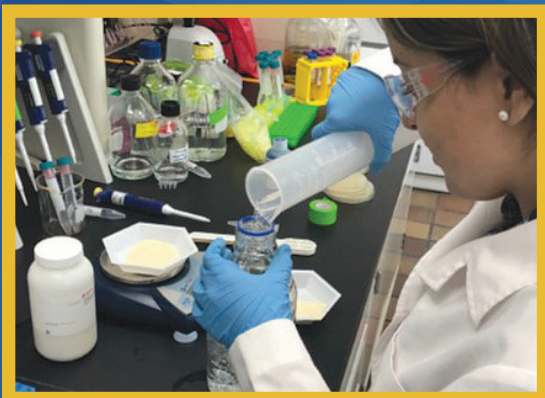




ACS Project SEED
Chemistry for Life®

2018 Project SEED Program Summary



50th
Anniversary
Project
SEED
1968–2018
AMERICAN CHEMICAL SOCIETY



2018 ACS Project SEED Committee and Staff

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Project SEED Mission Statement

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



Project SEED

Executive Summary

This year marked the 50th Anniversary of Project SEED, a program from the American Chemical Society (ACS), which has changed the lives of nearly 11,000 students who have participated since its inception. The program provides high school students from economically disadvantaged families an opportunity to participate in research and learn what it is like to work in science-related fields through a hands-on experience. Students are placed in academic, industrial, and governmental laboratories for 8 to 10 weeks during the summer. This summer, over 400 volunteer scientists and coordinators from more than 156 institutions in 39 states, the District of Columbia, and Puerto Rico mentored a total of 430 students.

Students provided feedback on the success of the program with 417 responding to an end-of-program survey. The results provide information on the background of the students, their educational aspirations, and their assessment of Project SEED.

Fifty-one percent of the respondents indicate that the Project SEED experience helped them to decide to pursue a career in science, and 96% indicate that Project SEED helped them to develop new skills and abilities; 78% note that Project SEED was successful in improving their self-confidence; and 84% indicate that they will become a scientist, engineer, or mathematician. When asked to evaluate their experience with their mentor, 76% agreed that they learned new skills from their mentors, and 94% stated that their SEED mentor assisted them with improving their overall performance and research work. Most of the respondents rated the overall experience with Project SEED as "Excellent".

Project SEED 50th anniversary was celebrated at the 256th ACS national meeting in Boston, where presidential events included a symposium, "Growing with Project SEED: 50 years and 10,000+ Students". Former SEED students shared their success stories and explained how the program experience changed their lives and motivated them to pursue chemistry careers. Coordinators and mentors also spoke about the impact of the program in the lives of thousands of students. In addition, Nobel Laureate, Sir Fraser Stoddart and champion for the 50 Forward fundraising campaign delivered remarks about his campaign and praise for the program. ACS President, Peter Dorchout, recognized the hundreds of volunteer mentors, and applauded the achievements of the students. A video featuring important achievements and success of the past 50 years of the program was shown at the 50th Anniversary reception where ACS honored the contributions of more than 400 coordinators and mentors with the presentation of awards. Students had the opportunity to talk to members of the Project SEED Committee and convey their comments about the program at a Student Mixer. In addition, a reception, "A Conversation with Sir Fraser Stoddart – Champion, 50 Forward Campaign" was held with participation of SEED students. Over 150 people attended this milestone anniversary celebration. The celebration concluded with the participation of 60 students representing Central New York, Georgia, Indiana, Maine, Maryland, New York, North Jersey, Philadelphia, Rhode Island, and Trenton local sections at the Sci-Mix research poster event.

The ACS Project SEED Endowment, industries, foundations, academic institutions, ACS Local Sections, and ACS friends and members supported total student fellowships of \$1,117,500. ACS provided student fellowships and paid all administrative costs.

Since 1993, more than 670 Project SEED alumni entering their first year in college and pursuing careers in a chemical science have been awarded with a one-year non-renewable Project SEED college scholarship. This academic year, 2018-2019, twenty-eight scholarships were awarded. The Project SEED scholarships were made possible by generous donations from the Alfred and Isabel Bader, Ashland Inc., Bayer Foundation, Russel J. Fosbinder, and Ulliyot endowments. In addition, three Project SEED college scholars received the Ciba Specialty Chemicals scholarships for three renewable years beginning in their sophomore year. To date, 15 Ciba SEED alumni have graduated with science degrees.

The American Chemical Society (ACS) thanks once again all of the past and present coordinators and mentors for their dedication, support, and encouragement, given to thousands of Project SEED students during these past fifty years. Thank you to the myriad financial contributors for their generosity. This successful program would not be possible without the support of volunteers like you, your generous support, and your dedication. Thank you!

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Students

ALABAMA

Jacksonville State University, Nixon Mwebi
Nixon Mwebi

Summer I
Keira Ross

Summer II
Luke Jaskowski

ARKANSAS

University of Arkansas at Pine Bluff, Grant Wangila
Grant Wangila

Summer I
Keyshawn Harris
Chelsa Slms

CALIFORNIA

California Local Section, ACS, Elaine Yamaguchi
Brian Adzima Autodesk Inc.

Summer I
Peter-Phu Do

Cory Brooks California State University, Fresno
John Livesey

Grizelda Aguilar
Hammad Shahid

Les Jackowski Chevron Energy Technology Company
Toni Miao
Deanna Quon, Tao Wei
Rachel Mohler
Matthew Hurt

Javier Garcia
Marco Mata Mendoza
Gladys Nava
Steven Ramirez
Jose Ticas

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Mike Long Chevron Products Company

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Khaleemah Rashid-Miggins

Paula Vettel Novvi, LLC

Shuzhen (Diana) Li

Weiming Wu, San Francisco State University
Herbert Muchalski,
Kalyani Maitra
Mike McCallum, Ben Strokes
Misty Kuhn

Wen Yan (Mandy) Huang

Samuel Leiboff University of California, Berkeley

Giovanni Lara

Joanna Chiu University of California, Davis
Macli Melotto

Stacy Martin
Ozaliqe Williams

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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Liang Shi

Eva de Alba Bastarrechea
Hrant Hratchian
Ben Stokes
Anand Subramaniam
Victor Munoz
Patti LiWang
Andy LiWang

Andy Franz University of the Pacific

David Sparkman, Jianhua Ren
Qinliang Zhao
Jerry Tsai

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Spencer Walse

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Ron Haff

David Obenland USDA-ARS Water Management Res. Lab

Jennifer Bragg Western Regional Research Center

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Robert Vellanoweth
Michael Hayes
Frank Gomez
Xin Wen

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Jingsong Zhang University of California, Riverside

Students

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Stacey Conley
Ravinder Johal
Pei Qiao Xie
Vanessa Arceo
Leonardo Canchola
Ixchel Gonzalez
Maycy Lee
Kaneen Muldrow
Cielo Garcia Regalado
Nellie Vang

Samantha Baker
Qi Deng
Ulices Contreras
Nila Thongthirak
Sokobe Chuong
Christina Le

Cerlina Li
Eduardo Martinez

George Chong
Jimmy Wu

Donglin Song
Christine Tran

Selina Chen

Summer II

Raymond Garcia
Lorena Orozco
Jingjun Zeng

Emily Roman

Cindy (Chui Yi) Ho

Karen Cervantes Sataray

Summer I

Yasmine Cisneros
Kevin Gutierrez
Ruby Navarro
Stephany Perez

Summer I

Manny Medrano

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

San Diego Local Section, ACS, Valerie Kuck

Jing Gu San Diego State University
Manal Swairo
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Junzhe Lou
Matteo Cargnello

