An Overview of the Robert Noyce Teacher Scholarship Program

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Robert Noyce Teacher Scholarship Program

2002: established scholarships and stipends

2007: The America COMPETES Act

The goal is to encourage talented STEM majors and STEM professionals to become K-12 STEM teachers.

Scholarship, stipend, and fellowship recipients must teach in a high-need school district for a specified number of years.

Institutions are responsible for tracking recipients and monitoring teacher service (or repayment).
Eligibility for a Grant in NSF15530

Proposals may be submitted by

- Universities and two- or four-year colleges (including community colleges, tribal colleges, and minority-serving institutions) accredited in, and having a campus located in, the United States, or consortia of such institutions, or U.S. nonprofit entities that have established consortia among such institutions of higher education.

- In addition, for Track 4: Research on the Preparation, Recruitment, and Retention of K-12 STEM Teachers, professional societies and similar organizations that are directly associated with educational or research activities.

In solicitation 15-530, there are no restrictions on the number of proposals per organization or on the number of proposals per PI or Co-PI.
Track 1 (S&S)
Scholarships & Stipends
undergraduate STEM majors and/or STEM career changers

Track 2 (TF)
NSF Teaching Fellowships
STEM career changers

Track 3 (MTF)
NSF Master Teaching Fellowships
exemplary, experienced STEM teachers

Track 4 (Noyce Research)
Research on the Preparation, Recruitment, and Retention of K-12 STEM Teachers

Robert Noyce Teacher Scholarship Program
Solicitation NSF 15-530
Proposals must provide evidence of exemplary teacher preparation and development efforts.

Proposals must provide evidence of genuine collaboration between faculty in STEM and faculty in education.

Every project is expected to be grounded in and contribute to the knowledge base.

Proposal Due Dates

March 17, 2015 for FY 2015 funds

August 4, 2015 for FY 2016 funds
TRACKS 1, 2, & 3
Definitions of Terms

Scholarship

In S&S Track (1), funds awarded to...
An undergraduate STEM major (≥ junior status)
A post-bac (when the program requires a fifth year)

Stipend

In S&S Track (1), funds awarded to...
A STEM professional who enrolls in a teacher certification program

Fellowship

Funds awarded to...
a STEM professional in the TF Track (2)
a STEM teacher in the MTF track (3)
## Definitions of Terms

**High-Need Local Educational Agency (LEA)**  
(e.g., a high-need school district)

| A high percentage of individuals from families with incomes below the poverty line; | A high percentage of secondary school teachers not teaching in the content area in which they were trained to teach; | A high teacher turnover rate. |

Track 1 (S&S) Scholarships & Stipends

undergraduate STEM majors and/or STEM career changers

Major in STEM, participate in project program, and teach in a high-need school district for 2 years for each year of support.

Phase 1:
up to $1.2M for up to 5 years

Phase 2:
up to $800K for up to 5 years

Capacity Building:
up to $75K for up to 1 year
Track 1 (S&S)
Scholarships & Stipends

undergraduate STEM majors and/or STEM career changers

Required Partners

STEM Faculty
Education Faculty
Schools/LEAs
Track 1 (S&S) Scholarships & Stipends

undergraduate STEM majors and/or STEM career changers

Scholarships for Undergraduate STEM Majors
- Junior and Senior STEM majors [and post-bacs]
- ≥ $10,000 per year not to exceed cost of attendance

Stipends for STEM Professionals
- Career-changers enroll in a teacher certification program
- ≥ $10,000 one year not to exceed cost of attendance

and/or
Track 1 (S&S)
Scholarships & Stipends
undergraduate STEM majors and/or STEM career changers

Some Additional Considerations

- Internships for freshman and sophomores to attract STEM majors into K-12 STEM teaching careers.
- Recruiting STEM majors who may not have previously considered a career in K-12 STEM teaching.
- Involving master teachers.
Earn teacher certification through a master’s degree program and teach in a high-need school district for 4 years.

Phase 1:
up to $3M for up to 5 (or 6) years
Cost-sharing required

Phase 2:
up to $1.8M for up to 5 years

Capacity Building:
up to $75K for up to 1 year

Phase 1: up to $3M for up to 5 (or 6) years
Cost-sharing required

Phase 2: up to $1.8M for up to 5 years

Capacity Building: up to $75K for up to 1 year

Track 2 (TF)
NSF Teaching Fellowships
STEM career changers
# NSF Teaching Fellowships

## Track 2 (TF)

### STEM career changers

#### Required Partners

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>An IHE department</td>
<td>that provides an advanced program within a specific STEM discipline</td>
</tr>
<tr>
<td>An IHE department</td>
<td>that provides a teacher preparation program</td>
</tr>
<tr>
<td>At least one high-need LEA</td>
<td>and at least one public school served by the LEA</td>
</tr>
<tr>
<td>At least one nonprofit organization</td>
<td></td>
</tr>
</tbody>
</table>

