Noyce Town Hall & Discussion with NSF Program Officers

AUG | 11 | 2021

This material is based upon work supported by the National Science Foundation (NSF) under Grant Numbers DUE-2041597 and DUE-1548986. Any opinions, findings, interpretations, conclusions or recommendations expressed in this material are those of its authors and do not represent the views of the AAAS Board of Directors, the Council of AAAS, AAAS’ membership or the National Science Foundation.
Robert Noyce Teacher Scholarship Program

Agenda

1:00 – 2:40 PM ET  Noyce Town Hall
  • Presentations and Discussion on Recruitment (NSF Noyce PIs)
  • Presentations and Discussion on Retention (NSF Noyce PIs)

2:40 – 2:50 PM ET  Transition

2:50 – 3:30 PM ET  Breakout Rooms with NSF Program Officers
The AAAS seeks to "advance science, engineering, and innovation throughout the world for the benefit of all people."

- Strengthen and diversify the science and technology workforce
- Foster education in science and technology for everyone

https://aaas.org

Inclusive STEM Ecosystems for Equity & Diversity (ISEED)
AAAS' Role in Noyce

Knowledge Generation
- Commissioned Papers
- Noyce Track 4 Book

Community Building
- Annual Noyce Summit
- Focused Meetings & Regional Dialogues
- Social Media Accounts

Research Dissemination
- Blog
- Monthly Newsletter
- Webinars
- Annotated Bibliography

Websites to Bookmark
- https://www.nsfnoyce.org
- https://www.nsfnoyce.org

Robert Noyce Teacher Scholarship Program

AAAS ARISE Network

#NoyceKnowledge
@NoyceProgram
Robert Noyce Teacher Scholarship Program

NOYCE SCHOLARS & FELLOWS
Inspiring the Next Generation of STEM Learners

Supported by the National Science Foundation grants 2041597 & 1548986.
Robert Noyce Teacher Scholarship Program

NSF Welcome

Thomas Kim, NSF Noyce Program Director
Recruitment Presenters

- **André M. Green**: Professor and Associate Vice President for Academic Affairs, University of South Alabama
- **Elizabeth Lewis**: Associate Professor, College of Education and Human Sciences, University of Nebraska-Lincoln
- **Lisa Gonsalves**: Associate Professor, College of Education and Human Development, University of Massachusetts Boston
- **Natalie King**: Assistant Professor, Middle and Secondary Education Teaching and Learning, Georgia State University
- **Stacy Duffield**: Director, Office of Teaching and Learning, North Dakota State University
André Green
University of South Alabama
Pathway to Science (PTS) and Pathway to Mathematics (PTM) are collaborative programs between the University of South Alabama’s College of Education, College of Arts and Sciences, College of Engineering, Bishop State Community College, and the Mobile County Public School System, with project advisory committee members being the superintendent, the deans of those colleges, and the Academic VP, as well as curriculum specialists within the school system.
The aim is to enable recent science, mathematics, and engineering bachelor degree graduates to complete secondary science or mathematics certification in an intensive four-semester program that culminates with certification and an earned master’s degree.
Students with academic majors in Mathematics, Science, or Engineering

GPA of 2.75 or higher

Graduate Admissions Requirements (Including Passing score on Appropriate Content Praxis & CORE)

Prospective Students may Complete Pre Residency in their Junior Year.
## Benefits of the Programs

### Academic
- Pre-residency stipend of $1,500
- Full Graduate Tuition and Fees
- Semester Stipend of Approximately $2500 (Dependent on Tuition Cost)

### Practice
- Trip to a State and/or National Science or Mathematics Conference plus Membership
- Mentoring during their first years of induction
- Total Scholarship package is approximately $30,000
Our data suggests that the pre-residency experience is a critical component of the program. The experience gives applicants the opportunity to explore teaching careers without making a commitment. Scholarship applicants are reviewed on their performance during this experience and on their mentor teacher’s recommendation. Importantly, the pre-residency experience provides students the opportunity to make a meaningful decision about whether a career in education is right for them. Indeed, several students make the decision not to pursue a career in education after the pre-residency experience affording them the time and opportunity to consider the profession.
# Noyce Pathway to Science and Mathematics