Kevin Hou

University of California, Davis, Shota Atsumi

Xi Chen
Louise Berben

Susan Kauzlarich
Shota Atsumi

University of San Diego, Jessica Bell

Anthony Bell

Students

Summer I

Hamsa Ali
Aliyah Armstrong
Anthony Herfi

Summer I

Jacquelyne Nguyen
Serey Nouth

Summer II

Thanh Luong

Summer I

Ihuoma Ihejirika
Anh Vo

Summer II

Jacinto Lepe-Banales
Long Nguyen

Summer I

Blane Anteneh

COLORADO

Colorado State University – Pueblo, David Dillon

Matthew Cranswich
Sandra Bonetti

Matthew Cranswich

Summer I

Matalyn Craighead
Maelah Robinson-Castillo
Kylie Santistevan

Summer II

Zek Kelly

CONNECTICUT

University of Connecticut, Alfredo Angeles-Boza

Alfredo Angeles-Boza

Summer I

Ivette Lopez

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Chemical Society of Washington, Wesley Farrell

Alexander Zestos American University

Kaveh Jorabchi

Georgetown University

Summer I

Nathan Dagado

Eldana Tadesse

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Akos Vertes
Michael Massiah
Andrew Davis
Xueging Song
Mary-Christine Onuta
James Fedchak

George Washington University
Library of Congress, Preservation Research and Testing Division
University of the District of Columbia
University of Maryland, Baltimore County
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Students

Edwin Abarca
Mussa Abbo
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Christine Folivi
Darlin Paredes Hernandez
Erick Cardenas
Kevin Hu
Summer II
Cylah Bailey
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FLORIDA

Barry University, George Fisher
Rajeev Prabhakar
University of Miami

Summer I
Gabriela Hernandez
Irena Lian

GEORGIA

Clark Atlanta University, Ishrat Khan, James Reed
Shirnece Brown, Amal Al-Abdulrahman.
Michael Williams
James Reed

Summer I
Alexis Grady
Da'Miah Johnson
Anthony Walker

Georgia College and State University, Catrena Higginbotham
Catrena Lisse
Georgia College & State University

Summer I
Cameron Snyder

Summer II
Alexis Roberson

Georgia Gwinnett College, Ajay Mallia
David Pursell
Thomas Gluick
Neville Forlemu
Ajay Mallia

Summer I
Aziza Ahmed
Jeovanny Alvarenga
Christopher Flores-Santos
Jennifer Kim
Joel Suazo

IDAHO

Idaho State University, Andrew Holland
Joshua Pak
Andrew Holland
Lisa Goss
Caryn Evilia

Summer I
Crystal Cruz
Isaiah Long
William Hathaway
Chase Olson
Sylvia Shutes

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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Jeunghoon Lee
Kevin Ausman
Hui Xiong
Scott Phillips

Boise State University

Students

Summer II

Andrew Perry

Summer I

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Calvin Nguyen
Eric Storch
Sydney Walker

ILLINOIS

Chicago Local Section, ACS, Raelynn Miller

Wei-Tsung Lee
Hee Yeon Cho

Loyola University of Chicago

Summer I

Kristine Hwang
Megan Lay

Illinois-Heartland Local Section, ACS, Kervin Evans

Dean Campbell
Rebecca Roesner
Susan McCormick

Bradley University

Illinois Wesleyan University

USDA

Summer I

Malaya Williams
Dyquarius Gilbert
LaShae Nelson

INDIANA

Indiana Local Section, ACS, Elmer Sanders

Jeffrey Hansen

DePauw University

Summer I

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Patrick Barber

Earlham College

Freya Beinart
Dylan Selby

Stanley Kolis
Anthony Borel

Eli Lilly and Company

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Indiana University School of Dentistry

Fizzah Qureshi

Teresita Bellido
Charlie Dong

Indiana University School of Medicine

Roberto Rico
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Horia Petrache

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Corey Thompson

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KANSAS

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Summer II

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Nahum Gerezgher
Sherlyn Lopez-Contreras
Rania Ousman

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Summer II

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Abdullahi Mohamed

Summer I

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Summer II

Mohammed Ullah

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2018 Project SEED Summer I & II Programs

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Penny Beuning

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Stonehill College, Cheryl Schnitzer
Louis Liotta

Summer II
Pui-Lam Lo
Brandon Ugbesia

MICHIGAN

Henry Ford Community College, Keith Williams
Aaron Rury
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G. Andres Cisneros

Summer I
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Hobibur Miah

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Wayne State University

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Kalamazoo College

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Summer I
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2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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James Geiger

Students

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Mohamed Salem
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3M Company, Sarah Mullins

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Summer I

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Ryan McCulla

Summer I

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Julie Pigza
Matthew Donahue
Jacques Kessl

Summer I

Skylia Bell
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2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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MONTANA

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Summer I
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NEBRASKA

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Devendra Agrawal

Summer I
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Marco Pena

NEVADA

University of Nevada, Reno, Laina Geary
Christopher Barile
Sage Hiibel

Summer I
Olivia Hall
Muskan Kapila

NEW JERSEY

**Academy for Enrichment & Advancement,
Union City High School, Amanda Smith**
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Hosam Mansour
Nadia Makar

Mina Armani

Judith Barrios

Michele Pavanello

Nadia Makar

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Treena Arinzeh New Jersey Institute of Technology

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Christian Traba Saint Peters University

Fairleigh Dickinson University, Marion McClary

Catherine Daugherty

Marion McClary

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Ashley Armengolt
Humberlo Flores
Alina Guerrero
Precious Perez
Samantha Ordonez

Summer II

Joan Almendarez
Raquenel Abreu
Ranol Handapangoda
Verenice Bonilla
Allyson Perero

Summer I

Victoria Gonzales

Johan Ayala

William Estrada
Jizhady Paez

Gonzalo Alarcon
David Felix
Victoria Rodriguez

Summer II

Leilani Garcia

Michael Yanqui

Jeff Chen

Alyssa Vargas

Chelsea Castillo

Summer I

Johnny Lazo
Mina Youssef

Summer II

Stephanie Caballero-Vega
Youstina Youssef

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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Simon Podkolzin Stevens Institute of Technology
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Kean University, Michael Tocci

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Ramapo College of New Jersey, Carol Frishberg

Catalin Martin

Rider University, Jamie Ludwig

Danielle Jacobs
Jamie Ludwig

Students

Summer I

Tatyana Lazareva
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Summer I

Erika Calle
Aysha Zaher
Tahiyah Brinkley
Shanel Calle
Ariyana-Jeshira Samuel
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Summer I

Elizabeth Guerrero
Vanessa Hernandez
Angie Tamayo

Summer II

Johanna Aguilar
Daniella Blanco
Sommer Gomez Gonzalez

Summer I

Claire Fabito
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Shayla McQueen
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Summer II

Christy Zheng
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Hiroshi Onyinah Poku

Summer I

Nahian Ahmed
Maliha Yeasmin

Summer I

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Tyana Spalding
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2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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Summer I

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Summer II

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Summer I

Anton Krotenok

Philip Krotenok

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Timothy Boyle

Bernadette Hernandez-Sanchez

Summer I

Gabriella Atencio

Faith Lopez

NEW YORK

Advanced Science Research Center, Adam Braunschweig

Rein Ulijn

City University of New York

Adam Braunschweig

Xi Chen

Summer I

Brianna Levy

Jheaneel Rose

Fatoumata Sillah

Columbia University Medical Center, Jianwen Que

Jianwen Que

Summer I

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Eastern New York Local Section, ACS, William Kennerly

Madushi Raththagala

Skidmore College

Zhang Wang

University at Albany

K.V. Lakshmi

Rensselaer Polytechnic Institute

Thomas Hughes

Siena College

Summer I

Rebecca Garcia

Luca Gabriele

Masson Lampron

Bethany Matala

Ellis Preparatory Academy, Jeremy Heyman

Daniel Esposito

Columbia University

Allie Obermeyer

Karen Kasza

Columbia University, School of Engineering

Roberto Ketson

and Applied Science

Marisol Herrera-Perez

Summer I

Fatouma Doucoure

Luciana Gil Rosario

El-Hossin Salem

Dauris Rodriguez

Samiratou Sanga

Nabil Titikpina

Rochester Institute of Technology, Lea Vacca Michel

Hans Schmitthenner

Rochester Institute of Technology

Anju Gupta

Gabrielle Gaustad

Gerald Takacs

Summer I

Faduma Abdi

Philip Davis, Jr

Nyelah O'Meally

Tyshawn Roundtree

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Carly Reed
Alexey Ignatchenko
Todd Krauss