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[Image and diagram as per the text provided]
Track 2 (TF)
NSF Teaching Fellowships
STEM career changers

Fellowship and Salary Supplement

≥ $10,000 while enrolled in the 1-year master’s degree program

≥ $10,000 per year for 4 years while teaching in a high-need school district

Take on leadership role within the school or LEA

Mentoring

Curriculum development

Plan/implement PD

Participate in pre-service education
National Science Foundation

Track 3 (MTF)
NSF Master Teaching Fellowships
exemplary, experienced STEM teachers

Already have a master’s degree in their field, participate in project program to develop master teachers, and teach in a high-need school district for 5 years

Phase 1: up to $3M for up to 5 (or 6) years
Phase 2: up to $1.8M for up to 5 years
Capacity Building: up to $75K for up to 1 year

Cost-sharing required
### Required Partners

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td>An IHE department that provides an advanced program within a specific STEM discipline</td>
<td>An IHE department that provides a teacher preparation program</td>
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<td>At least one high-need LEA and at least one public school served by the LEA</td>
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<td>At least one nonprofit organization</td>
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**Track 3 (MTF)**

**NSF Master Teaching Fellowships**

- exemplar, experienced STEM teachers
Track 3 (MTF)
NSF Master Teaching Fellowships
exemplary, experienced STEM teachers

Fellowship and Salary Supplement
≥ $10,000 per year for 5 years while teaching in a high-need school district

Take on leadership role within the school or LEA
- Mentoring
- Curriculum development
- Plan/implement PD
- Participate in pre-service education
Scholar/Fellow Obligations

• Provide the institution with annual certification of employment.
• Participate in activities (including surveys) conducted as part of institution project-level and NSF program-level evaluation.
• Complete the teaching commitment or repay the scholarship/stipend/fellowship as a loan.

See the solicitation for additional expectations and details.
Institutional Obligations

• Ensure the scholarship/stipend/fellowship recipients accept the terms.

• Monitor (including tracking) and report on the compliance of recipients (including repayment if necessary).

• Supply relevant statistical and demographic data as requested.

• Cooperate with NSF third-party project monitoring.

See the solicitation for additional expectations and details.
## Comparison of Phases in Tracks 1, 2, 3

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Capacity Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide Scholarships/ Stipends/ Fellowships</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Evidence-based Models and Strategies</td>
<td>Yes</td>
<td>Yes</td>
<td>Develop</td>
</tr>
<tr>
<td>Strong Partnerships</td>
<td>Yes</td>
<td>Yes</td>
<td>Develop</td>
</tr>
<tr>
<td>Evaluation and Research</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes Longitudinal</td>
</tr>
<tr>
<td>Contribute to Knowledge Base</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost-sharing</td>
<td>Tracks 2, 3</td>
<td>Tracks 2, 3</td>
<td>No</td>
</tr>
<tr>
<td>60% on <em>F1. Stipends</em></td>
<td>Tracks 1, 2, 3</td>
<td>Tracks 1, 2, 3</td>
<td>No</td>
</tr>
</tbody>
</table>
TRACK 4 (NOYCE RESEARCH)
Type A: Noyce Partnerships for Research on STEM Teacher Preparation

- Researchers + Noyce projects
- Up to $450K + up to $50K x N for up to 3 years

Type B: Research on Preparing STEM Teachers for the Future

- Designated research priority areas (NRC 2010)
- Up to $800K for up to 3 years

Track 4 (Noyce Research) Research on the Preparation, Recruitment, and Retention of K-12 STEM Teachers
NRC (2010) Research Priority Areas

- features that make programs and/or pathways effective and attractive to academically accomplished teacher candidates in STEM fields;
- characteristics of clinical experiences that affect STEM outcomes (1) for teacher candidates and (2) for the students of those candidates;
- aspects/characteristics/components of induction programs that make them attractive and effective in retaining academically accomplished STEM teachers in high-need educational settings;
- ways that teachers’ knowledge (e.g., STEM content knowledge, STEM pedagogical competence, effectiveness of teacher candidates) and non-cognitive factors (e.g., commitment to teaching in high-need schools) affect outcomes for those preparing to be teachers and students who are taught by these new teachers.

Additional Comments

• The NRC research priority areas are not the only interesting issues that need to be addressed.

• The program would like to have a portfolio that includes a wide range of methodological approaches.

• There are other programs that accept education research proposals related to STEM teacher preparation (e.g., DRK-12, ECR, IUSE, STEM +C). To determine best fit, contact relevant program officers.
Track 4 Noyce Research

Type A: Noyce Partnerships for Research on STEM Teacher Preparation

Type B: Research on Preparing STEM Teachers for the Future

Research projects that are partnerships with Noyce projects AND addressing one or more of the research priority areas may submit to either Type (but identify one).
PROPOSAL PREPARATION
Project Summary (1 page)

Overview: The first sentence must:

- indicate the specific Track and category of the proposal (e.g., S&S Phase 1); and
- name all institutions, including high-need local educational agencies and non-profit organizations as appropriate, that are involved in the proposal.

