Overview of Robert Noyce Teacher Scholarship Program

NSF 16-559

Noyce Summit
Stimulating Research and Innovation for Preservice Education of STEM Teachers in High-Need Schools
July 2016

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NSF Directorate for Education and Human Resources (EHR)
Division of Undergraduate Education (DUE)
Outline for Session

Part 1 (35 mins)
- Background Info on Noyce Program
  - Solicitation Changes
- Noyce Impact
- Program Overview

Part 2 (20 mins)
- Detailed Discussion of Track 4: Noyce Research

Part 3 (20 mins)
- Q & A/Discussion
Robert Noyce Teacher Scholarship Program
Proposal Due Dates for NSF 16-559

- Tuesday, September 6, 2016 for FY17 funds
- First Tuesday of September, Annually Thereafter
“If America is going to compete for the jobs and industries of tomorrow, we need to make sure our children are getting the best education possible. Teachers matter, and great teachers deserve our support.”

~ President Obama
Robert Noyce Teacher Scholarship Program

Act of Congress

2002: established scholarships and stipends

2007/2010: The America COMPETES Act added NSF TF and NSF MTF conditions

2015: STEM Education Act allows for MTFs holding bachelor’s degrees in their field

The primary program 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).
## Definitions of Terms

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

<table>
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<tr>
<th>A high percentage of individuals from families with incomes below the poverty line;</th>
<th>A high percentage of secondary school teachers not teaching in the content area in which they were trained to teach;</th>
<th>A high teacher turnover rate.</th>
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<td>or</td>
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Eligibility for a Grant in NSF16-559

- Proposals may be submitted by:
  - One or more universities, four-year colleges, and/or two-year colleges; or
  - U.S. nonprofit entities that have established consortia among such institutions of higher education (IHE); or
  - Professional societies and similar organizations that are directly associated with educational or research activities (for Track 4: Noyce Research **only**)

- PI/Co-PI team **must** include at least one faculty member from a science, technology, engineering, or mathematics department and at least one education faculty member.

- No restrictions on the number of proposals per organization or on the number of proposals per PI or Co-PI.
NSF 16-559: Changes from NSF 15-530

1. Phases have been eliminated.

2. Previously funded Noyce grantees may submit proposals in any track. However, in a description of Previously Funded Noyce Work, proposers must include:
   - Strong evidence of the success of, and what was learned from, the previous Noyce award(s)
     - and/or project challenges and how the new project will be able to overcome them;
   - Data to demonstrate workforce need in high-need LEA and capacity to recruit candidates;
   - Plan for following Noyce recipients longitudinally;
   - Detail of what new may be learned from the proposed project;
   - Plans for monitoring (including tracking) and evaluation of new cohorts;
   - Plans for evaluating the impact of the program on recruitment and retention of STEM teachers, the impact on the IHE, and the effectiveness of the Noyce scholarship/stipend recipients as K-12 STEM teachers.
NSF 16-559: Changes from NSF 15-530

3. Tracks 1 & 2 must now address how they will specifically prepare recipients to teach in high-need LEAs.

4. Tracks 1, 2, & 3 include greater specificity regarding Institutional and Recipient obligations.

5. Track 3 now also includes teachers who possess a bachelor’s degree in their field.

6. Track 4 now calls for research specific to the issue of teacher effectiveness, persistence, and retention in high-need LEAs.
Noyce Impact
Look at what has been funded

Search Awards

Advanced Search
Look at what has been funded
Noyce Award Data (FY2002-2015)

- 539 Awards since 2002

- Over 550 colleges and universities and over 2200 school districts in 50 states, Puerto Rico, Virgin Islands, Guam, and DC.
Noyce Disciplines
FY 2002-2015

- COMPUTING
- EARTH SCIENCES
- ENGINEERING
- CHEMISTRY
- PHYSICS
- BIOLOGICAL SCIENCES
- SOCIAL and BEHAVIORAL SCIENCES
- MATHEMATICAL SCIENCES
- INTERDISCIPLINARY / MULTIDISCIPLINARY
- Unreported
Program Overview
Track 1: S&S  
Scholarships & Stipends
Undergraduate STEM majors and/or STEM professionals

Track 2: TF  
NSF Teaching Fellowships
STEM professionals

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

Robert Noyce Teacher Scholarship Program
Solicitation NSF 16-559

Track 4: Noyce Research
Research related to STEM teacher effectiveness, persistence, and retention in high-need LEAs