The College at Brockport, SUNY
St. John Fisher College
University of Rochester

Callie Babbitt
Rochester Institute of Technology

Syracuse University, Miriam Gillett-Kunnath

Miriam Gillett-Kunnath

Students

Alicia Gonzalez
Reem Ibrahim
Rachel Kelly

Summer II

Raia Weathers

Summer I

Zau N-Hkum
Ahlam Zokari

NORTH CAROLINA

High Point University, Comfort Boateng

Comfort Boateng

Summer I

Ruta Tekle

North Carolina Local Section, ACS, J. Stewart Witzeman

Weitao Yang
Jie Liu

Duke University

Summer I

Sara Reyes
Leah Zachary

Elena Jakubikova
Qingshan Wei
Gufeng Wang
Omar Christian
Melissa Pasquenelli

North Carolina State University

Sarai Bartolo Fabian
Joshua Greene
Jhonatan Martinez
Kamryn Sneed
Masita Wicaksana

Jeffrey Dick
The University of North Carolina at Chapel Hill

Yiu Ho Tung

Kathleen Donohue
Duke University

Summer II

Abel Maasho

University of North Carolina-Charlotte, Michael Walter

Kirill Afonin
Christopher Bejger

Summer I

Samantha Eisen
Afrah Faraz

Daniel Rabinovich
Michael Walter

Summer II

George Andrade
Mirna Peralta

OHIO

Case Western Reserve University, Carlos Crespo-Hernandez, Laura Bruckman

Genevieve Sauve
Laura Bruckman

Roger French
Carlos Crespo-Hernandez

Summer I

Manal Faleh
Precious Flanders
Princesse Thompson
Dominique Gardner
Rayele Malone

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

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Emily Pentzer
Chris Dealwis
Carlos Crespo-Hernandez

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Jeffrey Mighion
Hanbin Mao

Chrys Wesdemiotis University of Akron
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Li Jia
Shi-Qing Wang
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Anna Gudmundsdottir
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Weil Li
Cora Lind-Kovacs
Ajith Karunaratne
Emanuela Gionfriddo

Michael Young
Ajith Karunaratne

Youngstown State University, Sherri Lovelace-Cameron

Sherri Lovelace-Cameron

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Christina Smith

Summer II

RhayAuna Dent
Nickie Lam
Dawn Luong

Summer I

Kristina Dyshko
Cole Strekal
Mariama Kamara
Maggie Paul

Fatimatou Dlane
Alana Hopson
Daphnie Kennedy
Anthony McCants
Emmanuel Myers
Daechanea Williams

Summer I

Sufyaan Ali
Jery Avery

Summer II

Alexis Mack
Eva Mazzola
Olivia Reblando

Summer I

Joseph Do
Italia Fernandez
Claire Gray
Elijah Long

Summer II

Kayala Goolsby
Doyun Kim

Summer I

Preston Bosley
Sarah Welsh

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Students

OREGON

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Summer I

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PENNSYLVANIA

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Douglas Powell

Philadelphia Water Department, Adam Eyring

Adam Eyring

Slippery Rock University, Donald Zapien

Donald Zapien

Solvay, Tiffany Chen

Tiffany Chen

Summer I

Savion Jemison

Summer I

Krystal Roche

Summer I

Jade Bodie
Morgan Daily

Summer II

Kristen Gilmore

PUERTO RICO

University of Puerto Rico, Rio Piedras, Ingrid Montes

Marvin Bayro
Jose Rodriguez
Jose Lasalde
Dalice Pijero-Cruz
Eduardo Nicolau
Arthur Tinoco

Carlos Cabrera

Jorge Colon
Marvin Bayro

Summer I

Delaney Alejandro Negrón
Dereahise Garcia Almedina
Camille Collazo
Rafael Luna
Grace Sastre Ramos
Juan Rodriguez
Ivanelis Marie Rodriguez Vega
Sylvette Pagan

Summer II

Alianys Rosario Colon
Danitza Vazquez

RHODE ISLAND

Brown University, Brenda Rubenstein, Mindy Levine, Seann Mulcahy, Jerome Robinson

Jerome Robinson Brown University
Brenda Rubenstein

Summer I

Robin Fidel
Sandy Lastor
Omar Martinez

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

John Breen
Seann Mulcahy
Providence College

Jason Dwyer
Jiyeon Kim
University of Rhode Island

Students

Delssy Garay
Aminah Islam

Anna Khabaeva
Aditi Patel

SOUTH CAROLINA

University of South Carolina, Chuanbing Tang
Morgan Stefik

Aaron Vannucci
Linda Shinizu
Dmirtry Peryshkov
Chuanbing Tang
Thomas Makris

Summer I
Dylan Kier

Summer II
Aujaunae Brown
Jassamine Green
Presious Breeland
Samuel Hankinson
Veda Lightfoot

TENNESSEE

LeMoyne-Owen College, Yahia Hamada
Yahia Hamada

Sherry Painter

Middle Tennessee State University, Paul Gregory Van Patten
Keying Ding

Summer I
Ayat Ayesh

Summer II
Khadijah Darboe
Sarah Shotwell

Summer I
Jessica Bullock

TEXAS

Baylor College of Medicine, Laura Perry
Xander Wehrens
Oluwatoyin Asojo
Brendan Lee
Jin Wang, Imani Bijou, Abiodun Adeosun, Xiaoli Qi
Chris Dinh
Adam Kuspa

James Phillips
Kjersti Aagaard-Tillery

Summer I
Maria Gelves
Marcus Henriquez
Jessica Hernandez
BaoChau Le
Josue Herrera Rivera
Anthony Smith

Summer II
Carlos Gerardo Fuentes
Miguel Velasquez

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Greater Houston Local Section, ACS, Carolyn Burnley

Hua-Jun Fan	Prairie View University
Bruce Prince	Texas Southern University
Mehmet Orman Praveen Bollini Jakoah Brgoch	University of Houston
B. Montgomery Pettitt	University of Texas Medical Branch
David Thompson	Sam Houston State University
Joy Cocchiara, Dan Villalanti	Texas Southern University
Crystal Young	University of St. Thomas

Lamar University, Sylvestre Twagirayezu

Christopher Martin
Sylvestre Twagirayezu

Rice University, Venkata Pavan Raja Manuri

Andrew Barron

San Antonio Local Section, ACS, E. Robert Fanick, Maritza Quintero

Paulo Carvalho	University of the Incarnate Word
Gary Jacobs Zachary Tonzetich Gary Jacobs Heather Bonduris Stephen Bach	University of Texas at San Antonio
Paulo Carvalho	University of the Incarnate Word
Kathryn Mayer	University of Texas at San Antonio

