Overview of Robert Noyce Teacher Scholarship Program

NSF 17-541

QEM Proposal Development Workshop
June 2017

Sponsored by the National Science Foundation

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NSF Directorate for Education and Human Resources (EHR)
Division of Undergraduate Education (DUE)
Outline for Session (9:15 – 10:30 am)

Part 1 (40 mins)
• Background Info Related to Agency & Noyce Program
  ✓ Solicitation Changes
• Noyce Impact
• Program Overview
• Preparing the Proposal

Part 2 (20 mins)
• Common Strengths and Weaknesses in Proposal Submissions
• Helpful Hints & Fatal Flaws

Part 3 (15 mins)
• Q & A/Discussion
Noyce Program
Organization of EHR Directorate

Directorate of Education & Human Resources (EHR)

- Division of Research on Learning in Formal & Informal Settings (DRL)
- Division of Undergraduate Education (DUE)
- Division of Graduate Education (DGE)
- Division of Human Resource Development (HRD)
Division of Undergraduate Education (DUE)

1. Promote excellence in undergraduate STEM education for all students.

2. Support an increase in diversity, size, and quality of the next generation of STEM professionals.


4. Fund research to evaluate and improve workforce initiatives.
Robert Noyce Teacher Scholarship Program
Proposal Due Dates for NSF 17-541

- Tuesday, August 29, 2017 for FY18 funds

- Last Tuesday of August, Annually Thereafter
Eligibility for a Grant in NSF17-541

- 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 (and researchers in Education for Track 4: Noyce Research only).

- No restrictions on the number of proposals per organization or on the number of proposals per PI or Co-PI.
1. Partnership requirements are specified for Tracks 1, 2 and 3.

2. Definition of the term STEM teacher is further defined and scholarship/stipend eligibility criteria for STEM majors and STEM professionals is further specified.
Robert Noyce Teacher Scholarship Program

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

August 29, 2017
(Last Tuesday in August thereafter)
Robert Noyce Teacher Scholarship Program

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).

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
Definitions of Terms

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**Scholarship**

Funds awarded (in S&S Track) to:

- An undergraduate STEM major (≥ junior status)
- A post-bac (when the program requires a fifth year)

**Stipend**

Funds awarded (in S&S Track) to:

- A STEM professional who enrolls in a teacher certification program

**Fellowship**

Funds awarded (in TF and MTF Tracks) to:

- A STEM professional (TF Track)
- A STEM teacher (MTF Track)
# Definitions of Terms

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

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>A high percentage of individuals from families with incomes below the poverty line;</td>
<td>high = at least 50%</td>
</tr>
<tr>
<td>A high percentage of secondary school teachers not teaching in the content area in which they were trained to teach;</td>
<td>high = at least 35%</td>
</tr>
<tr>
<td>A high teacher turnover rate.</td>
<td>high = at least 15%</td>
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</table>

[Source](http://www2.ed.gov/policy/highered/leg/hea98/sec201.html)
Noyce Impact
Noyce Impact
FY 2002-2017

- 643 awards since 2002
- Over 620 colleges and universities participating
- Recipients teaching in almost 3,000 school districts in 50 states, Puerto Rico, Guam, and DC.
- Produced 10,196 new STEM teachers and 638 Master Teachers who are teaching (or have taught) in high need school districts throughout the country.
- Recipients teaching in almost 3,000 school districts in all 50 states, Puerto Rico, Guam, and DC.
Noyce Disciplines
FY 2002-2017

- COMPUTING: 73%
- EARTH SCIENCES: 3%
- ENGINEERING: 3%
- CHEMISTRY: 3%
- PHYSICS: 3%
- BIOLOGICAL SCIENCES: 1%
- SOCIAL and BEHAVIORAL SCIENCES: 2%
- MATHEMATICAL SCIENCES: 0%
- INTERDISCIPLINARY / MULTIDISCIPLINARY: 0%
- Not reported: 1%
Minority Serving Institutions

- 129 Awards to MSIs through FY 2017
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

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.
<table>
<thead>
<tr>
<th>Requirements/Features</th>
<th>Track 1 (S&amp;S)</th>
<th>Track 2 (TF)</th>
<th>Track 3 (MTF)</th>
<th>Track 4 (Research)</th>
<th>Capacity Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM Major</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>Degree in field</td>
</tr>
<tr>
<td>Scholarships/Fellowships</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>High-Need District Partner</td>
<td>✓</td>
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<tr>
<td>Non-Profit Partner</td>
<td></td>
<td>✓</td>
<td></td>
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<tr>
<td>Research</td>
<td></td>
<td>✓</td>
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<tr>
<td>PI/co-PI Team of STEM &amp; ED Faculty</td>
<td>✓</td>
<td>✓</td>
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<td>Evaluation/External Feedback</td>
<td></td>
<td>✓</td>
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<tr>
<td>Cost Sharing</td>
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<td>✓</td>
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| Funding Amount                | Up to $1.2M*  | Up to $3M*   | Up to $3M*     | Up to $800K***    | Up to $75K**     |

* $250K Community College Incentive  
** $50K Community College Incentive  
*** $100K per Noyce project substantively engaged up to max total $2.3M
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

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.
More to Come
(during lunch session)

Future Detailed Discussion of:

– Capacity Building Projects

– Track 4: Noyce Research
Track 1 (S&S)  
Scholarships & Stipends  
Undergraduate STEM majors and/or STEM professionals

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

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

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.
Track 2 (TF)
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
Recipients earn teacher certification through a master’s degree program and teach in a high-need school district for 4 years.

