



*Recruitment and Retention
Of
Secondary-Level Noyce Scholar Mathematics Teachers*

**ECU Robert Noyce Teacher Scholarship Program
East Central University (ECU)
Ada, Oklahoma**

PI: R. Ferdinand (rferdand@ecok.edu)

Co-PIs: H. Hannah, J. Bedford

External Evaluator: C. E. Hobbs

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Subject of Presentation

Recruitment and Retention

Of

Secondary-Level Noyce Scholar Mathematics Teachers

ECU Noyce Program: Some Features

1. Academic Discipline: Mathematics
2. Level at which Noyce Scholars will Teach: Secondary
3. Start Year of Program for Noyce Scholars at ECU: Junior
4. Participating ECU Departments: Education and Mathematics
5. Annual Scholarship Amount (for up to 3 years): \$10,000
6. Two-year commitment to teach secondary-level mathematics in high-need school for each year of scholarship money received
7. Commitment to complete one undergraduate research project in mathematics and/or education in each year that scholarship money is received
8. Commitment to attend Fall and Spring Noyce Colloquia at ECU
9. Commitment to work with cooperating and master/mentor teachers
10. Participating Oklahoma High-Need School Districts: Ada, Allen, Byng, Latta, Seminole, Sulphur and Vanoss
11. Evaluation Plan includes External Evaluator

ECU Noyce Program: Recruitment

Step – 1

1. ECU Noyce brochure created
2. ECU Noyce website created (<http://cs8.ecok.edu/~rferd/noyce/home.pdf>). Website contains link to ECU Noyce application form
3. ECU sophomores with mid-term grades of “B” and above in Calculus I and II identified
4. Students in 2 above invited via personal letters to Noyce Colloquia on ECU campus. Talks given by high-need school math teachers (fall semester) and college math professor (spring semester)
5. Students in 3 provided Noyce application forms and brochures to encourage them to apply
6. Minorities and women especially encouraged to apply

ECU Noyce Program: Recruitment

Step – 2

1. ECU sophomores with mathematics ACT scores of 24 and above identified.
2. Among students in 1, those from underrepresented minority population (African American, Native American and Hispanic) in STEM areas isolated
3. Students in 2 mailed letter and brochure (containing link to ECU Noyce website) encouraging them to apply
4. Students in 2 above sent emails reminding them about ECU Noyce opportunity
5. Students in 2 called by ECU Noyce student helper encouraging them to apply to the Noyce program

ECU Noyce Program: Recruitment

Step – 3

Following local-area community colleges targeted:

1. Seminole State College, Seminole, Oklahoma
2. Murray State College, Tishomingo, Oklahoma
3. Rose State College, Oklahoma City, Oklahoma
4. Oklahoma City Community College, Oklahoma City, Oklahoma
5. Northeastern Oklahoma State College, Wilburton, Oklahoma

Solicitation letters and Noyce brochures mailed to STEM department chairs of above

ECU Noyce Program: Brochure

Robert Noyce Teacher Scholarship Grant

The purpose of the Robert Noyce Teacher Scholarship Program is to encourage science, technology, engineering and mathematics majors and professionals to become K-12 mathematics and science teachers.

The \$900,000 grant was awarded to East Central University to provide scholarships and additional educational opportunities to students who commit to teach secondary level mathematics for up to six years in a high-need school district in Oklahoma.

A high-need school district is one that serves an elementary or secondary school in an area in which there is one or more of the following:

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

ECU is the first university in Oklahoma to ever receive the Robert Noyce Teacher Scholarship Grant. The five-year grant is funded by the U.S. National Science Foundation (NSF).



East Central University's mission is to foster a learning environment in which students, faculty, staff, and community interact to educate students for life in a rapidly changing and culturally diverse society. Within its service area, East Central University provides leadership for economic development and cultural enhancement.



In compliance with Title VI of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendment Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, and other federal laws and regulations, East Central University does not discriminate on the basis of race, color, national origin, sex, age, religion, handicap, disability, or status as a veteran. In any of its policies, practices or procedures. This includes, but is not limited to, admissions, employment, financial aid, and education services. This publication is printed and issued by East Central University as authorized by Title 70 OS 1581, Section 3903. 100 copies have been printed at a cost of \$32.65.

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Robert Noyce Teacher Scholarship Program



East Central University's
Robert Noyce Teacher Scholarship Program
1100 E. 14th Street, PMB K-1
Ada, OK 74820
Phone: 580-559-5285
www.ecok.edu

ECU Noyce Program: Recruitment

Major Challenges Faced by PI Team

1. Students did not believe the annual scholarship amount of \$10,000. Thought there was a catch somewhere. Took some convincing of them to believe in the very idea. Some students wished to discuss the opportunity with parents. One parent called and wished to discuss this opportunity with their attorney.
2. Some students did not like the in-service teaching commitment of two years for each year of scholarship money received.
3. Students had many questions such as
 - a) What if I don't find a job upon graduation?
 - b) What if I don't find a job in Oklahoma?
 - c) Will I need to return the money in case of a) and b) above?
 - d) Undergraduate research requirement: Can we work in groups? Can research be in Mathematics and/or Education?