Students

Summer I

Christian Gonzalez Ponce

Mariel Gonda
Timothy Osazuwa

Maria Bolanos
Victoria Quach
Monye Williams

Emiliano Perez Gomez

Summer II

Laila Tucker

Heaven Banks

Robin Reyes Velasquez

Summer I

Miguelina Martinez-Purez
Westley Pollard, III

Summer I

Zainab Abolade Lawson
Kenya Soto

Summer I

Alyssa Arizola

Jonathan Castro
Cheyenne Fields
Ayanna Fisher
Savannah Rios
Michael Trimble

Summer II

Robert Castillo

Bryan Valdivia

UTAH

University of Utah, Shelley Minter

Henry White

Summer I

DeSange Kuenihiria

2018 Project SEED Summer I & II Programs

Institutions/Coordinators/Mentors

Students

VERMONT

University of Vermont, Rory Waterman

Mathew Liptak
Rory Waterman
Matthias Brewer

Summer I

Hope Petrano
Hessain Tamang
Zachary Taylor

VIRGINIA

Christopher Newport University, Steven Harris

Kathryn Cole-McNamara
Joshua Patterson

Summer I

Beom Hem
Zaaheem McCall

George Mason University, Rocio Caballero-Gill

Rocio Caballero-Gill

Summer I

Maya Parada

Virginia Commonwealth University, Michael Hunnicutt, Mychal Smith

Hani EL-Kaderi
Katherine Tibbetts

Summer I

Milan Marsh
Amazin Bullock

WASHINGTON

Richland Local Section, ACS, Anna Cavinato

Anna Cavinato Pacific Northwest National Lab., WA

Summer I

America Sevilla

Washington State University, Su Ha

Jake Gray

Summer II

Hongyeoul Park

WEST VIRGINIA

Marshall University, Derrick Kolling

Michael Norton

Summer I

Carrie Floyd

West Virginia State University, Michael Fultz

Michael Fultz

Summer I

Kasey Blankenship
Madison Mallory

WISCONSIN

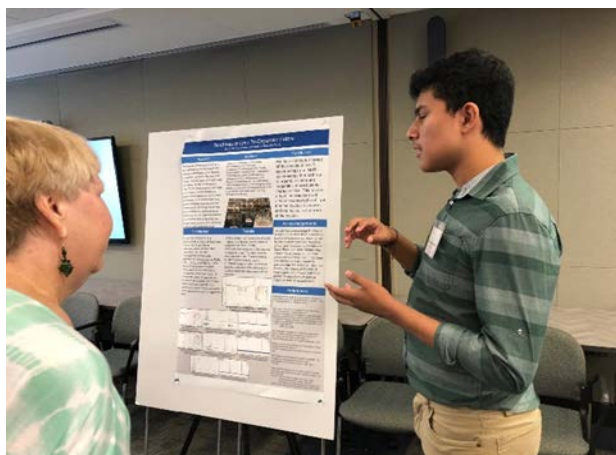
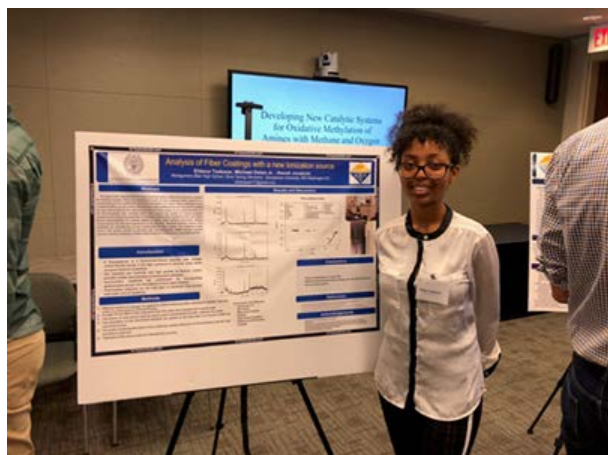
Medical College of Wisconsin, Elsa Knysak

John Corbett
Blake Hill

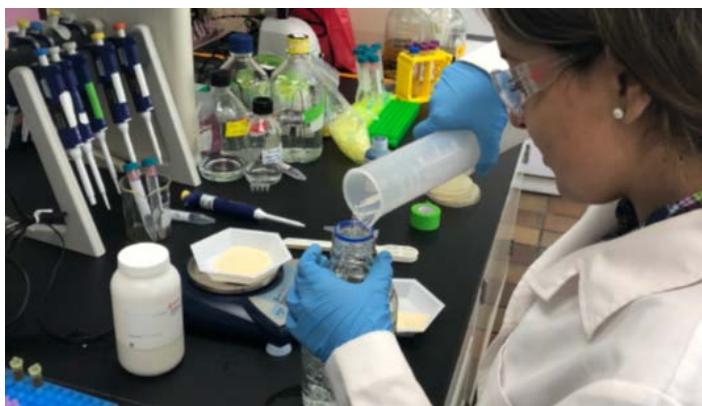
Summer I

Shelley Feil
Oluwapelumi Oguntade

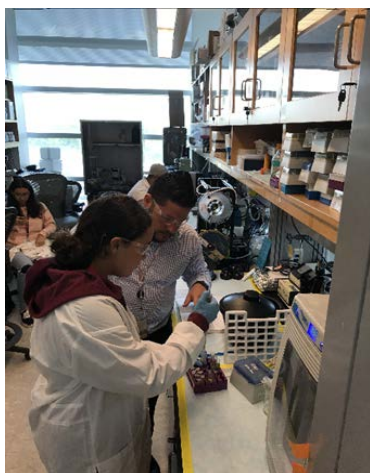
2018 Project SEED Summer I & II Programs



Courtesy, Chemical Society of Washington, ACS



Courtesy, University of Puerto Rico, Rio Piedras



2018-2019 College Scholarship Recipients

The Project SEED College Scholarship is a first-year nonrenewable scholarship for Project SEED participants entering their freshman year majoring in a chemical science field. In 2018, 28 students who have demonstrated a high potential to succeed in chemistry were awarded the college scholarships for the 2018-2019 academic year. Additionally, three SEED alumni were awarded a three-year renewable college scholarship for the 2018-2020 academic year. Congratulations to the recipients of the College Scholarships; the ACS Committee on Project SEED wishes all students continued success in their future studies.

Ciba Specialty Chemicals Scholars

CIBA Specialty Chemicals was a leading global chemical company acquired by BASF in 2008. The Ciba Foundation made a generous legacy gift to the American Chemical Society to establish the Ciba Specialty Chemicals Scholars Endowment, a new component added to the Project SEED college scholarship program, which expanded the one-year Project SEED college scholarships to a three-year renewable scholarship. As of today, 13 of the 21 awardees have graduated in the chemical sciences.



Rayna Bandy is attending New Mexico Institute of Mining & Technology, majoring in Chemistry.

Career goals: Rayna's goal is to finish her undergraduate degree as well as her Master's in Chemistry, and to ultimately obtain a doctorate degree in Medicinal Chemistry.



Beili Huang is attending the University of California, Davis, majoring in Chemical Engineering.

Career goals: Beili's goal is to pursue a Chemical Engineering degree and continue research in medicine.



Nicole Taylor is attending Rensselaer Polytechnic Institute, NY, majoring in Chemistry.

Career goals: Nicole sees herself as a Chemical Physicist, synthesizing nanostructured materials while focusing on graphene/graphite materials.

Alfred and Isabel Bader Scholars

Alfred Bader is one of the founders of the Sigma-Aldrich Company, today Sigma-Aldrich Co. **Alfred and Isabel Bader** have generously contributed to Project SEED over the years. In 1992 their support started the Summer II program and since 1997, supported the Project SEED college scholarships.

Ashland Scholars

Ashland Inc. is a leading global company which provides specialty chemicals, technologies and expertise to customers worldwide. Since 2011, Ashland Inc. has sponsored Project SEED alumni.

Bayer Scholars

The Bayer Foundation contributed to the Project SEED Endowment. Bayer is a research based company with major businesses in health care and life sciences as well as chemicals and imaging technologies. Since 1993, Bayer has supported Project SEED alumni.

Fosbinder Scholars

The Estate of Elizabeth Ernest Fosbinder, wife of late ACS member, Dr. Russel J. Fosbinder stipulated the establishment of an endowment in honor of Dr. Fosbinder to fund college scholarships for graduates of Project SEED. Since 2004, the endowment has supported Project SEED alumni.

2018-2019 College Scholarship Recipients

ALFRED & ISABEL BADER SCHOLARS



John Carvajal is a graduate of Union City High School, N.J. Under the guidance of Robert Aslanian at the New Jersey Institute of Technology, John worked on a research project titled- "Conducting N-Arylation of Sulfonamides with Boronic Acids using a New Method." John is majoring in Chemical Engineering at the New Jersey Institute of Technology.

Ruth Cervantes is a graduate of Armijo High School, Calif. At Nexeo Solutions, Calif., under the direction of Ken Forbes, she worked on a research project titled "Contamination in a Chemical Distribution Plant." Ruth will attend Solano Community College, Calif., majoring in Analytical Chemistry.

