Science, Technology, Engineering and Mathematics Talent Expansion Program (STEP)

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STEP Goals

Type 1 projects

- **Seek to increase the number of students (U.S. citizens or permanent residents) receiving associate or baccalaureate degrees in established or emerging fields within science, technology, engineering, and mathematics (STEM)**

Type 2 projects

- **Support educational research on associate or baccalaureate degree attainment in STEM**

2009 STEP Solicitation

- **Three categories of Type 1 proposals**
  - **Type 1A – For 5-year implementation projects at institutions with no prior STEP support**
  - **Type 1B – For 5-year implementation projects at institutions that have been the lead on a previous Type 1 award**
  - **Type 1C – Follow-on grants (1-3 years) for existing Type 1 awardees**
- **Most proposals are Type 1A**
- **Next proposal deadline: ~ September, 2010**

STEP Request Levels

- **Budget about $26 million per year**
- **Type 1 projects funded for 5 years at $2 M, $1 M, or $500 K (additional amounts for significant partnerships with a community college)**
- **Type 2 projects funded for 2-4 years for up to $1.5 M**

Submission & Funding Trends

Fiscal Year	Type 1		Type 2	
	Reviewed	Awarded	Reviewed	Awarded
2005	170	22	16	2
2006	141	22	-	-
2007	135	19	21	2
2008	139	20	14	2
2009	153	24	11	2
2010	199	~20	14	1-3

FY10 Submissions

Lead Institution	Number of Proposals	
Two-year	**30**	
Bachelors	**53**	
Masters	**30**	
Doctoral	**67**	
Type 2	**11**	

NOTE: Many proposals include one or more partners of a different institutional type

Competitive STEP Proposals

- **Identify barriers at the institution to student success in STEM fields**
- **Propose a set of best practices to allow students to overcome those barriers**
  - **Bridge programs: high school to college, 2-year to 4-year**
  - **Student-centered STEM introductory courses and curricula (pedagogy and content)**
  - **Mentoring by faculty, graduate students, peers**
  - **Experiential learning and early undergraduate research**
  - **Financial incentives to students**
  - **Exposure of students to potential careers**
  - **Resolving articulation issues for 2-year to 4-year transitions**

Proposals should include:

- ***The specific strategies*** to be used during the grant period to increase the number of STEM graduates
- ***An explanation*** of why the proposed activities are not expected to cause decreases in enrollments in other STEM fields
- ***The benchmarks*** that will be used to measure progress as the project moves forward
- ***A clear statement*** of which of the proposed activities, if successful, would be expected to be institutionalized by the end of the grant period

Outcomes Expected from Type 1 Projects

- ***Significant progress*** **toward achieving the proposed increases in the number of students in STEM**
- ***A description of the activities*** **institutionalized as a result of the project**
- ***A description of continued efforts*** **at the institution to increase the number of students in STEM**
- ***An evaluation*** **using the benchmarks defined in the proposal informing the broader community of the progress and findings of the grant project**
- ***Dissemination*** **of project processes and results to the broader community**

STEP Review Criteria

NSF-WIDE CRITERIA

(Described in STEP Program Solicitation)

- **Intellectual Merit**
- **Broader Impact**

STEP Review Criteria

PROJECT BACKGROUND

- **How well does the proposed project fit within the institution's mission?**
- **Does the proposed effort build upon results of prior efforts to increase interest in STEM?**
  - **ESPECIALLY critical for Type 1B and 1C proposals!**

STEP Review Criteria

IMPLEMENTATION STRATEGIES

- **How effective will the identified strategies be in increasing the number of students graduating in STEM fields?**
  - **What evidence does the proposal provide that the selected strategies are likely to be effective?**
  - **Are the proposed increases in STEM graduates realistic?**
  - **Will there be a net increase in STEM graduates, or just disciplinary shifts?**

STEP Review Criteria

PROJECT IMPLEMENTATION and PROJECT MANAGEMENT

- How strong is the management plan?
- How strong is the project team?
- Is the composition of the team appropriate?
- How well does the budget align with the project goals and activities?

STEP Review Criteria

EVALUATION

- **How strong is the plan for evaluating the project?**

- **Does the plan include indicators and benchmarks to determine which strategies are effective, and why?**

STEP Review Criteria

SUSTAINABILITY

- **What activities, if successful, would be institutionalized by the end of the grant period?**
  - **Not everything needs to be sustainable, but the proposal should describe what will and will not be sustained.**

STEP Review Criteria

INSTITUTIONAL COMMITMENT

- **What is the evidence that the institution is committed to the project's goals?**

Frequently Asked Questions

This proposal has a strong implementation plan which should be effective. But it is not very innovative. How much emphasis should be placed on innovation?

The emphasis in the proposal should be on the **adaptation and implementation of best practices**. (For innovative strategies, include compelling arguments for increases in STEM graduates.)

Frequently Asked Questions

A proposal includes a great outreach program for K-12 students and/or teachers. How should this strategy be evaluated?

Appropriate **only** if expected to result in additional STEM majors and graduates at the institution(s) **within** the grant period.

Frequently Asked Questions

Is a proposal that targets underrepresented students or women as STEM graduates better than one that does not?

A narrow target audience may reduce the likelihood of success of achieving the STEP's primary goal – increasing the total number of STEM graduates.

Frequently Asked Questions

A proposed project aims only at increasing graduates in one science discipline. How should this be viewed?

This approach may be OK if the arguments are convincing and the numbers are significant, but not if it just results in a disciplinary shift of students.

Frequently Asked Questions

Very little of the STEP budget is being used for direct student support, like scholarships. How should this be viewed?

Fundamentally, STEP is about “infrastructure” change. It is not “principally “ a scholarship program.