



ACS Virginia Section Project SEED Report

Submitted by Michael Hunnicutt, Chair (1st year as Chair)
Executive Committee Meeting, 9-11 AM, Saturday, January 25, 2020
Temple Building (3309), Virginia Commonwealth University, Richmond, VA

Mission Statement

To ensure that students from economically disadvantaged backgrounds have opportunities to experience the challenges and rewards of chemically related sciences.

Goal Statement

To provide a positive, transformative experience for high school students aspiring to go to college and major in chemistry or a chemical sciences discipline. Students gain an expanded advocacy network, a heightened sense of personal accomplishment and a mastery of skills never imagined, and a new perspective with regard to their future plans for college and careers involving the chemical sciences.

2019 Executive Summary

Summer 2019 marked the 51st year of the ACS Project SEED Program. Two universities from the Virginia Section hosted Project SEED students. This was the inaugural year for Longwood (PUI) and the third consecutive year for Virginia Commonwealth University (R1). Eight students participated (5 SEED I) and (3 SEED II).

Program Coordinators were Sarah Porter (Longwood), and Mike Hunnicutt and Mychal Smith (VCU).

The programs at both institutions provided a 'hands-on' experience in a research laboratory as well as a number of college and career planning enrichment activities. Students from Longwood visited VCU at the conclusion of their program to tour the research labs and share their research experiences with the VCU Project SEED participants. Afton Chemical and DuPont Protection Solutions hosted the VCU SEED students and showed how chemistry is integral part of the product development process and what types of career opportunities are possible with a chemistry degree. At the conclusion each program, students from both institutions presented their research results in a poster session and submitted research reports to the National ACS Project SEED office.

A Richmond Times-Dispatch reporter attended the poster presentation and celebration event for the VCU SEED program. Her article appeared in the August 10th edition "*Six from RPS absorb knowledge of chemistry after summer spent in labs*" and described the evolution of the program at VCU and highlighted the 3 SEED II students enrolled at VCU, James Madison, and the University of Virginia (attached).

SEED student cash stipends were \$2,500 (SEED I) and \$3,000 (SEED II); total stipends = \$21,500.

Funding sources included the National ACS Project SEED Office (\$13,500), VA ACS Section (\$2,500), the Army Educational Outreach Program, The Blue Sky Fund (\$3,000), Longwood University, and VCU Chemistry (\$2,500). All the funds listed above were used exclusively to pay student stipends. No fees or indirect costs were deducted from the funds received.

2020 Goals

- Maintain SEED programs at Longwood University and VCU.
- Improve awareness and visibility of Project SEED in chemistry departments at colleges and universities in the Virginia ACS Section with the goal of increasing participation in 2021.

2020 Budget Request

- 2019 Budget: \$2,500
- 2020 Budget Request: \$5,250: distribution (\$1,250 Longwood University, \$4,000 VCU)
- Private donor commitment of \$2,000 to VA Section Project SEED (*contingent on requested budget approval*).

General Report

Summer 2019 marked the inaugural year of [Project SEED at Longwood University](#) as a part of the *Longwood Summer Scholars: Exploring Science* program. The program was jointly funded by the ACS and the Army Educational Outreach Program and provided a unique opportunity for high school students in the Southside Virginia region who are historically underserved to participate in a hands-on summer research experience and forge relationships with the faculty and students at Longwood.

Two students from Prince Edward County High School and two students from Randolph Henry High School participated in the program. They spent eight weeks working with faculty and undergraduates. The Project SEED and Army EOP students carried out college level research, learned laboratory skills in various disciplines, participated in professional development and social activities, prepared a written manuscript of their research, and presented their work at Longwood's Summer Scholars poster session. They also visited the Project SEED program at VCU.



Sarah Porter (Chemistry) served as the program coordinator and as a faculty mentor. Two other chemistry faculty also served as mentors. The program also provided the opportunity for three Longwood senior chemistry majors to serve as student mentors for the high school students.