## Required Activities for Candidates

<table>
<thead>
<tr>
<th>Required Knowledge/Skills</th>
<th>Related Field Experiences</th>
<th>Evidence</th>
</tr>
</thead>
</table>
| Knowledge of Technology and Manual Processes                   | • Use I-Now, Moodle, web-quests, power points, and other forms of technology.  
                                                                         • Keep a grade book and attendance log manually and electronically. | • Teach a lesson using technology  
                                                                         • Keep attendance in both forms (manually and using technology)                                   |
| Reading and Analysis of the Course of Study for various subjects/pacing guides | • Students review the course of study book/online course of study on ALSDE website/CD for various subject areas  
                                                                         • Find other resources                                                                       | • Create a calendar for an entire semester for various subjects (At least two)  
                                                                         • Create and teach several lesson plans for an objective                                      |
| Address Student Misconceptions                                  | • Research common misconceptions held by students at the level they are teaching.  
                                                                         Interview students about possible misconceptions                                            | • Create a lesson (plan) that addresses the misconceptions and teach the lesson  
                                                                         • Do some type of assessment or exit slips                                                    |
| Classroom Management                                           | • Teach several classes with mentor teacher in the room  
                                                                         • Teach a class without mentor teacher in the room                                            | • Mentor teacher Educate Alabama evaluation/USA Evaluation for a lesson form and have a post conference with the student about the evaluation.  
                                                                         Focus here is on classroom management, demeanor, and disposition of the student while teaching.  
                                                                         • Have another teacher do the evaluation of the student and post conference. Have student discuss that post conference with the mentor teacher |
| Use Technology to enhance lesson and use teacher resources test banks, power points, workbooks | • Develop some type of technology tool to help students  
                                                                         • Create an assessment or activity using these tools                                          | • Mentor teacher evaluation  
                                                                         • Student participation                                                                    |
| Special Populations                                            | • Observe students who have an IEP, 504 Plan, ELL Plan, Behavior Plan, etc.  
                                                                         • Talk with mentor teacher, Special Education teacher, ESL teacher, about accommodations  
                                                                         made for students they serve  
                                                                         • Using a lesson you have developed, think of possible accommodations you can make to  
                                                                         meet the needs of these students.                                                           | • Discuss accommodations with mentor teacher  
                                                                         • Have mentor teacher offer advice on the effectiveness of such accommodations  
                                                                         • Reflect on the accommodations you made if you were able to implement them into a class  
                                                                         you taught.                                                                               |

- Please feel free to add whatever other experiences that you see fit. Bus duty, lunch duty, hall duty, etc. Their experience needs to be an overall experience. They need to see the good (a lot of good) and the bad of teaching. A realistic view of the profession is what I want for them.

- Students should keep all documentation and should prepare a 10-12 minute power point on their experience for their interview. They may want to run their presentation by you first.
These students are getting $28,000 to support their graduate degree in STEM Education.

DO YOU WANT IN???

What will YOU do after you graduate?

These students have undergraduate degrees in math or science fields, and now they are pursuing a Master’s Degree in Mathematics Education and Science Education—funded through the University of South Alabama National Science Foundation Noyce Pathway to Mathematics and Pathway to Science II Grants.

YOU, TOO, could have your graduate program paid for!

If you will be graduating with a degree in a math or science related field by December 2017, and you think a career in TEACHING might be in your future, attend the interest meeting on Wednesday, April 12, in UCOM 3901 at one of the following times: 10:00, 1:00, 3:00.

