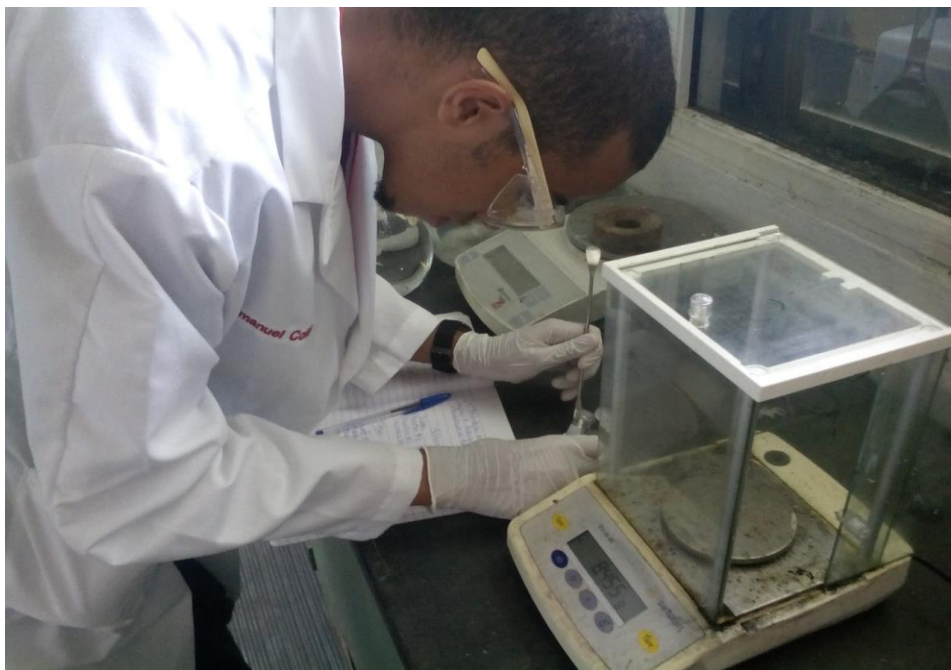


# 2017 Project SEED Program Summary



*Hands-On Research for  
High School Students*





*Photo Courtesy of University of Puerto Rico, Rio Piedras*

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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."

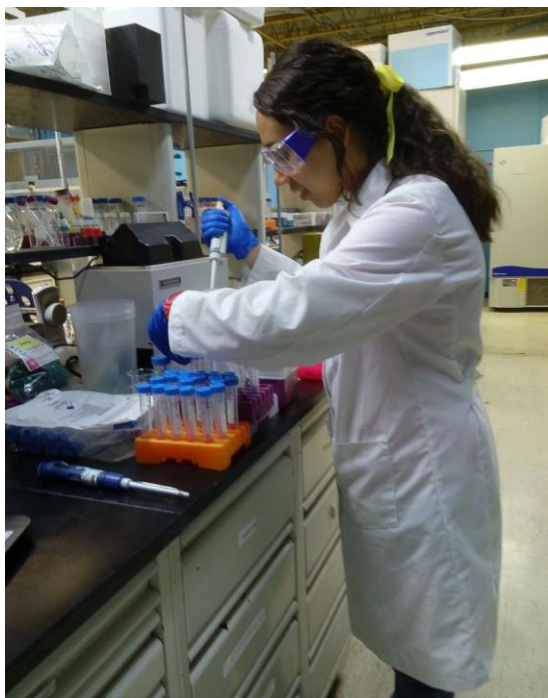
# Project SEED

## Executive Summary

Project SEED, a program of the American Chemical Society (ACS), provides economically disadvantaged high school students an opportunity to participate in research and learn what it is like to work in science-related fields through a hands-on experience. Since 1968, the program has placed nearly 10,600 students in academic, industrial, and governmental laboratories for 8 to 10 weeks during the summer. This past summer, more than 400 volunteer scientists and coordinators worked with one or two students at more than 130 institutions in 36 states, the District of Columbia, and Puerto Rico. Project SEED offers a fellowship to support one or two summers. This summer, a total of 411 students participated in the program, 304 students of whom were summer I students and 107 of whom were Summer II students.

At the end of the program, students were asked to respond to a questionnaire designed to assess the success of the program. Of the 411 students in the program, 407 responded. The results of the survey (See pages 30-32) provide information on the background of the students, their educational aspirations, and their assessment of Project SEED. The results of the survey indicate that Project SEED is serving its target population: most of the respondents come from low-income families with incomes of \$35,000 or less; 67% of the respondents indicate that Project SEED experience helped them to decide to pursue a career in science, and 88% indicate that they will continue their education after high school because of Project SEED; 97% indicate that Project SEED helped them to develop new skills and abilities; 83% note that Project SEED was successful in improving their self-confidence; and 85% indicate they will become a scientist, engineer, or mathematician. Most of the respondents rated Project SEED "Excellent".

At the ACS fall national meeting in Washington, D.C., 36 Project SEED students presented their summer research at the Sci-Mix poster session. The students represented the Chemical Society of Washington, Georgia, Maryland, New York, North Jersey, Trenton, and Washington-Idaho Border local sections. (See pages 27-29)



*Photo of Courtesy, University of Puerto Rico, Rio Piedras*

The ACS Project SEED Endowment, industries, foundations, academic institutions, ACS Local Sections, and ACS friends and members supported total student fellowships of \$1,081,000. (See pages 33-35.) ACS provided student fellowships and paid all administrative costs.

In 2017, Project SEED awarded 27 college scholarships to Project SEED alumni entering their freshman year in college during the academic year 2017-2018 and who are pursuing careers in a chemical science. (See pages 19-22.) The scholarships of up to \$5,000 were funded through the continuing generosity of Alfred and Isabel Bader, Ashland Inc., Bayer Foundation, and Russel J. Fosbinder. In addition, three Project SEED college scholars received the Ciba Specialty Chemicals scholarships for three renewable years beginning in their sophomore year.

In 2018, the ACS Project SEED program will celebrate its 50<sup>th</sup> anniversary! We would like to express our sincere thanks and appreciation to Alfred and Isabel Bader (Bader Philanthropies), Susan Fahrenholtz, and Cynthia and Bruce Maryanoff for their generous gifts as first contributors to launch the 2018 Project SEED milestone fundraising appeal.

The success of the program is contributed to its many generous financial supporters, volunteer coordinators and mentors. Please join us to recognize its success.





# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Giovanni Meloni	University of San Francisco
Jianhua Ren Jerry Tsai	University of the Pacific
Qinliang Zhao David Sparkman	
Chris Wallis Gary Banuelos Rachel Naegele Jianchi Chen Spencer Walse	USDA-ARS Water Management Research Lab.
William Hart-Cooper Niu Dong, Colleen McMahan Andrew Breksa, Ana Vilches Sarah Throne	USDA-ARS Western Regional Research Center
Qiao-Hong Chen	California State University, Fresno
Hussein Alboudwarej Art Inouye	Chevron Energy Technology Company
Mitra Hosseini Ken Nelson	Chevron Oronite Company, LLC
Kenneth Forbes	Nexeo Solutions, LLC
Weiming Wu	San Francisco State University
Brad Hanson, Caio Brunharo Joanna Chiu	University of California, Davis
Andy Li Wang Christine Isborn	University of California, Merced
Jinhua Ren Andy Franz	University of the Pacific
Jennifer Bragg Ron Haff, Peishi Liang Yong Gu	USDA-ARS Western Regional Research Center
Sam Lieboff	USDA-ARS Western Regional Research Center/ University of California, Berkeley

## Students

Jiankang Cao

Felix Molina Charco  
Donavin Collins  
Leslie Coronado  
Denise Ramirez  
Karen Sataray

Brian Emigdio  
Raymond Garcia  
Alexander Garcia  
Lorena Orozco  
Jessica Villegas-Martinez

Katherine Jiang Li  
Chui Yi Ho  
Amy Nguyen  
Jerry Okina  
Miguel Piedra Montano

### Summer II

Alison Phasakda

Zehui Li

Ansoni Carmona Gonzalez  
Joakin Ejje

Ruth Cervantes

Qiyang Huang

Sohail Haqiqat  
Jose del Carmen Li

Mai Chong Thao  
Chou Xiong

Luis Moreno  
Belen Sandoval

Emony Hill  
Jonathan Orellana  
Andrew Orellana

Kelly Flores

## **California State University, Los Angeles, Frank Gomez**

Frank Gomez

Michael Hayes  
Robert Vellanoweth

### Summer I

Jesus Arroyo  
Jacqueline Ramirez  
Paola Ramirez  
Adrixx Reyes Rivera

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

### California State University, San Bernardino, Dennis Pederson

Jingsong Zhang University of California, Riverside

### San Diego Local Section, ACS, Valerie Kuck

Francisco Paesani University of California San Diego  
Seth Cohen

Jessica Bell University of San Diego

Joan Schellinger

### Stanford University, Kaye Storm

Gerald Fuller  
Andrew Spakowitz  
Junzhe Lou  
Kyle Gustafson

Chris Lindsey

### The Scripps Research Institute, Ashley Hull

Floyd Romesberg  
Keary Engle  
Jeffery Kelly

### University of California, Davis, Shota Atsumi

Louise Berben  
Susan Kauzlarich  
Shota Atsumi

Sheila David

## Students

### Summer I

Jose Benitez-Ponce

### Summer I

Mohamed Ali  
Thien Thai

Konthong Khisirivong

Van Phan

Marco Tamez

### Summer I

Lesley Avila  
Bonnie Chu  
Maria Gutierrez  
Thanh Luong

### Summer II

Blanca Jaime

### Summer I

Reta Behnam  
Forrest Graham  
Deka Ismail

### Summer I

Faatimah Iqbal  
Jacinto Lepe-Banales  
Long Nguyen

### Summer II

Beili Huang

## COLORADO

### Colorado State University – Pueblo, David Dillon

Sandra Bonetti  
Melvin Druelinger  
Matthew Cranswich

### Summer I

Eva Darling  
Jade Garcia  
Zek Kelly  
Marcus Ortega Keshmiri

## CONNECTICUT

### University of Connecticut, Alfredo Angeles-Boza

Jie (Jay) He  
Jessica Rouge

### Summer I

Medina Kheyabani  
Malina Kheyabani  
Zaret Rodriguez

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

## Students

### DISTRICT OF COLUMBIA

#### **Chemical Society of Washington, Allison Aldridge**

Timothy Warren Georgetown University  
Kaveh Jorabchi

Joseph Fortunak Howard University

Andrew Davis Library of Congress, Preservation Research  
and Testing Division

James Fedchak Thermodynamic Metrology Group, NIST

Zhihong Nie University of Maryland, College Park  
Andrei Vedernikov

YuYe Tong Georgetown University

Amol Kulkarni Howard University

Mary-Christine Onuta University of Maryland, Baltimore

#### **Summer I**

Giselle Flores  
Christopher Okorie

Osogieahon Ewanehi

Yoonjae Jee

Sheku Deen-Tarawali

Kevin Fuentes  
Maria Rojas

#### **Summer II**

Johaness Osorio

Tennen Dukuly

Absatas Njie

### FLORIDA

#### **Barry University, George Fisher**

John Berry Florida International University Biscayne Bay  
Rajeev Prabhakar University of Miami

#### **Summer I**

Andy Armand  
Rene Galan  
Yoldinie Nicoleau

### GEORGIA

#### **Clark Atlanta University, Ishrat Khan**

Ishrat Khan  
James Reed  
Michael Williams

#### **Summer I**

Briyhan Martin  
Jeremiah Minor  
Richard Nwakamma

#### **Georgia College and State University, Catrena Higginbotham**

Catrena Lisse Georgia College & State University

#### **Summer I**

George Banks  
Alexis Roberson

#### **Georgia Gwinnett College, Ajay Mallia**

David Pursell

Ajay Mallia

Neville Forlemu

#### **Summer I**

Patrick Aghadiuno  
Nohemi Martinez  
Farisha Saitan  
Jonathan Uriostegui  
Emily Xu

