

Noyce Project Summer Internship Programs and Outcomes

Project	Program	Program Description	Outcomes
The College of New Jersey (TCNJ) (2016 Noyce grant)	STEP-UP: Summer Teaching Exploration Program for Undergrad Physics (3 weeks, 60 hours)	Receive instruction on physics pedagogy and reform-based science teaching; develop and perform interactive teaching demos in secondary physics classrooms including classrooms in high-need schools; receive mentoring from faculty from both TCNJ's School of Science and School of Education.	Program was effective in retaining and even enhancing interns' interest in teaching, but less successful in persuading interns to change their major to physics education. Identified 3 effective program elements: 1) providing a foundation in pedagogy and educational theory, 2) engaging in classroom teaching, and 3) taking time to reflect.
Columbus State University (2011 Noyce grant)	STEM Honors Camp Internships (3 one-week sessions during the summer)	Work with university faculty to engage middle school students in hands-on STEM activities. (Other internship opportunities included: working as tutors, peer leaders and outreach center staff – up to 400 hours.)	Between 2012 and 2015, 10 out of 30 interns took at least one teacher preparation course; 3 became Noyce scholars.
University of Houston (UH) (2012 & 2016 Noyce grants)	5 to 6-week internship includes both: - Summer Institute (1 week for 2012 grant; 2 weeks for 2016 grant) - STEM Summer Camp Internships (4 weeks; 7 hours per day)	- Work with UH alumni teachers who share lesson plans and classroom management techniques; develop lessons. - Serve as STEM camp counselors for middle schoolers; work with master teachers to facilitate STEM activities.	37 interns as of Fall, 2016; all but 3 still in teaching program; 5 became Noyce scholars.
Kent State University (2011 Noyce grant)	Summer Internship (4 weeks)	After one training session, work as STEM	A case study analysis of 5 Upward Bound

		teaching assistants in Upward Bound classrooms, STEAM camps or professional development programs.	interns who were not previously considering teaching as a career showed that 2 interns substantially increased their interest in teaching, and 2 marginally increased interest.
University of Rhode Island (2013 Noyce grant)	Summer Internship (10 weeks)	Participate in teaching experiences with children or youth in informal science education settings such as the YMCA, Audubon Society and Save the Bay Exploratorium.	About half of the summer interns apply to become teachers and Noyce Scholars. As of July 2016, 6 of 17 Noyce Scholars had been summer interns.
State University of New York at Oswego (2011 & 2013 Noyce grants)	Summer Teaching Experience (6 weeks, 120 – 300 hours)	Work with adolescents in academic or community classroom settings to gain an understanding of STEM teaching.	Six of the 8 education interns applied to become Noyce Scholars; 5 were accepted. (In contrast, only 1 of 10 research interns became a Noyce Scholar.)
Benedictine University (2013 Noyce grant)	Summer Internships (10 weeks)	Assist with teaching and developing instructional activities in informal settings including zoos, nature camps, an arboretum and a museum.	Of 38 interns, 4 moved into the science secondary education program, and one was already committed to science secondary education. All gained transferable skills, such as working with the public.
University of Northern Colorado (UNCO) (2010 Noyce grant)	Internship Program (only a few summer internships)	Summer interns served as aides at science/math camps. (Most internships were completed during the academic year with interns working with a local school district to assist with AVID tutoring of high school students	Of 52 summer and academic year interns, 11 became Noyce scholars and entered teaching. Internships helped solidify career choice and increase retention rather than change career plans. Recruited only a few career changers.