Antonio Harvey (Prince Edward County H.S.): SEED I. Mentor: Dr. Sarah Porter, Longwood Scholar Mentor (undergraduate): Sarah Ghali. Project: *The analysis of petroleum products for forensic and environmental applications.*

Katelyn McCrillis (Randolph Henry H.S.): SEED I. Mentor: Dr. Sarah Porter, Longwood Scholar Mentor (undergraduate): Sarah Ghali. Project: *The analysis of petroleum products for forensic and environmental applications.*

Project SEED at VCU: VCU Chemistry hosted the Project SEED program for the third consecutive year. VCU has hosted 15 students from Richmond Public High Schools over the past 3 years. Summer 2019 marked the first year VCU hosted SEED I and SEED II students. All three SEED II students were accepted to 4-year universities in Virginia and are majoring or minoring in Chemistry. Student cash fellowship awards were sponsored by the National ACS, the local VA ACS, VCU Chemistry, and the Blue Sky Fund.

Similar to the SEED program at Longwood, students worked in a research laboratory under the supervision of a faculty member on a project designed for them in addition to participating in enrichment and college-preparatory activities. The enrichment activities included tours at Afton Chemical and DuPont Protection Solutions, freshman and sophomore level instruction and labs in General Chemistry, Organic Chemistry, and Quantitative Analysis, and 'lunch and learn' sessions on topics ranging from applying for financial aid, college applications, and meeting the Longwood Summer Scholars students.

The program culminated with poster presentations given by each student. The family, friends, and high school teachers attended and celebrated the SEED students' accomplishments. The student talks were impressive. Each carefully and clearly explained their projects without any notes and using the appropriate vocabulary – remarkable given that these students had only taken one year of high school chemistry. The students also shared their experiences and agreed that although they were at first intimidated or overwhelmed, they now were confident and knowledgeable.

The VCU program involved 10 faculty and 18 graduate students. Mike Hunnicutt and Mychal Smith served as the Program Coordinators with Ashish Nag as the graduate assistant coordinator.

Amazin Bullock (Thomas Jefferson H.S.): SEED II. Attending JMU majoring in Chemistry. Mentor: Dr. Katharine Tibbetts, Ambassadors: Laysa Frias, Karli Kunzler. Project: *Optimization of Palladium Nanoparticle Synthesis in Laser Plasma*

Brian Fogham (Thomas Jefferson H.S.): SEED II: Attending VCU majoring in Chemistry. Mentor: Dr. Mohammad El-Shall, Ambassadors: Hiran Kiriarachchi, Julian Bobb. Project: *Laser Synthesis of Palladium Nanoparticles Supported on Iron-base Materials for CO Oxidation*

Milan Marsh (Open H.S.): SEED II: Attending U.Va. majoring in Math with Chemistry minor. Mentor: Hani El-Kaderi, Ambassador: Shamara Weeraratne. Project: *Design Synthesis of Redox-Active Polymers for Sodium Battery Application*

Ellie Leon-Vitervo (George Wythe H.S.): SEED I Mentor: Dr. Christopher Kelly, Ambassador: Anthony Le. Project: *Synthesis of a Homoallylic Tosylate to Evaluate Photoredox Processes*

Bre'Shon Dunson (Thomas Jefferson H.S.): SEED I Mentor: Dr. Joshua Sieber, Ambassador: Samantha Gargaro. Project: *Pd-Catalyzed Cross- and Homocoupling of Fluorinated Arenes*

Brian Marsh (Open H.S.): SEED I Mentor: Dr. Mohammad El-Shall, Ambassador: Mrinmoy Das. Project: *Photocatalytic Degradation of Atrazine by Palladium-Doped ZnIn Metal Organic Framework Catalysts*



Attachment

Gabby Birenbaum, Richmond Times-Dispatch, August 10, 2019, Section A5. "Six from RPS absorb knowledge of chemistry after summer spent in labs".