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

## Students

### IDAHO

#### Idaho State University, Andrew Holland

Rene Rodriguez

Andrew Holland

Joshua Pak

Caryn Evilia

#### Snake River Local Section, ACS, Don Warner

Jeunghoon Lee

Boise State University

Don Warner

#### Summer I

Luis Cruz

Andrew Perry

Edith Gonzalez

Ethan Miller

Erin Moore

Sean Morrissey

#### Summer II

Andrea Nguyen

Emily Wade

### ILLINOIS

#### Chicago Local Section, ACS, Raelynn Miller

James Devery

Loyola University of Chicago

James Devery

Wei-Tsung Lee

Hee Yeon Cho

Dali Liu

#### Summer I

Selena Cruz

#### Summer II

Janiel Cortes

Rocco Molinelli

Mir Rehman

Brielle Ross

#### Milikin University, Anne Rammelsberg

Kyle Knust

Anne Rammelsberg

Anne Rammelsberg

#### Summer I

Caleb Grover

Rodney Spicer

Robert Spicer

#### Summer II

Connor Dickey

### INDIANA

#### Indiana Local Section, ACS, Elmer Sanders

Pascal Lafontant

DePauw University

Jeffrey Hansen

Yu Lu

Eli Lilly and Company

James Williams

Uma Sankar

Indiana University School of Medicine

Christoph Naumann

Indiana University-Purdue University Indianapolis

Hiroki Yokota

IUPUI School of Engineering and Technology

Ann Kimble-Hill

Charlie Dong

Lilian Plotkin

IUPUI School of Medicine

#### Summer I

Rania Ousman

Neel Sangani

Mathews Zemen

Kailee Jackson

Sarah Nawar

Elissa Tam

Erika Bello Ramirez

Feven Araya

Nahum Gerezgher

Manuel Senrra



# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Horia Petrache  
Lixin Wang

IUPUI School of Science

Michael McLeish  
James Marrs  
John Goodpaster  
Bill Gilhooly  
Stephen Wassall  
Bruce Ray

Stanley Kolis  
Zhenqi (Pete) Shi

Eli Lilly and Company

Mangilal Agarwal

IUPUI School of Engineering and Technology

Ann Kimble-Hill  
Lilian Plotkin

IUPUI School of Medicine

### **Purdue Local Section, ACS, Bryan Boudouris**

Bryan Boudouris  
Corey Thompson

Purdue University

### **University of Notre Dame, Mary Prorok**

Amanda Hummon

M. Sharon Stack

## IOWA

### **Iowa State University, Javier Vela**

Emily Smith  
Jared Anderson

Vincenzo Venditti

## KANSAS

### **Wichita State University, Syed Taher**

Syed Taher

## MARYLAND

### **John Hopkins University, Takashi Tsukamoto**

Takashi Tsukamoto

## Students

Joshua Atilola  
Maria Bashmakov  
Danielle Metangmo  
Julie Dinh  
Sherlyn Lopez-Contreras  
Vickey Pai  
Ashley Ring  
Elizabeth Sung  
Tha Chin Sung

### **Summer II**

Emmanuel Atilola  
Justice Vaughn

Clara Reasoner

Yonas Araya  
Alejandro Marcial

### **Summer I**

Yuto Nishida  
Ian Trinh

### **Summer I**

Olivia Busk

### **Summer II**

Lace Hunt

### **Summer I**

Jayda Anaya-Negrete  
Isabel Camacho Arias

### **Summer II**

Moises Garcia

### **Summer I**

Mohanned Ullah

### **Summer II**

Ashley Romero

### **Summer I**

Shan Shueh

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

**Morgan State University, Louise Hellwig**  
Santosh Mandal

**University of Maryland Eastern Shore, Victoria Volkis**  
Simon Zebelo  
Victoria Volkis

### MASSACHUSETTS

**Stonehill College, Cheryl Schnitzer**  
Marilena Hall  
Louis Liotta

### MICHIGAN

**Delta College, Bernadette Harkness**  
Anja Mueller  
Central Michigan University

Jennifer Chaytor  
Tami Sivy  
Saginaw Valley State University

**Henry Ford Community College, Keith Williams**  
Matthew Allen  
Wayne State University

Howard Matthew

Wen Li

**Kalamazoo Local Section, ACS, Michael Walsh**  
Dwight Williams  
Kalamazoo College

**Michigan State University, Chrysoula Vasileiou**  
J.W. Frost  
James Jackson  
James Geiger  
Greg Swain  
Babak Borhan  
Robert Maleczka

Remi Beaulac  
Benjamin Levine

William Wulff

## Students

**Summer II**  
Ariana Jennings

**Summer I**  
Cylah Bailey  
Julia Cornish

**Summer I**  
Nessie Dubuissou  
Pui-Lam Lo  
Brandon Ugbesia

**Summer I**  
Kaitlyn Schwallier

**Summer II**  
Darla Martinez  
Aubrie Tacey

**Summer I**  
Arionna Nelson

**Summer II**  
Suriya Chowdhury  
Ruma Deb  
Shaida Nishat

**Summer I**  
Victor Plascencia

**Summer I**  
Naghham Al-Masraf  
Vivian Ho  
Ruth Horta  
Aya Mohammed  
Mohamed Salem  
Kamisha Tuma

**Summer II**  
Dhan Bhandari  
Maryam Ezz  
Fardowsa Omar  
Gadir Mohamed

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

## Students

### MINNESOTA

#### **3M Company, Sarah Mullins**

Lee Penn, Alon McCormick    University of Minnesota

Romas Kazlauskas

Wayland Noland

Jerry Cohen

Mark Distefano

Philippe Buhlmann

#### **Summer I**

Maria Balderrama

Camryn Franke

Anaa Jibicho

Bao Nhia Thao

Xee Thao

Pa Thao

#### **Summer II**

Ka Lia Xiong

### MISSOURI

#### **Kansas City Local Section, ACS, Michelle Paquette**

Shin Moteki                                    University of Missouri-Kansas City

Michelle Paquette

#### **Saint Louis University, Ryan McCulla**

Ryan McCulla

#### **Summer I**

Milkise Yassin

#### **Summer II**

Derrick Bailey

#### **Summer I**

Shaquina Johnson

Louis Stith

### MISSISSIPPI

#### **The University of Southern Mississippi, Douglas Masterson**

Julie Pigza

Philip Bates

Karl Wallace

Douglas Masterson

#### **Summer I**

Tamica Davis

Kimberton Mai

Sara Pacheco

Rachelle Speights

### MONTANA

#### **University of Montana, Earle Adams**

Kendal River

#### **Summer II**

John Bowers

### NEBRASKA

#### **Creighton University, Sade Kosoko-Lasaki**

Yaping Tu

Devendra Agrawal

#### **Summer I**

Malcom Gladney

Elsa Ramirez

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

## Students

### NEVADA

#### University of Nevada, Reno, Laina Geary

Yiftah Tal-Gan  
Samuel Odoh  
Ian Wallace  
Wesley Chalifoux  
Matthew Tucker

#### Summer I

Joseph Dailey  
Angel Gomez  
Olivia Hall  
Emma Osgood  
Luz Salorio

### NEW JERSEY

#### Academy for Enrichment & Advancement, Union City High School, Amanda Smith

Stavroula Sofou Rutgers University

#### Summer II

Kamila Amador  
Valerie Zapata

#### Academy for Enrichment & Advancement, Union City High School, Mina Armani

Sagnik Basuray New Jersey Institute of Technology

#### Summer I

Yunior Toribia  
Keith Branes

Mina Armani Union City High School

#### Summer II

Mario Banos  
Aswin Aguinaga

#### Academy for Enrichment & Advancement, Union City High School, Judith Barrios

Johana Moreno Academy for Enrichment and Advancement

#### Summer I

Joan Almendarez  
Racquenel Abreu  
Allyson Perero  
Brandon Moran  
Dana Vitiello