		or assisting at an environmental education center.)	
Colorado School of Mines (CSM) (2016 Noyce grant)	Internship Program (Takes place during Fall and Spring, <i>NOT Summer</i>)	Fall/Spring field experiences at schools; observe and assist with classroom activities, including lesson planning. Collaboration with UNCO to provide students at CSM – a premier engineering and applied science university – with a teacher preparation option which was not previously available.	Able to recruit students to become interns, but few decide to become teachers due to higher salaries elsewhere. Had 9 interns as of Spring, 2017.
Southern Illinois University Edwardsville (2013 - science & 2014 - math Noyce grants)	Summer Internships (200 hours)	Teach in educational outreach programs at the university or with community partners. Receive science pedagogy training for informal learning. Regularly reflect on experiences through writing prompts and meetings with project staff.	Of 40 summer interns, 4 became Noyce scholars. Two of the 4 made major changes in their career goals after interning; two somewhat changed their goals. One of the 4 was already planning to teach. All gained communication skills.
Northern New Mexico College (2010 Noyce Grant)	Summer Internships	Plan and implement informal science outreach activities. Teaching experiences with middle school students.	No information.
Austin College (2017 Noyce grant)	Summer Internships <i>Non-summer teaching opportunities/recruitment efforts:</i> <i>- January Term Course</i>	For Noyce scholars between junior and senior years; placement in informal STEM education setting. <i>- Hands-on teaching of science and math</i>	No information.

	- Paid Tutoring	<i>lessons/activities in local schools. - Opportunities for science and math majors to tutor middle and high school students in local schools.</i>	
California Polytechnic State University (2013 Noyce grant) Noyce grant covers STEM Teachers as Researcher (STAR) Program – Noyce Scholars participate in a summer of research. <i>The TeAMS Program appears to be a school offering that is not funded by the Noyce grant.</i>	TeAMS Program (Teacher Assistants in Mathematics and Science) – <i>NOT a summer experience</i> – Paid early field experience during Fall, Winter and Spring quarters; may participate for up to three quarters.	Work as teacher aides – tutoring individual students and observing classroom instruction – during the school year. Discuss teaching, learning and field experiences during weekly seminars. Write weekly reflections.	About 1/3 of students are exploring teaching as a career; 1/3 are already committed to teaching, and 1/3 just wanted a job.

Sources:

1) The College of New Jersey (TCNJ) – 2016 Noyce grant – Noyce grant number 1557357

Project website - <https://physics.tcnj.edu/noyce/>

Noyce conference presentation: <http://app.nsfnoyce.org/pi-abstract-pods/creative-strategies-to-find-a-few-needles-in-the-haystack-where-will-the-next-generation-of-great-high-school-physics-teachers-come-from/>

2) Columbus State University – 2011 Noyce grant – Noyce grant number 1136356

Project website - <https://uteach.columbusstate.edu/stem/>

3-4-2016 presentation, *Interdisciplinary STEM Teaching & Learning Conference*:
<https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1332&context=stem>

7-2-17 article with 2 case studies of Noyce scholars:
<https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1115&context=gerjournal>

3) University of Houston (UH) – 2012 & 2016 Noyce grants – Noyce grant numbers 1240083 and 1557309

Spoke with Paige Evans, but information in the table is from websites.

Project website: <http://www.uh.edu/nsm/physics/undergraduate/noyce-scholarship/>

UH Noyce internship information: <http://www.uh.edu/nsm/physics/undergraduate/noyce-scholarship/internship/>

NSF Award Abstract - 2012 UH Noyce -
https://www.nsf.gov/awardsearch/showAward?AWD_ID=1240083

NSF Award Abstract - 2016 UH Noyce -
https://www.nsf.gov/awardsearch/showAward?AWD_ID=1557309

News articles about receipt of 2016 Noyce grant – University of Houston website:

<http://www.uh.edu/nsm/teachhouston/news-events/stories/2016/0722-teacher-prep.php>

<http://www.uh.edu/news-events/stories/2016/October/102016NSFteachHoustonSTEMprep.php>

Article from American Physical Society website -- Recruitment, Retention and Preparation of Secondary Physics and Chemistry Teachers – <https://www.aps.org/units/fed/newsletters/fall2016/chemistry.cfm>

4) Kent State University – 2011 Noyce grant – Noyce grant number 1136377

Project website: <https://www.kent.edu/ehhs/tlcs/mat-program-noyce-scholarship>

Noyce conference presentation: <http://app.nsfnoyce.org/pi-abstract-pods/summer-teaching-internships-for-undergraduate-stem-majors-for-teacher-recruitment/>

Kent State case study article: <https://files.eric.ed.gov/fulltext/EJ1063002.pdf>

5) University of Rhode Island – 2013 Noyce grant – Noyce grant number 1339963

Email response from Anne Seitsinger.

