teacher Scholarship awards (Bachelor's level) supported 1st cohort entering the ITEP (Integrated Teacher Education Program). The CSU Chancellor's Office supported ITEPs to accelerate the pathway to becoming a teacher, and Fresno State was just launching ITEP.

Independent Evaluators: More Value Added

- In demand
- Highest credibility
- Most often required for major applications



Independent Evaluator or Big Center?

An independent evaluator can pay more attention to your award, his or her expertise can align best with your work, and his or her services cost less.

A 'big center' evaluation often charges more for its services, provides more general expertise (such as STEM education vs. Math education), and has contracted evaluators with a bunch of awards.



How do I find an independent evaluator?

Ask for referrals from colleagues about *their* colleagues: What external evaluators have they worked with?

Professional Sources:

American Evaluation Association
Institute of Education Sciences

Engage w/ Colleagues



Our own NSF Awardees for STEM Education or STEM Professional Development who are available to discuss ways to success:

1. Dr. Oscar Vega (Mathematics)
2. Dr. Alex Liu (Computer Science)
3. Dr. Yaomingxin Lu (Mathematics)
4. Dr. Rajee Amarasinghe (Mathematics)
5. Dr. Oka (Engineering)
6. Dr. Zoulikha Mouffak (Engineering)

Reach out anytime:

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