Judith Barrios  
Peter Dozd

Vladislav Snitsarev Montclair State University  
Michelle Zhu

Jennifer Aguilar  
Daniella Blanco  
Verenice Bonilla  
Denia Diaz

Paul Bologna

#### Academy for Enrichment & Advancement, Union City High School, Nadia Makar

Marc Cohen Beth Israel Medical Center

#### Summer I

Johanna Aguilar

Daniel Torres City University of New York

Jeff Chen

Elaine Gomez Columbia University

Leilani Garcia

Jyhcheng Liu New Jersey City University  
Ken Nelson

Brian Rosas  
Luisa Romero

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Treana Arenzeh New Jersey Institute of Technology

Karina Schafer Rutgers University, Newark  
Agostino Pietrangelo  
Michele Pavanello

Yosra Badiei Saint Peters University  
Weidong Zhu  
Debing Zeng

Marc Cohen Beth Israel Medical Center

Kevin Olsen Montclair State University

Stefan Strauf Stevens Institute of Technology

### **Fairleigh Dickinson University, Marion McClary**

Marion McClary, Sixto Mahecha

Catherine Daugherty

Marion McClary

### **Fordham University, Susan Fahrenholtz**

Joseph Bozzelli New Jersey Institute of Technology

### **High Tech High School, Nina Lavlinskaia**

Mereiem Bendaoud New Jersey City University

Tianning Diao New York University

Christian Traba Saint Peters University

Woo Lee Stevens Institute of Technology  
Simon Podkolzin

### **New Jersey City University, Robert Aslanian**

Hun Bok Jung  
Deborah Freile

Robert Aslanian

Reed Carroll

## Students

Michael Yanqui

Ranol Handapangoda  
Lyndsey Lara  
Emely Urbina  
Alyssa Vargas

Chelsea Castillo  
Jesus Mexica  
Roberto Saenz

### **Summer II**

Gabriela Ale

Giovanni Cruz

Aldair Medrano

### **Summer I**

Stephanie Caballero-Vega  
Zamira Miranda  
Estelle Akdemir  
Cristopher Hidalgo

### **Summer II**

Ashley Gordillo

### **Summer I**

Christy Zheng

### **Summer I**

Reika Hayashi

Shelina Chotrani

Muhammed Umar

Anna Rezk  
John Rezk

### **Summer I**

Jessie Yeung  
Youstina Youssef

### **Summer II**

John Carvajal  
Mirka Ortiz  
Anna Yactayo



# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

### **New Jersey Institute of Technology, Reginald Tomkins**

Yuanwel Zhang  
Yong Yan  
Bhavani Balasubramanian

Roman Voronov  
Alexei Khalizov  
Gennady Gor

### **North Jersey Local Section, ACS, Bobbi Gorman**

Gerald Buonopane                      Seton Hall University  
Rhonda Quinn

James White                      Rutgers University, New Brunswick

### **Ramapo College of New Jersey, Carol Frishberg**

Catalin Martin  
Thomas Owen

### **Rider University, Jamie Ludwig**

Danielle Jacobs

Jamie Ludwig

### **Rowan University, Gregory Caputo**

Gustavo Moura-Letts

Timothy Vaden  
Lark Perez

### **Rutgers University-Camden, David Salas-de la Cruz**

David Salas-de la Cruz

### **Rutgers, The State University of New Jersey, Deborah Stalling**

Luca Cartegni

### **Science Park High School, Andre Bridgett**

Alexis Rodriguez                      Rutgers University, Newark

### **Seton Hall University, Gerald Buonopane**

Gerald Buonopane  
Daniel Nichols

Daniel Nichols

## Students

### **Summer I**

Camile Cordero  
Emanuel Diaz  
Miyoko Quinonez

### **Summer II**

Rebecca Amador  
Jaime Mendoza  
Marcelo Munoz

### **Summer I**

Naomi Guinyard  
Abieyuwa Osayande  
Hiroshi Onyindah Poku

### **Summer II**

Jonathan Reynolds

### **Summer I**

Ishmam Chowdhury  
Amel Hassan

### **Summer I**

Geordelle Maxwell  
Ameka Yawson  
Gbaweah Sandy

### **Summer I**

Melissa Hernandez-Reyes

### **Summer II**

Omar Cruz Garcia  
Citlalli Jimenez

### **Summer I**

Kayla McKinnon

### **Summer I**

Sommer Gomez Gonzalez

### **Summer I**

Erika Vasquez  
Kevin Zavala

### **Summer I**

Jasser Dominguez  
Rodensley Philippe

### **Summer II**

Jamila Osborne

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

## Students

### NEW MEXICO

#### University of New Mexico, Naomi Lee

Naomi Lee

#### Summer I

Lurita Tenorio

#### Sandia National Laboratories, Bernadette Hernandez-Sanchez

Bernadette Hernandez-Sanchez

Timothy Boyle

#### Summer II

Rayna Bandy

Fernando Guerrero

### NEW YORK

#### Advanced Science Research Center, Adam Braunschweig

Dorthe Eisele

Adam Braunschweig

Rein Ulijn

Amedee des Georges

#### Summer I

Salimata Konate

Moussa Niang

Alejandro Ramirez

Patricia Santos

#### Ellis Preparatory Academy, Jeremy Heyman

Daniel Esposito

Columbia University

Kristin Myers

Qi Wang

Yuan Yang

#### Summer I

Nicol Fernandez

Djenin Kamara

Mamadou Sangnaba

Amirah Zeba

Donna McGregor

Lehman College

Md Rahman

Josue Santamaria

#### Rochester Institute of Technology, Lea Vacca Michel

Gabrielle Gaustad

Rochester Institute of Technology

Callie Babbitt

#### Summer I

Deyaneira Flores-Figueroa

Raja Weathers

Todd Krauss

University of Rochester

Karina Le

Callie Babbitt

Rochester Institute of Technology

#### Summer II

Tru-Nhi Do

### NORTH CAROLINA

#### North Carolina Local Section, ACS, J. Stewart Witzeman

Kathleen Donohue

Duke University

Michael Fitzgerald

#### Summer I

Abel Maasho

Alazar Mebrahtu

Denis Fourches

North Carolina State University

Erik Santiso

Melissa Pasquenelli

Felix Castellano

Nyree Baldwin

Ulises Castillo

Uyen Dao

Cameron Jackson

#### University of North Carolina, Charlotte, Thomas Schmedake

Daniel Rabinovich

Jacob Horger

#### Summer I

George Andrade

Mirna Peralta

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Michael Walter  
Thomas Schmedake  
Kirill Afonin