ECU Noyce Program: Qualifying Criteria

1. United States citizen or permanent resident
2. Major in ECU Mathematics Teacher Certification Option upon starting Noyce program
3. Mathematics GPA of 2.75/4.00 or above
4. Willingness to teach secondary mathematics in high-need school upon graduating from ECU Noyce program

ECU Noyce Program: Competitive Selection Criteria

Following Competitive Selection Point System Used:

Math GPA X 2.5	ECU GPA X 2.5	Minority	Female	Disabled	Financial Need	TOTAL
10 points	10 points	5 points	5 points	5 points	5 points	40 POINTS

ECU Noyce Program: Demographics of First Cohort Selected

Minority	Caucasian
3	5

Female	Male
5	3

ECU Noyce Program: Demographics of First Cohort Selected

ECU Students	Community College Transfers
6	2

Changed to Math Teacher Certification Major	Already Math Teacher Certification Major
3	5

ECU Noyce Program: Demographics of Second Cohort Selected

Minority	Caucasian
3	5

Female	Male
3	5

ECU Noyce Program: Demographics of Second Cohort Selected

ECU Students	Community College Transfers
5	3

Changed to Math Teacher Certification Major	Already Math Teacher Certification Major
3	5

ECU Noyce Program: Demographics of Third Cohort Selected

Minority	Caucasian
3	7

Female	Male
6	4

ECU Noyce Program: Demographics of Third Cohort Selected

ECU Students	Community College Transfers
7	3
Changed to Math Teacher Certification Major	Already Math Teacher Certification Major
4	6

ECU Noyce Program: Demographics of Third Cohort Selected

ECU Students	Community College Transfers
7	3
Changed to Math Teacher Certification Major	Already Math Teacher Certification Major
4	6

ECU Noyce Program: Retention of Noyce Scholars

1. Monthly meeting of PI-team with Noyce scholars to:
 - a) Assess progress in and opinion of Noyce program.
 - b) Discuss challenges faced by Noyce scholars in MATH and EDUC courses.

2. Observing mid-semester grades of Noyce scholars in MATH and EDUC courses. In case of grade being below a “C” advise Noyce scholar, inform course instructor and academic advisor. Advise Noyce scholar to seek tutoring.

ECU Noyce Program: Retention of Noyce Scholars

3. Once a semester surveys filled out by Noyce scholars to gauge effectiveness of Noyce program and intervene and/or make changes in program as needed.
4. Once a semester Noyce colloquia. Colloquia speakers included:
 - a) Secondary-level Mathematics teachers from local-area high need school districts.
 - b) Senior personnel from Oklahoma State Department of Education (OSDE).
 - c) In-service Noyce scholars from ECU Noyce program.

ECU Noyce Program: Retention of Noyce Scholars

5. Undergraduate research by Noyce scholars with faculty in MATH and EDUC. In research projects, Noyce scholars formed groups that collaborated on the research projects. This created cohorts that naturally associated with each other.
6. Presentations of undergraduate research in 5. above at regional and national conferences. Travel funded by Noyce grant. Examples of such conferences include Noyce national and regional conferences in Washington D.C., Indianapolis and Omaha.

ECU Noyce Program: First Cohort

Scholars Recruited	Scholars Completed Program	In-Service Scholars Teaching at High Need School	Not Teaching
8	7	6	1

ECU Noyce Program: Second Cohort

Scholars Recruited	Scholars Completed Program	In-Service Scholars Teaching at High Need School	Not Teaching
6	5	5	0

ECU Noyce Program: Third Cohort

Scholars Recruited	Scholars Completed Program	In-Service Scholars Teaching at High Need School	Not Teaching
10	9	9	0

Concluding Remarks

1. ECU Noyce program had challenges during recruitment phase.
2. Noyce program provided a huge retention framework for Noyce scholars.
3. Noyce program provided opportunities for its scholars to participate in undergraduate research opportunities and travel to conferences to present findings of their research.
4. Noyce program had a huge positive impact on the education, lives and careers of ECU Noyce scholars hailing from economically challenged geographical region such as rural southeastern Oklahoma.
5. Administering the Noyce program over past 6 years has been a great experience!

Acknowledgments

1. NSF
2. UNL
3. ECU
4. ECU Noyce PI-team and External Evaluator

I am extremely GRATEFUL for being accepted into the Noyce scholarship program. It is because of that scholarship that I was able to finish my education – period. Because of that scholarship that I am able to collaborate with some of the most established educators across America. I never saw myself as someone that would/could do research. It seemed more advanced than what I thought I was capable of. My mental capacity, self-esteem and respect for education have increased greatly while fulfilling the requirement of the scholarship. Now, none of this would be if it weren't for the Noyce program which has really allowed doors to FLY open for me. I cannot thank the Noyce program enough. It has TRULY changed my life – IN SERVICE ECU NOYCE SCHOLAR

**Noyce Scholars Presenting at Noyce Midwest
Regional Conference in Indianapolis (2012)**