Noyce conference presentation: <http://app.nsfnoyce.org/pi-abstract-pods/recruiting-stem-majors-into-teacher-education-uris-robert-noyce-teacher-scholarship-program/>

News article about receipt of Noyce grant – University of Rhode Island website:

<https://today.uri.edu/news/uri-wins-1-2-million-grant-from-the-national-science-foundation-to-inspire-students-professionals-to-teach-science-math-in-schools/>

6) State University of New York at Oswego (SUNY Oswego) – 2011 and 2013 Noyce grants – Noyce grant numbers 1136350 and 1339955

Email responses from Timothy Braun and Jean Hallagan.

Documents from project website: <https://www.oswego.edu/noyce-grant/>

Sponsors for Undergraduate Summer Experiences in Teaching:

https://acquia-prod.oswego.edu/noyce-grant/sites/acquia-prod.oswego.edu/noyce-grant/files/sponsors_for_teaching_assistants.pdf

Undergraduate Summer Experiences in Research & Teaching:

https://acquaia-prod.oswego.edu/noyce-grant/sites/acquia-prod.oswego.edu/noyce-grant/files/sunner_exp_teach_research_undergrad.pdf

7) Benedictine University – 2013 Noyce grant – Noyce grant number 1240091

Email response from Allison Wilson.

NSF Award Abstract - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1240091

News article from Benedictine University's magazine, *Voices Online Monthly*:

http://www.ben.edu/marcom/voices/vo-monthly/upload/VO_August2016.pdf

8) University of Northern Colorado (UNCO) – 2010 Noyce grant – Noyce grant number 1035333

Email response from Rob Reinsvold.

Noyce conference presentation: <http://app.nsfnoyce.org/pi-abstract-pods/the-noyce-scholarship-program-of-the-university-of-northern-colorado/>

9) Colorado School of Mines (CSM) – 2016 Noyce grant – Noyce grant 1557254

Email response from Rob Reinsvold.

Noyce conference presentation: <http://app.nsfnoyce.org/pi-abstract-pods/the-teacher-education-alliance-mines-unc-partnership-team-up-evolution-and-activities/>

News article about Noyce project – Colorado School of Mines website:

<https://www.mines.edu/research/a-meeting-of-minds/>

10) Southern Illinois University Edwardsville – 2013 - science and 2014 - math Noyce grants – Noyce grant numbers 1340042 and 1439827

Project website: <https://siuenoyce.org/>

NSF Award Abstract – 2013 - science Noyce –

https://www.nsf.gov/awardsearch/showAward?AWD_ID=1340042

NSF Award Abstract – 2014 - math Noyce –

https://www.nsf.gov/awardsearch/showAward?AWD_ID=1439827

11) Northern New Mexico College – 2010 Noyce grant – Noyce grant number 1035465

Project description from Northern New Mexico College website - https://nnmc.edu/wp-content/uploads/2016/02/Noyce_description1.pdf

NSF Award Abstract - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1035465

12) Austin College – 2017 Noyce grant – Noyce grant number 1660547

Project website: <http://www.austincollege.edu/academics/atp/noyce-stem-scholarships/>

NSF Award Abstract - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1660547

News article about receipt of Noyce grant – Austin College website:

<http://www.austincollege.edu/college-receives-1-2-million-for-stem-teacher-education-initiative/>

13) California Polytechnic State University – 2013 Noyce grant – Noyce grant number 1340110

Email from Dave Buck-Moyer.

Project website: https://cesame.calpoly.edu/content/noyce-scholars-programs-mathematics-and-science#Mathematics_Noyce_Phase_II_Scholars_Program

NSF Award Abstract - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1340110