For more information email Dr. Susan Ferguson Martin
ferguson@southalabama.edu
Pre-residency Participants & Outcomes

Pathway to Science I & II

- 54 Participated in the Pre-Residency
- 28 Accepted the Offer to be a Noyce Scholar
- 24 Have Graduated
- 4 Currently in the Program

Pathway to Mathematics

- 37 Participated in the Pre-Residency
- 18 Accepted the Offer to be a Noyce Scholar
- 13 Have Graduated
- 5 Currently in the Program

Reasons for Not Becoming a Noyce Scholar

- Participant realized teaching would not be their forte
- Participant did not meet admission requirements by the end of their pre-residency experience (i.e. Praxis, final GPA)
- Participant was recruited by school to start teaching on emergency certificate
- Participant became a graduate student but wanted to pursue the program at a different pace
- Committee, based on feedback from mentor teachers and participant presentation did not feel that candidate was a good fit for the program
- General dispositions concerns
- Weak content knowledge
Recruiting Tips

• Make your program a big deal
• Have an event or two to inform the campus about the program—department chairs, professors, advising
• Use Social Media
• Have events where students can come learn about your program...feed them
• Treat them like kings and queens once they are in the program so that they can brag to their other STEM friends...They are your best recruiters
Example: First Three Cohorts & Endorsements

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Median age (range) years</th>
<th>Time between degrees years</th>
<th>Endorsements (required minimum: 24 credit hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Biology</td>
</tr>
<tr>
<td>MAs1</td>
<td>27.8 (22-46)</td>
<td>5.3</td>
<td>8</td>
</tr>
<tr>
<td>MAs2</td>
<td>24.3 (22-53)</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>MAs3</td>
<td>26.6 (22-42)</td>
<td>2.6</td>
<td>7</td>
</tr>
</tbody>
</table>

* Total: 30 14 2 3

* Teacher may have been eligible for multiple endorsements

Challenges in Recruiting:

1. After the initial high application rate in the first two cohorts, we found we had drained the readily available candidates.
   a. Cohort 1  n = 14
   b. Cohort 2  n = 16
   c. Cohort 3  n = 11
   d. Cohort 4  n = 11
   e. Cohort 5  n = 4
   f. Cohort 6  n = 7
   g. Cohort 7  n = 13
   h. Cohort 8  n = 7
2. Recruiting Noyce scholars outside of biology
3. Recruiting in time for the next year (vs. for 2-3 years in the future)

Recruiting Strategies:

1. Initial grant award press releases and other local news coverage.
2. Emailing science department chairs and student advisors annually.
3. Emailing professional science societies.
4. Attending student science club meetings (e.g., physics) to make a presentation.
5. Monthly info sessions on campus for interested applicants.
6. Emailing and meeting one-on-one with interested candidates.
7. Previewing transcripts to inform applicants of any missing course requirements.
8. Tracking inquires of who we had contacts with and the communications.
Partnerships, Partnerships, Partnerships

1. Partner schools with strong partnerships
2. Pipeline Programs with Colleges & Universities
   1. Para-Professionals
   2. High School to Teacher Programs
   3. Community Programs (ACTT)
   4. Educational Organizations – City Year & Citizen Schools
   5. Support for hiring
   6. Data sharing about teacher candidates & jobs

Dr. Lisa Gonsalves
Intentional Recruitment Strategies

- Engage stakeholder partners
- University-School-Community relationships
- Mutually beneficial and sustainable
- Interviewing process for degree program and partnering high need schools
- Joint efforts with nonprofit and social organizations
- Inclusion of faith-based institutions
- Clear trajectory for STEM professionals with embedded support for 5 years

Any opinions, findings, conclusions, or recommendations presented are only the researchers; and do not necessarily reflect the views of the National Science Foundation.
Recruitment Strategies

• Entry Survey
  • Collects areas of interest
  • Outreach to students who indicated interest in STEM areas

• Listservs and Personal Connections
  • Local and national with information about program
  • Outreach to high school and college instructors

• Direct recruiting at college fairs and visits
  • Attended Minnesota College Fair
  • Provided information for university recruiters to share
  • Participated in Discover Days and other campus recruiting events
  • Table at internal majors fair for undecided students

• Class Visits
  • Both introductory education and content area classes
  • Posted information in content area departments
  • Asked content area departments to send out emails to students

• Communication with school leaders with unfilled positions
  • Requested lists of schools with unfilled positions from state departments
  • Targeted the substitutes or individuals on permits
  • Made program accessible to individuals working fulltime
About UTA: Research I, Diverse Hispanic Serving Institution in Dallas-Ft. Worth