### OHIO

#### Case Western Reserve University, Carlos Crespo-Hernandez

Emily Pentzer  
Anna Samia  
Carlos Crespo-Hernandez

Blanton Tolbert  
Rohan Akolkar  
Chris Dealwis  
Daniel Scherson  
John Protasiewicz  
Carlos Crespo-Hernandez  
Genevieve Sauve  
Emily Pentzer

#### Akron Local Section, ACS

##### Hiram College, Carol Shreiner

Christopher Ziegler                      The University of Akron  
Michael Konopka  
Kevin Cavicchi  
David Modarelli

Chrys Wesdemiotis

#### University of Cincinnati, Anna Gudmundsdottir

Anna Gudmundsdottir

Edward Merino

James Mack

#### University of Toledo, Ajith Karunaratne

Jianglong Zhu  
Wei Li  
Michael Young  
Ajith Karunaratne

Cora Lind-Kovacs

## Students

### Summer II

Brandon Miller  
Liliana Moranchel  
Beamiak Worku

### Summer I

RhayAuna Dent  
Nickie Lam  
Dawn Luong

### Summer II

Abdel-Raheem Abed  
Jade Britton  
Amanda Kong  
Ali Moukdad  
Youssaf Rouiha  
Daisha Taylor  
Yondez Webb  
Jaylen Williams

### Summer I

Taylor Davis  
David Miller  
Tommy Sayarath  
Esther Staley

### Summer II

Maxwell Rankin

### Summer I

Alexis Mack  
Eva Mazzola  
Olivia Reblando

### Summer II

Carl Williams

### Summer I

Zhane Crockett  
Morgan Dussel  
Kayla Goolsby  
Doyun Kim

### Summer II

Lich Do

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

### Youngstown State University, Sherri Lovelace-Cameron

Tom Oder  
Sherri Lovelace-Cameron

## Students

### Summer I

Burke Lizzie  
Vi-Trinh Luu  
Brea Tinsley

## OREGON

### Eastern Oregon University, Anna Cavinato

Anna Cavinato

### Summer II

Gabriella Rodriguez

### Portland Local Section, ACS, Angela Hoffman

Angela Hoffman                      University of Portland

### Summer I

Elizabeth Lujano-Caballero  
Diana Angeles-Ramos

Theresa McCormick                      Portland State University

### Summer II

Julia Dayton

## PENNSYLVANIA

### Covestro LLC, Irene McGee

Mike Super

### Summer I

Terrance Hollaman

### Duquesne University, Jennifer Aitken

Theodore Corcovilos  
Stephanie Wetzel  
Michael Van Stipdonk

### Summer I

Bryonna Beeson  
Danielle Beres  
Zayauna Liddell

Michael Cascio  
Justin Collinger  
Jennifer Aitken

### Summer II

Israa Abdulmuttaleb  
Gildas Kodjo  
Asia Parker

### Solvay, Julie Tanavade

Julie Tanavade

### Summer I

Kristen Gilmore

## PUERTO RICO

### University of Puerto Rico, Rio Piedras, Ingrid Montes

Arthur Tinoco

Eduardo Nicolau  
Jorge Colon  
Carlos Cabrera

### Summer I

Nahiera Alicea  
Alanis Zayas  
Julio Canino  
Alianys Rosario Colon  
Alejandra Delgado  
Jonniel Morales Ramos  
Isis Guadalupe  
Danitza Vazquez

Marvin Bayro  
Dalice Piñero-Cruz

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Carlos Gonzalez  
Jorge Colon  
Vilmali Lopez-Mejias  
Jose Lasalde

### SOUTH CAROLINA

#### University of South Carolina, Chuanbing Tang

Dmitry Peryshkov  
Aaron Vannucci  
Chuanbing Tang

Sheryl Wiskur  
Thomas Makris

### TENNESSEE

#### LeMoyne-Owen College, Yahia Hamada

Yahia Hamada

Sherry Painter

#### Middle Tennessee State University, Paul Gregory Van Patten

Keying Ding

### TEXAS

#### Baylor College of Medicine, Oluwatoyin Asojo

Oluwatoyin Asojo  
Kjersti Aagaard-Tillery

Bert O'Malley  
Oluwatoyin Asojo

#### Greater Houston Local Section, ACS, Carolyn Burnley

Yingchun Li  
Gururaj Neelgund

David Thompson  
Sam Houston State University

Bruce Prince  
Texas Southern University

Crystal Young  
University of St. Thomas

## Students

### Summer II

Rocio Del M. Aviles-Mercado  
Emanuel Colon-Escalera  
Jelliany Lopez Batista  
Darwing Padilla Rolon

### Summer I

Precious Breeland  
Aujaunae Brown  
Laurel Evans  
Samuel Hankinson  
Jassamine Green  
Veda Lightfoot

### Summer I

Khadijah Darboe  
Sarah Shotwell

### Summer II

Hasan Hamada

### Summer I

Amberlynn Smith

### Summer II

Edgar Lozano

### Summer I

Carlos Gerardo Fuentes  
Chinecherem Ndukwe  
Miguel Velasquez

### Summer II

Alberto Partida  
Shanii Tabb

### Summer I

Deshawn Miller  
Kaleb Small

Laila Tucker

Heaven Banks

Robin Reyes Velasquez



# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

Yingchun Li                      Prairie View University  
Bruce Prince                      Texas Southern University  
Jakoah Brgoch  
Lars Grabow                      University of Houston  
B. Montgomery Pettitt              University of Texas Medical Branch

### **San Antonio Local Section, ACS, E. Robert Fanick**

Carol Ellis-Terrell                      Southwest Research Institute  
Maoqi (Mark) Feng  
Stephen Bach                      University of Texas at San Antonio  
Doug Frantz  
Kathryn Mayer