Jeff Chen graduated from John F. Union City High School, N.J. Under the guidance of Daniel Torres at the New Jersey Institute of Technology, he worked on research titled "Computational Insight into Materials for Energy: Electronic Structure of Co-Cu Alloy Surfaces by First Principle." Jeff is majoring in Chemical Engineering at the institute where he did his summer research.

Ishmam Chowdhury graduated from John F. Kennedy Educational Complex (STEM) Academy, N.J. Under the direction of Catalin Martin, Ramapo College of New Jersey where she worked on a research project titled "Infrared Spectroscopy of BiTeCl Crystal." Ishmam will major in Chemical Engineering at Rutgers University, N.J.

Leslie Coronado is a graduate of Amos Alonzo Stagg High School, Calif. Leslie worked with Jerry Tsai at the University of California, Davis on research titled "Effects of Protein Sequence on Protein Structure Through Modern Molecular Biology Techniques." She is majoring in Biochemistry at the University of California, Davis.



Kristen Gilmore graduated from Bristol High School, Pa. At Solvay, Pa., under the direction

of Julie Tanavade she worked on a research project titled "Developing Mild Body Wash Using Zein Assay and DFA 100 Dynamic Foam Analyzer." Kristen is majoring in Chemistry at the University of the Sciences, Pa.

Briana Haas is a graduate of Bristol High School, W.Va. Under the direction of Michael Fultz at West Virginia State University, Briana's research was "Aluminum Complexation". She is majoring in Chemical Engineering at West Virginia University.

Meilu Huang is a graduate of Galileo Academy of Science and Technology High School, Calif. At Libby Laboratories, Calif. under the guidance of Gennady Borinshteyn, Meilu worked on a research project titled "Chemical and Microbial Analysis of Cosmetics." She is majoring in Biochemistry/Chemistry at Pepperdine University, Calif.

Ifeoluwa Kehinde graduated from Grand Prairie High School, Tex. Under the direction of Phillip Pelphrey at Texas Wesleyan University, Ifeoluwa worked on research titled "Synthesis of Small-Molecule Compounds as Potential Antibiotics." She will attend University of Texas at A&M majoring in Biochemistry,

Long Nguyen is a graduate of Florin High School, Calif. Long worked at the University of California, Davis under the guidance of Shota Atsumi on a research project titled "Biological Production of Valuable Chemicals." Long will major in Biochemistry at Cosumnes River College, Calif.

Truc Nhat Nguyen graduated from Franklin High School, Calif. Under the direction of Brad Hansen at Harvard College, Mass., Truc worked on a research project titled "Studies Related to Herbicide-Resistant Weed Species." Truc is attending Harvard College, Mass., majoring in Biochemistry.

2018-2019 College Scholarship Recipients

Richard Nwakamma is a graduate of Arabia Mountain, Ga., Richard worked at Clark Atlanta University, Ga., under the direction of Ishrat Khan on research titled “Self-assembly of Hairy Nanoparticles: Bottom-up Preparation of Hierarchical Suprastructures.” Richard will be attending Oxford College, Ga., majoring in Biochemistry.

Mirka Ortiz graduated from Union City High School, N.J. Under the guidance of Robert Aslanian at New Jersey City University, Mirka worked on research titled “Synthesis and Evaluation of a Mutual Prodrug.” Mirka Ortiz is majoring in Chemical Engineering at New Jersey City University.

Armen Phelps is a graduate of Encinal High School, Calif. Armen worked under the direction of Akiko Carver at the University of California, Berkeley on research titled “Genetic Regulation of Metabolism in Post-Fire Fungi.” At the University of California, Berkeley, Armen will major in Chemical Engineering.

Victor Plascencia graduated from Comstock High School, Mich. During the summer, Victor worked under the guidance of Dwight Williams at Kalamazoo College, Mich., on a research project titled “The Synthesis and Purification of 5-Hydroxy 2-(2-phenylethyl) Chromones.” Victor will attend Kalamazoo College, Mich., majoring in Chemical Engineering.



Anna and John Rezk are graduates of High Tech High School, N.J. Both Anna and John worked during the summer at Steven’s Institute of Technology, N.J. Under the direction of Woo Lee, Anna worked on research titled “Comparing Adhesion of Multiple Myeloma Cell Line to Different Cell Tissues.” And, under the direction of Simon Podkolzin, John worked on research titled “Conversion of Acetic Acid to Gaseous Products Over Bimetallic Catalysts.” Anna is majoring in Biochemistry at Brown University, R.I. and John is majoring in Chemical Engineering at Princeton University, N.J.

Brandon Ugbesia graduated from Brockton High School, Mass. Under the direction of Louis Liotta at Stonehill University, Mass., Brandon’s research was “The Synthesis of Iminosugars.” Brandon attends the University of Massachusetts, Amherst majoring in Chemical Engineering.

Muhammad Umar graduated from High Tech High School, N.J. At Stevens Institute of Technology, N.J., he worked under the guidance of Woo Lee on a research project titled “The Effect of Various Neurotransmitters on the Behavior of *Mus musculus*.” Muhammad is majoring in Chemistry/Biochemistry at Princeton University, N.J.

Emily Wade was a graduate of Ridgevue High School, Idaho. At Boise State University under the direction of Don Warner, she worked on a research project titled “Cancer Cell-Killing Properties and Mechanism of Aziridinomitosene Analogs.” Emily is majoring in Chemistry/Biochemistry at Northwest Nazarene University, Idaho.

ASHLAND SCHOLARS

Sommer Gomez Gonzalez graduated from Union City High School, N.J. Under the guidance of Luca Cartegni at Ernest Mario School of Pharmacy, Rutgers University, N.J., she worked on research titled “Identification of Natural Isoforms of the AXL Gene by RT-PCR.” Sommer attends New Jersey City University majoring in Chemistry/Biochemistry.

Deka Ismail graduated from Will C. Crawford High School, Calif. At The Scripps Research Institute, Calif., Deka worked under the direction of Rachel Botham, on a research project titled “Development of a High-Content Imaging Assay for the Discovery of Novel Autophagy Activators.” Deka is majoring in Chemistry at the University of San Diego, Calif.

2018-2019 College Scholarship Recipients

BAYER SCHOLARS

AYER SCHOLARS

Geordelle Maxwell is a graduate of Trenton Central High School, N.J. At Rider University, N.J., she worked under the guidance of Daniel Druckenbrod on research titled “What Causes Gum Spots on Black Cherry Trees at Fernow, WV?” Geordelle attends Mercer County Community College, N.J. majoring in Chemistry/ Biology.

Erika Bello Ramirez graduated from Pike High School, Ind. Under the direction of Hiroki Yokota at Indiana University-Purdue University Indianapolis, she worked on research titled “Development of a Microfluidic Device for Breast Cancer Diagnosis. Erika is majoring in Chemistry.”

Vicky Pai is a graduate of Southport High School, Ind. Vicky worked at Indiana University-Purdue University Indianapolis under the guidance of John Vincent Goodpaster. Vicky’s research was “Automated Derivatization and Identification of Controlled Substances Using Solid Phase Microextraction (SPME).” Vicky attends Indiana University, Bloomington majoring in Biochemistry.

FOSBINDER SCHOLARS

Aya Adel Fattah graduated from East Lansing High School, Mich. Under the direction of Greg Swain at Michigan State University, he worked on research titled “Nanostructured Diamond Powders for Electrochemistry.” Aya is majoring in Chemical Engineering at the University of Michigan.

Doyun Kim graduated from Emmanuel Christian School, Ohio. Doyun worked at The University of Toledo, Ohio, under the direction of Ajith Karunarathne on research titled “Examination Retinal Isomerization and Photodegradation.” Doyun attends the University of Michigan majoring in Biochemistry.

ULLYOT SCHOLAR

Hasan Hamada graduated from Bolton High School, Tenn. Under the direction of Yahia Hamada at LeMoyne-Owen College, Tenn., he worked on research titled “UV-Vis, IR, and Potentiometry of Zn²⁺ with Glycine.” Hasan Hamada is majoring in Chemistry at Rhodes College, Tenn.



Congratulations!