The UTA Noyce Programs:
- Undergraduate STEM majors in the UTeach program (initiated 2010) and post-bac certification students
- Total Noyce Scholars recruited, completed/in program: 192; Graduates still teaching: 86%

Noyce Scholar Recruitment:
1. Flyers on campus posted in strategic areas and email flyer to STEM departments
2. In person large enrollment class announcements by PI/Co-PIs and Noyce Scholars
3. Community College partners distribute flyers, announce in classes, email lists
4. Noyce information pizza lunch with current Noyce Scholars and PI/Co-PIs
5. Advisor packets sent to colleges
6. Campus student organizations sent flyers and recruitment materials
7. Scholarship information posted on website and social media
8. New Freshmen and transfer summer orientation sessions on both UTeach and Noyce (parents attend)
9. Application posted on a campus-wide portal where all have access: MavScholarshop
10. Summer internship program with community agencies for freshmen and sophomores (total interns 109)
Tips on Noyce Scholar Recruitment

Dr. Douglas Larkin & Dr. Sandra Adams
Montclair State University
1.) Recruitment for Noyce is not isolated from recruitment into teaching.
Noyce Scholars are a subset of all teacher candidates, so recruiting them is part of your university’s recruitment into teaching more generally.

2.) Visit freshman seminars, and clubs for STEM majors. Often times, such meetings are career-focused, and students in small meetings can ask questions they might not hold in big ones.

3.) Ask, “Have you ever considered becoming a science or mathematics teacher?” This kind of encouragement can go a long way when STEM undergraduate majors have not even thought about the possibility of teaching.

4.) Systematically collect contact information and follow up.
This is marketing 101, but some of us STEM folks are not really used to doing it. We often find students actually appreciate the outreach.

5.) Keep in touch with your teacher education admissions department.
Sometimes STEM students slip in through transfers, changes of major, etc.

6.) Active partnerships across the university
Develop good working relationships with STEM faculty advisors and encourage them to refer students who express an interest in teaching.
7.) **Provide lists of high-need schools in the area.** For many prospective recruits, the uncertainty associated with the teaching commitment can prevent them from applying to Noyce. We find that sharing a list of high-need districts often makes this feel more concrete to potential students.

8.) **Current Noyce Scholars are often the best program ambassadors.** Invite potential applicants to Noyce meetings and events. This gives current students the opportunity to interact with potential Noyce Scholars.

9.) **Make a website.** Potential applicants will be making decisions by conferring with family and friends. Having a link for them to share is good, and NSF likes it when you have a website. If you are comfortable with social media, definitely do that too.

10) **Talk to high school students about STEM teaching at every opportunity.** Though this has not been so easy during the pandemic, there’s always an opportunity for mentioning STEM teaching as a career when you do an observation, or do other work in schools. High school seniors quickly become college sophomores.

11.) **Accept students’ decision not to pursue a Noyce Scholarship rather than urge them to accept a scholarship offer.** There are many reasons why a prospective applicant may decline to apply. It’s better to accept their reasoning and leave the door open for them to apply later if they wish.
Self-Assigned Discussion Rooms on Recruitment

1. Navigate to the bottom of your screen and click “Breakout Rooms” button
2. Self-select into your breakout group based on the speaker you wish to discuss with

Note: If you do not see the Breakout Rooms button, please post in the chat to ask to be placed in a breakout room.

We will call you back to the main session at 1:55 PM ET.
Robert Noyce Teacher Scholarship Program

Retention Presenters

- **Doug Larkin**: Professor, Teaching and Learning, Montclair State University
- **Ann Cavallo**: Assistant Vice Provost; Co-Director, UTeach Arlington Science and Mathematics Teacher Education Program; Distinguished Professor of Science Education, University of Texas at Arlington
- **Rong-Ji Chen**: Professor, School of Education, California State University San Marcos
- **Paige Evans**: Clinical Professor and Associate Director, teachHOUSTON, College of Natural Sciences and Mathematics, University of Houston
Tips on Noyce Scholar Retention

Dr. Douglas Larkin & Dr. Sandra Adams
Montclair State University
Retention… in the Noyce Program

1.) **Noyce Scholars should have a defined identity at your institution**
Noyce Scholars should feel a sense of belonging to the program, and this can only happen if they have something to belong to.