Maoqi (Mark) Feng                      Southwest Research Institute  
Paulo Carvalho                      University of the Incarnate Word

### **Texas Wesleyan University, Terrence Neumann**

Terrence Neumann  
Phillip Pelphrey  
Michael Weir

Terrence Neuman

## UTAH

### **University of Utah, Shelley Minter**

Shelley Minter

## VERMONT

### **University of Vermont, Rory Waterman**

Rory Waterman

## VIRGINIA

### **Randolph-Macon College, John Thoburn**

John Thoburn

## Students

### **Summer II**

Reginald Collins  
Adesuwa Ehioghae  
Alma Harris  
Cindy Mai  
Yenifer Gil

### **Summer I**

Alexus Arizola  
Kristin Silva  
Robert Castillo  
Mychaela Harris  
Juan Valdivia

### **Summer II**

Elysha Garcia  
Tristin Zamora

### **Summer I**

Cristopher Romero  
Ifeoluwa Kehindle  
Kevin Meraz

### **Summer II**

Bennie Tarrant

### **Summer I**

Alfonso Chinchilla  
DeSange Kuenihira

### **Summer II**

Hibo Jafar

### **Summer I**

LaStacia Sampson

# 2017 Project SEED Summer I & II Programs

## Institutions/Coordinators/Mentors

### Virginia Commonwealth University, Michael Hunnicutt

Katherine Tibbetts  
Julio Alvarez  
M. Samy El-Shall  
Indika Arachchige

## Students

### Summer I

Zahna Jones  
Simmone McLain  
Jazmyne Scott  
Dorcas Williams

## WASHINGTON

### Washington State University, Su Ha

Jake Gray

### Summer I

Hongyeoul Park

## WEST VIRGINIA

### Marshall University, Derrick Kolling

Rosalynn Quinones

### Summer I

Cheyenne Elswick

### West Virginia State University, Michael Fultz

Michael Fultz

### Summer I

Briana Haas  
Ciera Moles



Photo Courtesy of Virginia Commonwealth University



Photo Courtesy of Greater Houston Local Section



Photo Courtesy of Akron Local Section

# 2017–2018 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 2017, 27 students who have demonstrated a high potential to succeed in chemistry were awarded the college scholarships for the 2017-2018 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.



**Demi Reed** is attending Ohio University, Athens, majoring in Forensic Chemistry.

Career goals: Demi would like to be the Lead Forensic Chemist for the FBI Laboratory in Quantico, Va.



**Chrisan-Kay Clarke** is attending Prairie View A&M University, Tex., majoring in Chemistry Bio-Medical.

Career goals: After graduation, Chrisan-Kay is interested in working as a Pharmacist Technician.



**Mary Martinez Nunez** is attending Bronx Community College, N.Y., majoring in Chemistry.

Career goals: Mary's career goal is to get a doctorate degree in Biochemistry and be a research scientist.

## 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 Ernst 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.

# 2017–2018 College Scholarship Recipients

## Bader Scholars

### **Rayna Bandy**

High School: Rio Rancho High School,  
Rio Rancho, N. Mex.  
SEED Institution: Sandia National Laboratories,  
N. Mex.  
SEED Mentor: Bernadette Hernandez-Sanchez  
University: New Mexico Tech, Socorro  
Major: Chemistry

### **Sumar Beuti**

High School: Oak Grove High School, Hattiesburg, Miss.  
SEED Institution: The University of Southern Mississippi,  
Hattiesburg  
SEED Mentor: Joseph Lott  
University: The University of Southern Mississippi,  
Hattiesburg  
Major: Biochemistry

### **David Bruns**

High School: Fishers of Men Academy,  
Rosamond, ILL.  
SEED Institution: Millikin University, Decatur, ILL.  
SEED Mentor: Anne Rammelsberg  
University: Millikin University, Decatur  
Major: Chemistry

### **Emanuel Colon Escalera**

High School: Rafael Cordero High School,  
San Juan, P.R.  
SEED Institution: University of Puerto Rico Río Piedras  
Campus, San Juan  
SEED Mentor: Jorge Colon  
University: University of Puerto Rico, Bayamon  
Major: Chemical Engineering

### **Janiel Cortes**

High School: Barrington High School, Carpentersville, ILL.  
SEED Institution: Loyola University Chicago, ILL.  
SEED Mentor: James Devery  
University: Loyola University, Chicago  
Major: Chemistry

### **Joakin Ejie**

High School: Hercules Middle High School, Hercules, Calif.  
SEED Institution: Chevron Richmond Technology Center,  
Calif.  
SEED Mentor: Jonathan Moore  
University: Centra Costa College, San Pablo, Calif.  
Major: BioChemistry

### **Kelly Flores**

High School: College Park High School, Pleasant Hill, Calif.  
SEED Institution: USDA, Albany, Calif.  
SEED Mentor: Jennifer Bragg  
University: University of California, Davis  
Major: Biochemistry

### **Jessica Grabowski**

High School: Delcastle Technical High School,  
Wilmington, Del.  
SEED Institution: University of Delaware, Newark  
SEED Mentor: Mariah Woodroof  
University: University of Delaware  
Major: Chemical Engineering

### **Fernando Guerrero**

High School: Rio Rancho High School, Rio Rancho,  
N. Mex.  
SEED Institution: University of New Mexico, Albuquerque  
SEED Mentor: Timothy Boyle  
University: University of New Mexico, Albuquerque  
Major: Chemistry

### **Beili Huang**

High School: Natomas High School, Sacramento, Calif.  
SEED Institution: University of California, Davis  
SEED Mentor: Sheila David  
University: University of California, Davis  
Major: Chemical Engineering

### **Chang Kim**

High School: Lowell High School, San Francisco, Calif.  
SEED Institution: United States Department of Agriculture  
Western Regional Research Center,  
Albany, Calif.  
SEED Mentor: Wallace Yokoyama  
University: University of California, Santa Cruz  
Major: Chemical Informatics/Computational Chemistry

### **Michael Lee**

High School: Southside High School, Southside, Ala.  
SEED Institution: Jacksonville State University, Ala.  
SEED Mentor: Jan Gryko  
University: Gadsden State Community College,  
Gadsden, Ala.  
Major: Chemical Engineering

# 2017–2018 College Scholarship Recipients

## Bader Scholars

### **Cindy Mai**

High School: North Shore Senior High School, Houston, Tex.  
SEED Institution: University of Houston, Tex.  
SEED Mentor: Lars Grabow  
University: University of Houston  
Major: Chemical Engineering