2018-2019 Project SEED College Scholarship Recipients

2018-2019 College Student Testimonials



Armen Phelps

University of California, Berkeley

“Project SEED gave me a valuable experience that confirmed both my passion for chemical engineering and my interest in working in a lab. I was fascinated with everything from RNases to phenol:chloroform. Project SEED showed me what a career as a biochemical researcher looks like. While I chose chemical engineering over biochemistry, I walked away from Project SEED having a much clearer idea about my future career.”



Kristen Gilmore

University of the Sciences, Pa.

“My patience was tested in ways never before, but this internship sparked my interest in becoming an industrial chemist and allowed me to get experience working in a lab. Anytime I spent in the lab felt too short. Working at Solvay made me realize that I could help people through science. Project SEED made me a more confident student and chemist.”



Long Nguyen

Cosumnes River College, Calif.

“After my first year in Project SEED, I was able to work harder in school with a goal to achieve my major’s career. Taking 7 advanced courses in school. Learning from the presentation to mentors, doctors, and guests, I was able to be stronger in public speaking. This trait allowed me to lead big group projects, host meetings for hundreds of students in school, mature mentally, and improve my time management. I cannot wait to return to the 2nd year of Project SEED.”



Meilu Huang

Pepperdine University, Calif.

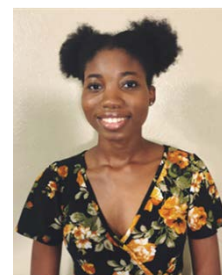
“I found huge differences between going to school and working in a real laboratory. I just learned the pH will affect the bacteria in school, but I was able to see how this happened when I was working in the lab. After I finished my internship, I had a sense how now real lab environment was and how the scientists worked. I clearly know that I like the science phenomenon, I was able to know more about the world every day through science study.”



Anna Rezk

Brown University, R.I.

“Before Project SEED, I never considered a career as a researcher, but now, as I make my college choices, I know that research has become a part of my future. My second summer as a SEED researcher only cemented my passion for research. It solidified research as an art that allowed me to explore undeterred and understand the world around me with my own hands.”



Ifeoluwa Kehinde

University of Texas at A&M

“Project SEED had exposed me to firsthand college lab experience, it has also taught me the importance of trying, failing, and developing grit as a scientist and as an individual. Being a part of Project SEED has helped me develop a sense of responsibility and accountability especially as a student.”

Students Speaking from the Lab



Victoria E. Chaparro, Mass. Summer I

“My experience this summer working in Professor Beaning’s lab was inspirational to say the least. I learned techniques after techniques and nothing felt better than challenging myself at something I enjoyed. This summer my desire to go to college and major in science only grew and now I cannot wait to begin. In the lab, I completely forgot I was only a high school student because everyone was so welcoming and I was working on real projects. I would’ve never thought I would learn so much in only 8 weeks, and I’m so glad I was able to become a part of such a great team.”

Beom Hee Han, Va. Summer I

“This project is probably one of the greatest experiences of my life. College may possibly be similar to this research, but to be able to deal with these types of researches within an actual lab, for the first time, at this age, was amazing.”

Maggie Paul, Ohio Summer I

“I am beyond blessed to have received the opportunity to participate in Project SEED. I learned so much in such a short time and I feel more prepared than ever for my continuing education.”

Rafael E. Luna Santos, P.R. Summer I

“Thank you for lending me the opportunity to participate in such an amazing program. It has been one of the best experiences of my life. I would even like to participate in a SEED II summer program, if possible.”

Mason Lampron, N.Y. Summer I

“Project SEED was an amazing experience that greatly expanded my knowledge and love for science. It was an amazing decision to take part in this internship. The work I did and the memories I made will forever stick with me.”

Alexis Roberson, Ga. Summer II

“The Project SEED I experience last year changed my perspective about chemistry but the Project SEED II experience this summer changed my life. I never thought I was good enough to go to college. My goal was to finish high-school but now I plan to go to college. I want to get a PhD like my mentor, Dr. Catrena Lisse, and hopefully be a support system for someone else like she has for me. Thank you ACS and Georgia College especially Dr. Lisse for this amazing opportunity!”

Rania H. Ousman, Ind. Summer II

“This opportunity has provided me with a list of advantages and a network that has become an asset for my future breakthroughs as a student. Additionally, I enjoyed the chance to meet students from different backgrounds as myself and being able to share common interests where it can sometimes be hard to meet students with interests as yours. I also enjoyed being able to work with the grad students and listening to their theories on simple life lessons.”

Emily Roman, Calif. Summer II

“I would like to thank the American Chemical Society for giving me two summers that I will forever remember.”

Project SEED Students at Sci-Mix

Project SEED students from the Central New York, Georgia, Indiana, Maine, Maryland, New York, North Jersey, Philadelphia, Rhode Island and Trenton local sections presented posters of their research at the Sci-Mix poster session at the 256th ACS Fall National Meeting in Boston, MA.



Central New York Local Section: Coordinator: Miriam Gillett-Kunnath

Zau Tawing N-Hkum

Ahlam Zokari

Structural Studies of Novel Group I and Bismuth Heterobimetallic Fluoroalkoxides

Synthesis and Characterization of Novel Alkaline Earth/Rare-Earth Metal and Bismuth Heterobimetallic Compounds

Georgia Local Section:

Alexis Grady/Anthony Walker

Da'Miah Johnson

Jennifer Kim/Joel Suazo

Coordinators: Ishrat Khan, Ajay Mallia

Effect of PEO Properties through Van der Waals Interactions with Molybdenum Disulfide?

High Performance Poly(vinyl pyrrolidone)/Molybdenum Disulfide

Nanocomposite Films: Augmentational Properties

Design and Studies of Deep Eutectic Solvents (DESs)

Indiana Local Section:

Giancarlo Irizarry

Grace King

Sherlyn Lopez-Contreras

Mohamed Naji

Alondra Salazar

Feven Welde

Coordinator: Elmer Sanders

Critical Role of Osteocytic Pannexin1 on Bone

Retinal Gene Variation in Different Species of Blow Flies

Behavioral Effects of Ethanol on Zebrafish embryos

Electrochemical Paper and Tape Devices for Biological and Chemical Analyses

In search of a cure to fatty liver disease

The Purification of Heterologously Expressed NapA from *Campylobacter jejuni*

Maine Local Section:

Marina Mohawass

Coordinator: Mitchell Bruce

Studies of Co, Cr, Cu, Fe, Mn, VO Complexes of the Acetylacetonate Ion

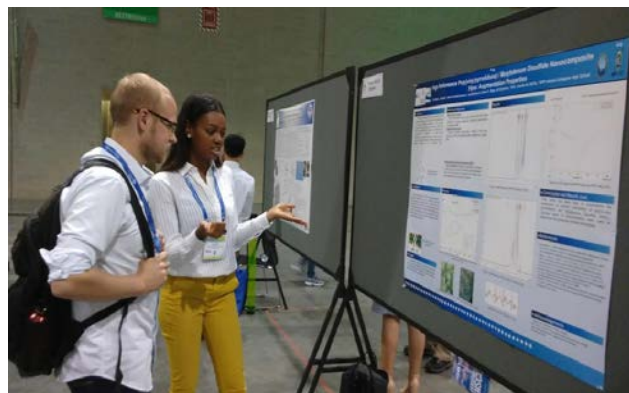
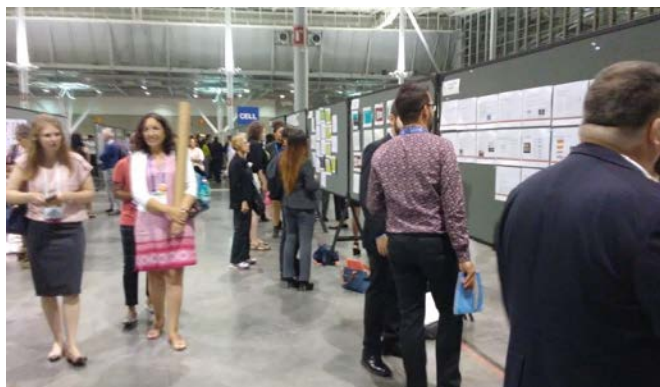
Maryland Local Section:

Emily Cable

Coordinator: Victoria Volkis

Isolation and Hydrolysis of Chitin from Local Waste of Seafood Industry

Project SEED Students at Sci-Mix



New York Local Section:

Raquenel Abreu

Johana Aguilar

Joan Almendarez

Ashley Armengolt

Daniella Blanco

Verenice Bonilla

Stephanie Caballero-Vega

Chelsea Castillo

Jeff Chen

Denia Diaz

Emanuel Diaz

Leilani Garcia

Sommer Gomez Gonzalez

Victoria Gonzales

Alina Guerrero

Elizabeth Guerrero

Vanessa Hernandez

Frederick Martin

Taisha Martinez

Ann Marie Mejia

Yaa Obeng

Jenifer Perez Reyes

Allyson Perero

Monica Salgado

Angie Tamayo

Emely Urbina

Coordinators: Mina Armani, Robert Aslanian, Judith Barrios, Marion McClary, Nadia Makar, Jianwen Que, Amanda Smith

Study of the Chemical Properties of Green Fluorescence of the Clinging Jellyfish

Biogeochemical cycling of nutrients and heavy metals: Evaluation of the Sediments in the Urban Estuary of the Northern NJ for the Removal of Hexavalent Chromium

Sustained Antimicrobial Properties of Diluted Essential Oils

Comparing Zinc Air Battery and Lithium-ion Battery in Fuel Cells

Rapid Procedure for the Preparation of Cyclic Anhydrides: Application to the Synthesis of Vorinostat and Analogs

Aluminum Contamination of Water

Ocean Acidification Effects on the Adhesive Properties of Starfish

Testing Acrylic Acid Polymerization on a Biomaterial Surface

Biosensors used in Research: Migration of Bacteria in Soil-less

Aggregates for Optimized VOC Uptake

Invasive Clinging Jelly Fish in Marine Ecosystems: Examination of Predation and Food Behavior on Non-Native *Gonionemus vertens*

Electrical Impedance Spectroscopy of Carbon Nanotube Micro-electrodes

A Lab-On-A-Chip DNA Biosensor Approach

Exploring alkali promotion for CO₂ Activation and Catalyst Coke Suppression

Testing New Designed Analogs: Unknown Bacteria Anti-biofilm from Ecuador

The Effects of Drugs on Cholesterol Patients

Antifungal Effects of Essential Oils

Testing Newly Designed Hydroxamic Analogs for Antibacterial Activity:

Unknown Bacteria Antibiofilm from Ecuador

Regulation of CaMK2 at Inhibitory Synapses: Analyzing Toxicity in Antibiotics

Dilution of Essential Oils As Aerosols

Antimicrobial Activities of Soaps and Detergents

Essential Oils as Pesticides

CC10 Expression in Blcomycin-Induced Lung Injury

Chemical Contaminants in Grey Water

Structure of Liposome containing Polypeptides

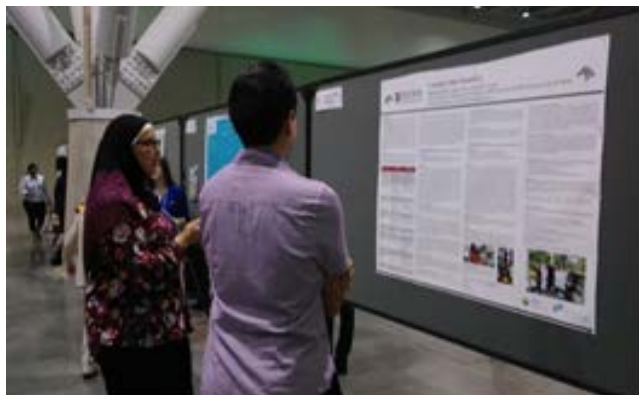
Natural Oils Used as Pesticides

Mobile Phone-based Fluorescence Detection

Storm Water Management: Molecular Dynamics Simulations of

Urea-based Organic Crystals

Project SEED Students at Sci-Mix



North Jersey Local Section:

Claire Fabito

Kimberly Glenn

Stacia Gray

Ernesto De Jesus Martinez

Abieyuwa Osayande

Frank Pephrah

Hiroshi Onyiah Poku

Christy Zheng

Ci'Anee Campbell

Philadelphia Local Section:

Kristen Gilmore

Rhode Island Local Section:

Robin Fidel

Sandy Lastor

Omar Martinez

Aditi Patel

Trenton Local Section:

Mayada Farraj

Tyanna Spalding

Geraldine Velez

Coordinator: Bobbi Gorman

Testing of Survival and Cross-contamination of Bacteria and Viruses of MS2 and *Enterobacter aerogenes* on Stainless Steel

Synthesis of Borinic Acid Polymers and Their Use as a Catalyst In Peptide Bond Formation

Transformation of An Antinutrient Compound To a Novel Electrochemical Catalyst for CO₂ Reduction

Testing of Survival and Cross-contamination of Bacteria and Viruses of MS2 and *Enterobacter aerogenes* on Stainless Steel

δO^{18} and $^{87}Sr/^{86}Sr$ Correlates of Lake Level and Source Waters in the Turkana Basin, Kenya

Fabrication of Phosphorene Holey Graphene Hybrid for Photocatalytic Water Splitting

Prehistoric Diet on Mangaia, Cook Islands and Stable Isotopic Evidence

Thermodynamic Properties of Fluorinated Carboxylic Acids Through Isodesmic Reactions

Comparison of Indirect Immunofluorescence and HE Staining

Coordinator: Tiffany Chen

Benchmark Study of Surfactants

Coordinator: Brenda Rubenstein

Towards Sustainable Energy Carriers - Lewis Acid Promoted Oxygen Reduction Catalysis in Water

Computational Investigations of Iron Halide Complexes

Classifying Ugi Molecules Using K-Means Clustering

Synthesis of Coumarin Functionalized Cyclodextrin MOFs and their Application

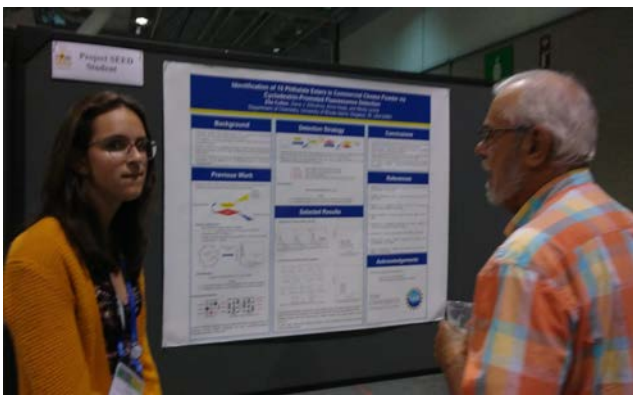
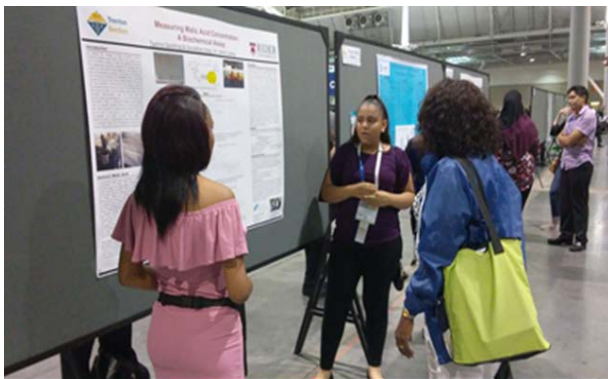
Coordinator: Jamie Ludwig