*Capacity Building projects, which may lead to the development of full proposals for Tracks 1, 2, or 3, are also supported.
Track 1 (S&S)  
Scholarships & Stipends  
Undergraduate STEM majors and/or STEM professionals  

Recipients participate in project activities and teach in a high-need LEA for 2 years for each year of support received.

up to $1.2M for up to 5 years

Up to an additional $250K for engagement of a community college
Track 1 (S&S)
Scholarships & Stipends

Undergraduate STEM majors and/or STEM professionals

Required Partners

STEM Faculty

and

Education Faculty

and

Schools/LEAs
Track 1 (S&S)
Scholarships & Stipends

Undergraduate STEM majors and/or STEM professionals

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

- STEM Professionals enroll in a teacher certification program
- ≥ $10,000 for one year not to exceed cost of attendance
Track 1 (S&S)
Scholarships & Stipends

Undergraduate STEM majors and/or STEM professionals

Some Additional Considerations

- Internships for freshman and sophomores to attract STEM majors into K-12 STEM teaching careers.
- Recruit STEM majors who may not have previously considered a career in K-12 STEM teaching.
- Involvement of master teachers.
NSF Teaching Fellowships

STEM professionals

Recipients earn teacher certification through a one-year master’s degree program and teach in a high-need school district for 4 years.

- up to $3M for up to 5 years
  - Cost-sharing required
- Up to an additional $250K for engagement of a community college
Track 2 (TF)  
NSF Teaching Fellowships  
STEM professionals

Required Partners

Per America Competes Act (P.L. 110 – 69)

- An IHE department that provides an advanced program within a specific STEM discipline
- An IHE department that provides a teacher preparation program
- At least one high-need LEA and at least one public school served by the LEA
- At least one nonprofit organization
Track 2 (TF)
NSF Teaching Fellowships

STEM professionals

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
Track 3 (MTF)
NSF Master Teaching Fellowships

Exemplary, experienced STEM teachers

Recipients
- already have a master’s degree in their field OR have a bachelor’s degree in their field and are enrolled in a master’s degree program;
- participate in project program to develop master teachers; and
- teach in a high-need school district for 5 years

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

Up to an additional $250K for engagement of a community college
### Required Partners

Per America Competes Act (P.L. 110 – 69)

<table>
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<th>Requirement</th>
<th>Details</th>
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### Track 3 (MTF)

NSF Master Teaching Fellowships

Exemplary, 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
Capacity Building Projects

• **Purpose:**

  ✓ Establish the infrastructure and partnerships for implementing a future Track 1: S & S, Track 2: TF, or Track 3: MTF project;

  ✓ Develop evidence-based innovative models and strategies for recruiting, preparing, and supporting STEM teachers;

  ✓ Develop the capacity of the teacher preparation community to expand efforts to document, disseminate, and implement evidence-based practices for preparing effective STEM teachers and teacher leaders.

• **Note:** Carefully consider if you should submit a full Track 1, 2 Track 2, or Track 3 proposal or a Capacity Building proposal?
Capacity Building Proposals

- Capacity Building projects do not award scholarships, stipends, fellowships, or internships.
- Budget: Up to $75,000 over one year
  - Up to an additional $50,000 for collaboration of a community college
- Project ideas and outcomes must contribute to knowledge base.
- Proposals must have an evaluation plan.
Capacity Building Projects Must Describe (when applicable):

- Entities to be engaged and processes to be employed in designing a plan for recruiting, preparing, or supporting new or current STEM teachers in a high-need district;

- Plans for collecting data to determine need, interest, and/or capacity;

- Institution’s current available infrastructure and aspects that will be taken into account in designing a credible, effective STEM teacher prep program for candidates who will serve in high-need districts;

- Process and plan for developing strategies, model, infrastructure, etc. … How? Why? Who? When?
Capacity Building Projects

Examples of possible project activities include:

- Development of new teacher preparation programs or courses for STEM majors and STEM professionals;
- Development of new programs for developing Master STEM Teachers;
- Enhancing Noyce project evaluation;
- Conducting needs assessment to determine areas of STEM teacher shortages in local high-need school districts;
- Identifying/studying challenges or effective practices in recruiting and preparing STEM teachers for high-need school districts;
- Knowledge syntheses, identification/dissemination of resources and evidence-based practices.