### **Sarine McKenzie**

High School: Pittsburgh Creative and Performing Arts High School, Pa.  
SEED Institution: Duquesne University, Pittsburgh, Pa.  
SEED Mentor: Partha Basu  
University: The Pennsylvania State University, University Park  
Major: Chemistry

### **Clarissa Ortega**

High School: Eisenhower High School, Rialto, Calif.  
SEED Institution: San Joaquin Valley Agriculture Science Center, Parlier, Calif.  
SEED Mentor: Jianchi Chen  
University: University of California, Santa Cruz  
Major: Chemical Engineering

### **Mir Faiz Rehman**

High School: Nicolas Senn High School, Chicago, ILL.  
SEED Institution: Loyola University Chicago, ILL.  
SEED Mentor: Chad Eichman  
University: University of Illinois at Chicago  
Major: Biochemistry

### **Jacqueline Sandoval**

High School: Garinger High School, Charlotte, N.C.  
SEED Institution: University of North Carolina at Charlotte  
SEED Mentor: Tom Schmedake  
University: University of North Carolina, Greensboro  
Major: Biochemistry

### **Camila Sierra Gutierrez**

High School: Union City High School, Union City, N.J.  
SEED Institution: New Jersey Institute of Technology, Newark  
SEED Mentor: Roman Voronov and Long Pham  
University: Hudson County Community College, Jersey City, N.J.  
Major: Chemical Engineering

### **Nicole Taylor**

High School: East Orange STEM Academy, East Orange, N.J.  
SEED Institution: The State University of New Jersey, Rutgers, Newark  
SEED Mentor: Huixin He  
University: Rensselaer Polytechnic Inst., Troy, N.Y.  
Major: Chemical Physics and Physics

### **Malcolm Wiseman**

High School: Pike High School, Indianapolis, Ind.  
SEED Institution: Eli Lilly & Company, Indianapolis, Ind.  
SEED Mentor: David Myers  
University: Prairie View A&M University, Tex.  
Major: Chemistry

## Ashland Scholars

### **Hannah Burnau**

High School: West Lafayette Jr/Sr High School, Ind.  
SEED Institution: Purdue University, Lafayette, Ind.  
SEED Mentor: Stephen Beaudoin  
University: Purdue University, Ind.  
Major: Materials Science and Engineering

### **Rocco Molinelli**

High School: Elmwood Park High School, Elmwood Park, ILL.  
SEED Institution: Loyola University, Chicago, ILL.  
SEED Mentor: Wei Tsung Lee  
University: The University of Chicago  
Major: Chemical Engineering

## Bayer Scholars

### **Brian Foster**

High School: Shady Side Academy, Pittsburgh, Pa.  
SEED Institution: Covestro, Pittsburgh, Pa.  
SEED Mentor: Marie Urick and Robyn Francis  
University: Princeton University, N.J.  
Major: Chemistry/Biochemistry



# 2017–2018 College Scholarship Recipients

## Bayer Scholars

### Jahzeel Ortiz

High School: Dra Conchita Cuevas High School, Gurabo, P.R.  
SEED Institution: University of Puerto Rico Rio Piedras  
SEED Mentor: Abel Baerga Ortiz  
University: Universidad Politecnica de Puerto Rico, San Juan  
Major: Chemical Engineering

### Umme Simanto

High School: Earl Wooster High School, Reno, Nev.  
SEED Institution: University of Nevada, Reno  
SEED Mentor: Ian Wallace  
University: University of Nevada, Reno

## Fosbinder Scholars

### Andrea Nguyen

High School: Capital High School, Boise, Idaho  
SEED Institution: Boise State University, Idaho  
SEED Mentor: Jeunghoon Lee  
University: Pomona College, Claremont, Calif.  
Major: Chemistry

### Chou Xiong

High School: Golden Valley High School, Merced, Calif.  
SEED Institution: University of California, Merced  
SEED Mentor: Christine Isborn  
University: University of California, Irvine  
Major: Chemistry



Bandy



Beauti



Bruns



Colon Escalera



Cortes



Ejie



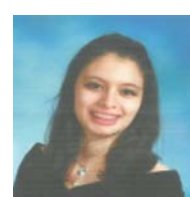
Foster



Grabowski



Guerrero



Gutierrez



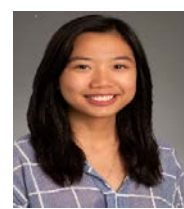
Huang



Kim



Lee



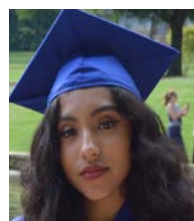
Nguyen



Ortiz



Rehman



Sandoval



Taylor



Wiseman

# 2017–2018 College Student Testimonials



**Bader Scholar: Sumar Beauti**  
Oak Grove High School,  
Hattiesburg, Miss.  
**Mentor:** Joseph Lott  
**SEED Institution:** University of  
Southern Mississippi

Completing the Project SEED program has been a fulfilling and rewarding experience for me. From this experience, I have gained and improved several skills that will help me with my future studies, such as time management, better observation of details, critical-thinking, and most importantly, being able to work independently. I was able to convert the knowledge I have gained from chemistry and science-related classes in school into a hands-on experience, only to learn more in one summer than I did in a semester of high school. *“Although my original anticipated major was biochemistry, I am now considering polymer science as a possible major, a decision I would not have thought about before my Project SEED experience.”*



**Bader Scholar: David Bruns**  
**High School:** Fishers of Men  
Academy, Rosamond, ILL.  
**Mentor:** Anne Rammelsberg  
**SEED Institution:** Millikin  
University, Decatur, ILL.

Prior to participating in the Project SEED program this summer, I was 100% sure of pursuing a career in a STEM-related field. I have since narrowed it down to the field of chemistry. This project sparked my interest in performing research at the undergraduate and graduate level. Before entering the Project SEED program, I was always interested in science and research, but I thought I had to come up with my own unique idea to research. Having been able to participate in the Project SEED program has influenced me to continue the research where I left off and to get involved in the undergraduate mentoring part of the Project SEED program while I am in college. *“My experiences in the Project SEED have had a lasting impact on my life, personally, by making new friends, educationally, by meeting professors that I will be working with in the future and professionally, by meeting ACS members and honing my speaking skills.”*



**Bayer Scholar: Brian Foster**  
Shady Side Academy,  
Pittsburgh, Pa.  
**Mentor:** Marie Urick  
**SEED Institution:** Covestro,  
Pittsburgh, Pa.