- Up to $3M for up to 5 years for 1 cohort or 6 years for 2 cohorts
- 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>
<thead>
<tr>
<th>An IHE department that provides an advanced program within a specific STEM discipline</th>
<th>An IHE department that provides a teacher preparation program OR 2-year IHE with dual enrollment program with an IHE</th>
<th>At least one high-need LEA and at least one public school served by the LEA</th>
<th>At least one nonprofit organization</th>
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<td>and</td>
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### Track 2 (TF)
NSF Teaching Fellowships

STEM professionals
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)

| An IHE department that provides an advanced program within a specific STEM discipline | An IHE department that provides a teacher preparation program OR 2-year IHE with dual enrollment with an IHE | At least one high-need LEA and at least one public school served by the LEA | At least one nonprofit organization |

**Track 3 (MTF)**

NSF Master Teaching Fellowships

Exemplary, experienced STEM teachers
National Science Foundation

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
For Bachelors: 1-year fellowship support while in Master’s program, up to 4 years while teaching

Take on leadership role within the school or LEA
Mentoring
Curriculum development
Plan/implement PD
Participate in pre-service education
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 17-541 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).
Preparing the Proposal

Solicitation Section V
Project Summary (1 page)

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

2. Intellectual Merit

3. Broader Impacts
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.
All Proposals Must Include:

1. One page Project Summary (Overview, Intellectual Merit, and Broader Impact)

2. Project description (15 pages)

3. Budget forms and narrative for each year

4. Biosketches

5. Current & Pending Forms

6. Facilities, Equipment, and Other Resources document

7. References

8. Mentoring Plan for Postdoctoral Researchers (if in budget)

9. Data Management Plan Indicate Human Subjects status on cover sheet (pending, approved, or exempt)

10. Letters of Commitment (for Tracks 1 – 3 and often CB/Track 4)

Note: Consult PAAPG (NSF 17-1) for specific guidance not specifically addressed in solicitation.
COMMON STRENGTHS & WEAKNESSES IN NOYCE PROPOSAL SUBMISSIONS
Common Strengths of Successful Noyce Proposals

- Strong evaluation plan, linked to project goals and objectives
- Significant impact
- Potential for involving URM
- Strong and defined collaborative partnerships
- Efforts for preparing participants to be successful in teaching in high-need school districts
- Strong leadership team
- Sensible timeline of activities
- Detailed (and realistic) recruitment, selection, monitoring, and compliance plans
- Sufficient project detail and clear plans
Common Weaknesses in Unsuccessful Noyce Proposals (Track 1: S & S)

1. Proposal does not follow guidelines for Noyce Program.
2. Failure to indicate students will complete STEM major.
3. Little information about teacher preparation program.
4. Unrealistic projections/recruitment goals.
5. Recruitment and selection strategies not well described.
7. Lack of involvement of STEM faculty (or education faculty).
8. Lacks plans for monitoring compliance with teaching requirement.
9. Weak evaluation or lacks objective evaluator.
10. Lacks detail about preparing participants for high-need LEA
Common Weaknesses in Unsuccessful Noyce Proposals (Track 2: TF and Track 3: MTF)

1. Insufficient details for preservice, induction, or professional development program

2. Vague/unrealistic recruitment plans

3. Selection plans do not follow guidelines

4. Master Teacher roles and responsibilities not discussed

5. Matching funds not identified

6. Role of non-profit organization not clear

7. School district partnership not strong

8. Evaluation weak
General Tips for Success

1. Be aware of other projects and advances in the field.
2. Cite the literature.
3. Provide details.
4. Discuss prior NSF results (within last 5 years).
5. Include evaluation plan with timelines and benchmarks.
6. Put yourself in the reviewers’ place.
7. Consider reviewers’ comments if resubmitting proposal.
8. Have someone else read the proposal.
9. Spell check; grammar check.
10. Call or email cognizant NSF Program Officers.
Summing Up

• Start **EARLY**
• Be aware of other projects and advances in the field.
• Get acquainted with FastLane ([www.FastLane.nsf.gov](http://www.FastLane.nsf.gov)).
• **Read** the Program Solicitation.
  ✓ Know the program’s specific guidelines and follow them!
• Put yourself in the reviewers’ place.
• Consider reviewers’ past comments if resubmitting proposal.
• **Contact** a program officer to discuss your idea.
• Become an NSF **reviewer**.
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
Additional Resources

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

- **NSF 17-1**: *NSF Proposal and Awards Policies and Procedures Guide* (PAPPG)
  - 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)

- **NSF 13-127**: Related FAQs

- See Additional Resources listed in solicitation 17-541
Other EHR Programs of Possible Interest

- Improving Undergraduate STEM Education (IUSE NSF 15-585)

- EHR Core Research (NSF 15-509)
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