See solicitation (p. 4) for other examples of possible project activities.
Scholar/Fellow Obligations for Tracks 1, 2, and 3

- 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 solicitation 16-559 for additional details.
Institutional Obligations for Tracks 1, 2, and 3

- Ensure the scholarship/stipend/fellowship recipients accept the terms.
- Supply relevant statistical and demographic data as requested.
- Monitor (including tracking) and report on the compliance of recipients (including repayment if necessary).
- Cooperate with NSF third-party project monitoring.

See the solicitation for additional details.
Additional Solicitation Specific Review Criteria

Reviewers will be asked to consider the evidence of the following central issues (including results of prior Noyce awards, if applicable):

• The extent to which the proposed work attends to the expectations and requirements discussed in Section II Program Description.

• The potential of the project to recruit, prepare, and retain STEM majors and/or STEM professionals (for S&S and TF) or develop and retain NSF Master Teaching Fellows (for MTF), in teaching careers in high-need local educational agencies.

• The quality of the academic requirements and other components of the program, the extent to which the proposed preparation, recruitment, and retention strategies reflect effective practices based on research.

• That the institution is committed to sustaining the program beyond the period of NSF funding (with the possible exception of funds for scholarships/stipends/fellowships).
Track 4: Noyce Research
Robert Noyce Teacher Scholarship Program
Eligibility for a Grant in NSF16-559

Proposals for Track 4 may be submitted by:

- One or more universities, four-year colleges, and/or two-year colleges 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.

- Professional societies and similar organizations that are directly associated with educational or research activities.
NSF 16-559: Changes from NSF 15-530
(specific to Track 4: Noyce Research)

- Track 4 now emphasizes the specific issue of:
  - Teacher effectiveness in high-need local education agencies
  - Persistence in high-need local education agencies
  - Retention in high-need local education agencies.
Track 4 (Noyce Research)

Research related to teacher effectiveness, persistence, or retention in high-need local education agencies

Range from research synthesis to experimental investigations in order to show relationships between teacher preparation and learning.

Up to $800k over 5 years

Up to $100k additional per Noyce project substantively engaged, max $2.3M
Track 4 (Noyce Research)

Research related to teacher effectiveness, persistence, and retention in high-need local education agencies

Additional Requirements

- Must include substantive collaboration among STEM faculty, STEM education faculty, and education researchers
- Proposals must include the theory which underlies the research design and provide appropriate methodologies
- Should involve more than one teacher preparation program or be generalizable to the larger community
Project Description - 15 pages
(Track 4: Noyce Research)

Include descriptions of the proposed:

- Linkages to the literature base
- Well-focused research questions/hypotheses
- Methods aligned with the theory & 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.
Track 4: Noyce Research Additional Comments

• Consideration of research priority areas from the National Research Council report, Preparing Teachers: Building Evidence for Sound Policy (2010).
  

• 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).
Noyce Research Proposals Funded 2015-16
Pre-service STEM Teacher Preparation

Funded under solicitation 15-530 *(things in solicitation 16-559)*

1540678—Windschitl/U. of Washington—*An exploratory study of collegial networks and opportunities to learn trajectories for pre-service science teachers in clinical teaching experiences*

1540789—Roehrig/U. of Minnesota-Twin Cities—*An investigation of science teacher induction in terms of promoting reform-based science teaching, reflective practice, and equitable, culturally responsive science teaching.*

Noyce Research Proposals Funded 2015-16 cont.

- 1557283—Stoddard/U. of California-Santa Cruz—A comparative study of CalTeach students to non-CalTeach students in the same programs at five universities in California, with an emphasis in examining preparation to implement the NGSS and CSSSM, as well as integrating the teaching of academic language and literacy into the teaching of STEM subjects for English Language Learners.

- 1557292, 285—Rushton/SUNY at Stony Brook, Ray/Kennesaw St. U.—A comparative study assessing the longitudinal impact of Noyce awards on the subject matter knowledge of beginning STEM teachers in the US through disaggregation of Praxis II test scores over the past fifteen years.

Funded under solicitation 15-530 (things in Solicitation 16-559 = focus on the issue of STEM Teacher effectiveness, persistence, or retention in high-need school districts)
Additional Resources

- [nsfnoyce.org](http://nsfnoyce.org)

- **NSF 16-001**: *NSF Proposal and Awards Policies and Procedures Guide* (PAPPG)
  - 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)

- Additional Resources on pgs. 7 - 8 of solicitation 16-559
Questions?

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