2.) **Have regular events and meetings of Noyce Scholars.** Even if there’s nothing special going on, regular meetings between the scholars and the program coordinators create channels for communication and problem-solving.

3.) **Use meetings for talking about advising.** Having Noyce Scholars share their course schedules with each other for the coming semester, allows for peer conversations about coursework, and helps the faculty identify solutions to the scheduling conflicts that may occur between STEM and teacher education.

4.) **Take critical issues seriously.** Like many college students—undergraduate and graduate alike—Noyce Scholars can suffer from food and housing insecurity, physical and/or emotional abuse from a partner, or challenges with mental health. You may be the person they feel most comfortable coming to talk with at your institution. You can direct them to the right resources if you know what they are.

5.) **Encourage peer-to-peer contact.** You likely won’t have to do this, because students now do this almost automatically, but a student-only group text (What’s App, GroupMe, etc) can be a valuable resource to your Noyce Scholars.
Retention… in the Noyce Program

6.) Pausing a scholarship for a semester is a powerful tool. If a GPA drops down, or a student is not meeting their commitment to the program, PIs can “pause” the support for a semester until things improve. It can be a powerful reality check for the student to even raise the possibility.

7.) Incentivize them to go to office hours and talk to professors about course content. We have our students bring a form to each professor to sign to say they’ve been to office hours!

8.) Provide Noyce Scholars opportunities to be ambassadors of the program. Students know how to talk about the value of the program to their peers, and doing so reinforces their own identity as Noyce Scholars.

9.) Follow up with them. Always double check to make sure that the scholarship/stipend has gone through or been applied to tuition. If you’ve referred them to someone for help, double check with them to see how it went.

10.) Celebrate milestones, and involve school partners. Once per year around graduation time we hold a celebration and invite family, friends, cooperating teachers, and other teacher ed partners, and each graduate gives a brief presentation on their learning to teach using their portfolio.

11.) Bring back graduates to talk with Noyce Scholars. Bring back graduates of the program to for “real talk” about their first year teaching. This is always a highlight.
12.) **Help with the hiring process.** Work with Noyce Scholars on resume writing, interview skills, and essay writing for job applications. If you can get pairs of Noyce graduates hired at the same school or district, they’ll be able to support each other.

13.) **Induction coaching should be formative.** If your Noyce program offers support during the first year, retired administrators with STEM backgrounds make great coaches. In addition, having sustained professional development over the year (ours is about collecting and using student data) can make it possible to showcase the work at the end of the year.

14.) **Stay in contact.** Keep them connected by sending them professional development opportunities, campus speakers, and end of year celebrations.

15.) **Make it possible for graduates to feel they can reach out to you.** Sometimes Noyce grads just need to talk about the big stuff (whether to stay in teaching, whether to move districts) and if they know they can talk with you, then you can help them.

16.) **Encourage them to use and develop their personal and professional networks.** Group texts with other Noyce Scholars, state conferences, department chairs, listservs, there are many.

17.) **Fit, Links, and Assets.** Our track 4 work is showing these three constructs—both within the school organization and in the community—are key to teacher retention. Working on any or all of these may increase the likelihood of retention.
Noyce Scholar Retention Strategies at The University of Texas at Arlington