Intellectual Merit

Broader Impacts
Project Description (15 pages)

Tracks 1, 2, and 3 (S&S, TF, MTF)
Be sure to include descriptions of the proposed

• strategies for recruitment,
• strategies for monitoring and enforcing compliance with the teaching commitment/repayment,
• evaluation and research plan,
• plans for dissemination of the results of the project and for contributing to the knowledge base.

See Section V of the solicitation for additional details.
Project Description (15 pages)

Track 4 (Noyce Research)
Be sure to include descriptions of the proposed

- linkages to the literature base,
- well-focused research questions/hypotheses,
- methods aligned with the theory and questions/hypotheses,
- contribution to/implications for implementation,
- contribution to knowledge and theory,
- strategies for dissemination,
- plans for objective external feedback.

See Section V of the solicitation for additional details.
Additional Resources

nsfnoyce.org


- includes the *NSF Grant Proposal Guide*
- includes detailed instructions on items such as required biosketches, required Data Management Plan, IRB approval, allowable budget items, etc.

**NSF 13-126: Common Guidelines for Education Research and Development (ED and NSF)**

- and **NSF 13-127: Related FAQs**
PROPOSAL PROCESSING
Proposal Processing and Timeline

- Organization submits via FastLane
- NSF Program
  - Ad hoc
  - Panel
  - Program Officers
  - Recommend
  - Division Director Concur
  - Decline
  - Award
  - Organization

Timeline:
- Proposal Receipt at NSF
- 6 Months
- 30 Days
- DD Concur
- DGA Award
Who reviews?

Experts in

• STEM education
• STEM content
• research/assessment methodology
• cognitive science, psychology, sociology, anthropology
• school-based experts
• others as appropriate for the set of proposals submitted
NSF Merit Review Criteria

**Guiding Principles**

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.

- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals.

- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects.
NSF Merit Review Criteria

Required

- **Intellectual Merit**: The intellectual Merit criterion encompasses the potential to advance knowledge; and

- **Broader Impacts**: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.
Intellectual Merit

• Importance to advancing knowledge and understanding
• Creative, original, and/or potentially transformative
• Proposers’ qualifications
• Sufficient access to resources
• Proposed activity well-conceived and organized
• Data management plan
• Post-doc mentoring plan, if applicable
• Evaluation
Broader Impacts

• Promote teaching, training, and learning?
• Broaden the participation of underrepresented groups? New institutions? Influence on field? Etc.
• Enhance the infrastructure for research and education? Partnership development?
• Disseminate results broadly?
• Benefit society?
MOCK REVIEW EXERCISE
Has the PI persuaded you that an adequate pool of students will be recruited?
Has the PI persuaded you that the collaboration and partnerships will function?
What aspects of the administration and management plan did the most to convince you that the project will be well run?
Consider the monitoring/enforcing compliance strategies presented in the proposal. Are these plans likely to be effective?
PROPOSAL WRITING TIPS
What Makes a Proposal Competitive?

- Original ideas
- Succinct, focused project plan
- Realistic amount of work
- Sufficient detail provided
- Cost effective
- High impact
- Knowledge and experience of PIs
- Contribution to the field
- Rationale and evidence of potential effectiveness
- Likelihood the project will be sustained
- Solid evaluation plan
Common Weaknesses: Scholarship Track

- Proposal does not follow guidelines for Noyce Program
- Failure to indicate students will complete STEM major (not change to Science Education or Math Education major)
- Little information about teacher preparation program
- Unrealistic projections
- Recruitment and selection strategies not well described
- Lack of support for new teachers
- Lack of involvement of STEM faculty (or education faculty)
- Lacks plans for monitoring compliance with teaching requirement
- Weak evaluation or lacks objective evaluator
- Does not address Prior Results or Lessons Learned
- Lacks details
Common Weaknesses of TF/MTF Proposals

- Insufficient details for preservice and induction program for Teaching Fellows and professional development program for Master Teaching Fellows
- Vague recruitment plans
- Selection plans do not follow guidelines
- Master Teacher roles and responsibilities not discussed
- Matching funds not identified
- Role of non-profit organization not clear
- School district partnership not strong
- Evaluation weak
Tips for Success

- Be aware of other projects and advances in the field
- Cite the literature
- Provide details
- Discuss prior results as applicable
- Include evaluation plan with timelines and benchmarks
- Put yourself in the reviewers’ place
- Consider reviewers’ comments if resubmitting proposal
- Have someone else read the proposal
- Spell check; grammar check
- Call or email NSF Program Officers
Contact Information

- Teri J. Murphy, Lead Program Director, (703) 292-2109, tmurphy@nsf.gov
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