Chemistry in the Kitchen

Quantifying the Concentration of Malic Acid in Foods

Measuring Malic Acid Concentration: A Biochemical Assay

Project SEED Students at Sci-Mix

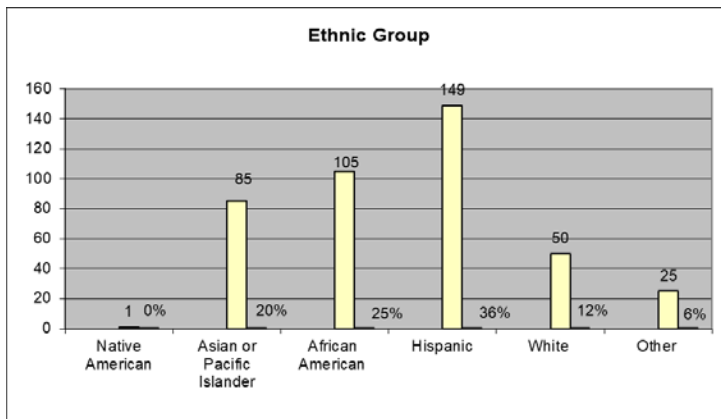


2018 Student Survey Results

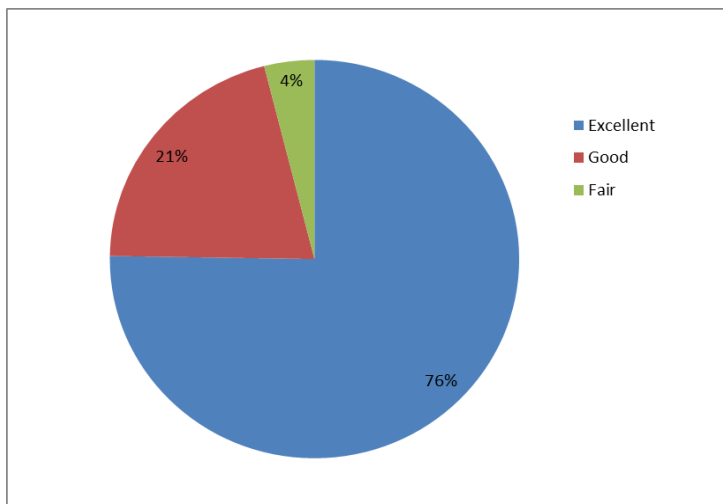
The survey is designed to assess the success of the program. The results of the survey provide information on the background of the students, their educational aspirations, and their assessment about Project SEED. This information is useful in determining whether ACS Project SEED is serving its target population and if it is achieving its goals. Of the 430 students in the program, 417 students responded.

Student Gender	Summer I	Summer II	Total %
Female	225	57	68%
Male	109	26	32%
TOTAL	334	83	100%

Family Income Level	Summer I	Summer II	Total %
\$6,999 or Less	45	8	13%
\$7,000 to \$16,000	58	25	20%
\$17,000 to \$25,000	67	14	19%
\$26,000 to \$35,000	89	14	25%
\$36,000 or more	75	22	23%
TOTAL	334	83	100%



How Would You Rate Your SEED Experience?



Demographics by State	Summer I	Summer II
Alabama	1	1
Arkansas	2	0
Alaska	0	0
California	57	9
Colorado	3	1
Connecticut	1	0
District of Columbia	9	2
Florida	2	0
Georgia	9	1
Idaho	9	1
Illinois	5	0
Indiana	29	6
Iowa	2	0
Kansas	1	1
Maine	2	0
Maryland	3	1
Massachusetts	2	2
Michigan	9	6
Minnesota	7	0
Mississippi	3	0
Missouri	7	0
Montana	1	0
Nebraska	2	0
Nevada	2	0
New Jersey	53	24
New Mexico	2	0
New York	23	1
North Carolina	11	3
Ohio	25	8
Oregon	4	0
Pennsylvania	4	1
Puerto Rico	8	2
Rhode Island	7	0
South Carolina	1	5
Tennessee	2	2
Texas	23	7
Utah	1	0
Virginia	5	0
Vermont	3	0
Washington	0	7
West Virginia	3	0
Wisconsin	2	0
TOTAL	345	85

2018 Student Survey Results

What is the highest level of education you expect to complete?	Summer I	Summer II	Total %
High School	5	0	1.2%
Vocational, Trade, Business	1	0	.2%
Some College	2	0	.5%
2-year College Graduate	2	0	.5%
4-year College Graduate	109	21	31.2%
Graduate/Professional School	215	62	66.4%

Student Research Sites	Summer I	Summer II	Total %
Academic Laboratory	261	64	78%
Government Laboratory	17	3	5%
Industrial Laboratory	27	7	8%
Medical Laboratory	29	9	9%

Students Agreed that Project SEED Helped:	Summer I	Summer II	Total %
Develop Skills and abilities	319	83	96%
Develop self-confidence	256	68	78%
Develop responsibility	313	80	94%
Understand the ethical behavior of scientists	306	82	93%
Develop better study habits	213	54	64%
Learn what advance study is like	309	75	92%
Decide to continue my education after high school	284	78	87%
Choose a college major	250	54	73%
Decide to pursue a career in science	212	71	51%
Develop greater interest in scientific/technical areas	289	72	87%

College Majors	Summer I First Choice	Summer II First Choice
Agriculture	0	0
Architecture	5	2
Astronomy	0	0
Biology & Life Sciences	49	7
Business & Commerce	4	1
Chemistry	75	29
Communications	2	1
Computer Sciences	12	2
Earth Sciences	0	0
Education	1	0
Engineering	40	10
Foreign Languages	2	0
Health Professions	47	11
Home Economics	0	0
Language & Literature	3	2
Library Science	0	0
Mathematics	8	3
Military Sciences	1	0
Pharmacy Sciences	9	0
Philosophy	0	0
Physics	4	2
Social Sciences	8	0
Other	58	13
N/A	6	0

What are the chances that you will become a scientist, engineer, or mathematician in the future?	Summer I	Summer II	Total
Excellent	161	42	49%
Good	117	29	35%
Fair	50	10	15%
Poor	6	2	2%0

2018 Student Survey Results

In the following statements, students were asked to evaluate their experience with their mentor.	Strongly Agree or Agree	Disagree or Strongly Disagree
I learned new skills from my SEED mentor	76%	7%
It is easy to talk to my SEED mentor	89%	10%
My SEED mentor assisted me with improving my overall performance and SEED research work	94%	2%
My SEED mentor discussed career paths (including education) in chemistry and related sciences with me	82%	18%

Student/Mentor Relationship	Total%
Very Good	73%
Good	20%
Fair	6%
Poor	1%
Total	100%



Courtesy of University of Puerto Rico, Rio Piedras



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Highlights of the 50th Anniversary Celebration of Project SEED



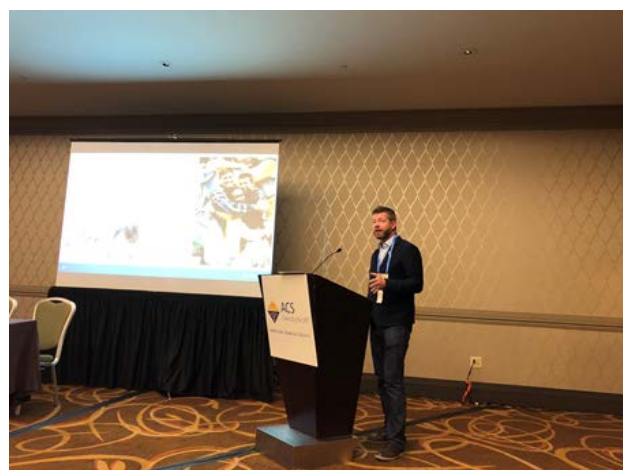
50th Anniversary Symposium: Growing with Project SEED: 50 years and 10,000+



L to R: Madeleine Jacobs, Rocio Aviles-Mercado, Teri Quinn-Gray, Arold Norelus, Kevin Hunt, Richa Sharma, Don Warner, Sir Frasier Stoddart, David Chavez, Cecilia Hernandez



Teri-Quinn Gray – Project SEED 1981



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Highlights of the 50th Anniversary Celebration of Project SEED



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Reception: A Conversation with Sir Fraser Stoddart – Champion, 50 Forward Campaign



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Student Mixer event



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