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Noyce Scholar Retention:
1. School-based Mentor Teachers: Guide Scholars through induction 2-4 years
2. UTA Noyce Scholar Leader: Retired experienced science and math teacher visits each scholar and Mentor Teacher; provides guidance and feedback
3. Noyce Scholar Learning Seminars: Scholars attend 4 Scholar Learning Seminars per semester on additional professional development on teaching and/or in their discipline, e.g., professional conferences, seminars, institutes.
   A. Two Scholar Learning Seminars required on campus (during Covid, virtual):
      i. Beginning of Academic Year – Welcome and Orientation for New Scholars
      ii. End of Academic Year – Scholar Meet-Up and Celebration of Graduates
   B. The Scholar Learning Seminars attended by current Scholars in program and graduated, teaching scholars.
   C. Teaching Scholars are invited to speak, advise current Scholars
4. Near-Peer Mentor Program: Graduated Noyce Scholars mentor 2-3 Scholars
5. Social Media: UTA Noyce Scholar Facebook, Instagram accounts maintain connection, support

University of Texas at Arlington

Dr. Ann Cavallo
Track 1 Project: Cal State University San Marcos

We recruit math and science teachers. Max 3 years of Noyce scholarships: 2 undergraduate years + 1 credential year.

Overall Strategies:

- Selecting committed Noyce scholars
- Cultivating STEM teaching identities: attendance at STEM education & Noyce conferences
- Monthly meetings and informal gatherings
- “Noyce Dinner” meetings (in-person and virtual) where alumni, current scholars, & faculty mingle
- Building a local Noyce network & recognizing we’re in the nationwide Noyce → we’re a part of something big, a sense of purpose & meaning

For Undergraduates:

- Faculty champions of teacher recruitment (FaCTR); some also serve as mentors
- Cultivating STEM teaching identities: (a) STEM Ambassadors in outreach programs at local schools, (b) Learning Assistants in STEM courses

For Credential Candidates & Alumni:

- Cohort model in the credential program – lots of support from peers, faculty, supervisors, cooperating teachers, credential analysts, etc.
- Classroom visits
Retention

• Current numbers
• Retention
  • While in the program
  • After graduation/certification

Make a difference...

Dr. Paige Evans  pevans@uh.edu
Making an Impact: 415 Graduates

90% Graduates enter teaching

95% Teaching in the greater Houston area

80% Teaching in high need schools

88% Teaching beyond 5 years

Dr. Paige Evans pevans@uh.edu
Retention: In the Program

- Quality of the Program
- One-on-One Mentoring
- Advising
Retention: In the Program

• Community Building
  • Student Society
  • Student Society Mentoring Program
• Study Groups
• Purposeful connections
  • In classes
  • Networking events
  • Socials
  • Community service
  • Professional development

Dr. Paige Evans  pevans@uh.edu
• We do a great job of supporting them in their job search
• Interviewing
• Steer them to schools that are supportive of new teachers
• Try to have multiple graduates in one school
After Graduation/Certification: Induction

- Assist in job search where they will thrive
- Try to have multiple graduates in one school
- New Teacher Academy
- Networking Events (in person and online)
- Alumni Association
- Conferences
- Alumni Come Back to Offer and Participate in professional development

Dr. Paige Evans  pevans@uh.edu
Thank you!

Please feel free to reach out if you have any questions.

pevans@uh.edu
Self-Assigned Discussion Rooms on Retention

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2. Self-select into your breakout group based on the speaker you wish to discuss with

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Thank you presenters!

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Stacy Duffield
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Rong-Ji Chen
Paige Evans
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Robert Noyce Teacher Scholarship Program

AAAS Staff

Jennifer Carinci, Program Director
Betty Calinger, Senior Project Director
Lauren Manier, Senior Program Associate
Thomas Veague, Community Engagement Manager

Don't be a stranger!
Contact us at: noyce@aaas.org
Discussions with NSF Program Officers
Thank you!

NSF Noyce Program Officers

Thomas Kim
Sandra Richardson
Kathleen Bergin
Bonnie Green
Robert Mayes
Susan Carson
Jennifer Lewis
John Haddock
Mindy Capaldi
Self-Assigned Breakout Rooms with NSF

1. Navigate to the bottom of your screen and click “Breakout Rooms” button

2. **Self-select into your breakout group based on your Program Officer** (if your PO is not here, please join Tom Kim's group)

*Note: If you do not see the Breakout Rooms button, please post in the chat to ask to be placed in a breakout room.*

Please stay in the breakout rooms as long as you wish!