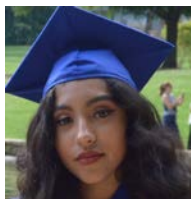
Before I participated in the Project SEED for the first time two years ago, I had little interest in the career with chemistry. Even though, I enjoyed chemistry and was excited about the opportunity to further explore it through this program, I had never actually considered a future career in any scientific field, let alone chemistry. That all changed during my first summer with Project SEED at Covestro. *“For the first time in my life, I was exposed to the wide variety of careers that exist in the chemical field. For the first time in my life, I witnessed what chemical research looked like outside of a classroom environment. For the first time in my life, I imagined a career in chemical research for myself.”* And if the first summer wasn't great enough, the second summer was absolutely amazing.



**Bader Scholar: Beili Huang,**  
Natomas High School, Sacramento,  
Calif.  
**Mentor:** Sheila S. David  
**SEED Institution:** University of  
California Davis

Project SEED had been a pleasant surprise. I had originally applied because I was curious about research. I had always wanted to be a scientist as a little kid by doing research and making new discoveries. *“Before my involvement in the SEED program I had no idea I loved chemistry so much. In college, I am planning to major in chemical engineering because I was inspired by the SEED program. My involvement in this amazing opportunity has made a huge impact on my career and educational goals.”* It has inspired me to be a researcher as my career. The exposure to science and the amazing people that I encountered has given me insight about my true passion for chemical research.

# 2017–2018 College Student Testimonials



**Bader Scholar: Jacqueline Sandoval**  
Garinger High School, Charlotte, N.C.  
**Mentor:** Thomas Schmedake **SEED**  
**Institution:** University of North Carolina-Charlotte

As a young Hispanic woman, I thought it was going to be difficult to receive opportunities like this one. But once I heard about this amazing opportunity, I made sure I took full advantage of it. I knew it would help me to reach my goal of becoming a pharmacist. I had great mentors to look up to and learn from. While I was very hesitant in the beginning because of the little experience I had working with chemistry, my mentors pushed me and taught me to believe in myself. Project SEED has helped me develop great skills such as communication, leadership, and self-motivation. I have challenged myself by taking AP classes and participating in many clubs to prepare me for life after high school. *“If I had not participated in Project SEED, I do not think I would have the self-motivation I have today and will continue to have in the future.”*



**Fosbinder Scholar: Chong Xiong**  
Merced Union High School,  
Atwater, Calif.  
**Mentor:** Mackenzie Provorse  
**SEED Institution:** University of California Merced

During my Project SEED experience, I discussed with the principal investigator of the research group about the field of Computational Chemistry and was amazed by the superlative education I was receiving from her. I have never seen myself being so dedicated to a project that I would constantly wait for days just to see my results. My time during the internship was worthwhile and extremely beneficial; I gained preparation for college studies, enhanced my self-confidence, experienced college-level research, and finally, built strong relationship with my mentors that have significantly helped me solidify and grow my passion for chemistry. *“I have already applied to four UCs and plan to major in chemistry because of my rich experience during Project SEED. After finishing my B.A in chemistry, I plan to get into a Ph.D. program that deals with computational chemistry.”*



**Bader Scholar: Nichole Taylor**  
East Orange STEM Academy, East Orange, N.J.  
**Mentor:** Huixin He  
**SEED Institution:** The State University of NJ, Rutgers, Newark

Growing up I knew that I always wanted to pursue a higher education after high school, but never thought that becoming a researcher was possible. From the age of 12, I knew that I wanted to save and accomplish great things in the world in the fields of either: Chemical Physics, Astrophysics, Computer Science, and or Astrochemistry. With the help of Project SEED, I was able to be exposed to research the many opportunities that followed. Project SEED has provided me with opportunities that I once thought as impossible. Having completed two summers of research has made me appreciate the chemistry field even more and has made me look at academia from a different perspective. *“Being able to contribute in life changing projects made me one step closer to making the world a better place for our successor. Project SEED has done more than influence my education, it has given me the maturity to want to do and see more outside of my community despite my economic background.”*



**Bader Scholar: Malcom Wiseman**  
Pike High School, Indianapolis, Ind.  
**Mentor:** David Myers  
**SEED Institution:** Eli Lilly and Company, Ind.

I was informed about an internship through my teacher, and I appreciate the chance very much. By being in this amazing program I was able to take knowledge from the class room and apply it to real life experiences. When I came back from the summer, and entered the class room I then put my experiences into practice. *“Project SEED was a true eye opening experience. I have always wanted to be a surgeon, but since this summer of research I want to make sure my future involves a career in research. I now understand its importance to the world and how exciting it can be. I never would have guessed that I would get the opportunity to meet such wonderful people who gave me great advice. Ultimately shaping my new path as a scientist.”*



# Students Speaking from the Lab

The opportunity to work in a research lab is an enriching experience in itself. Here, our Project SEED students give us a look at their summers as they transitioned from high school chemistry classes to professional level research.



*Photo Courtesy of Stanford University*

## **Erin Moore, Idaho** **Summer I**

“This project taught me what life is like in a lab doing research. It will help me in the future to determine what career path I wish to go down. My lab mates taught me how to use the basic equipment and all the chemistry I did not understand. This project helped me not just as a student but as a person, I truly have to thank this program.”

## **Ashley Ring, Ind.** **Summer I**

“My SEED mentor was very involved and supportive of my continued learning. He always made sure I was comfortable in the lab and that I understood all of the processes that were happening. My mentor made such an amazing difference in my life and helped me gain a wealth of knowledge.”

## **Julie Dinh, Ind.** **Summer I**

“I was challenged and treated like the other undergraduate students in the lab. I had the perfect balance of working independently and working in a group. Because of that, I learned so much about science than I could possibly in eight weeks.”

## **Yenifer Gil, Tex.** **Summer II**

“Project SEED is an amazing program, it allowed me to get familiar with an environment I had always envisioned myself in. I loved being allowed to participate as a fellow in this program. I came in as a sprout and now I leave like a blossoming flower. Thank you!”

## **Clara Reasoner, Ind.** **Summer II**

“Project SEED is an exceptional program that has greatly impacted my life. The opportunity to participate in active research while still in high school has cemented my interest in science and research.”

## **Isis Guadalupe, P.R.** **Summer I**

“The program has helped me get the knowledge and experience not many high school students have. Here we are able to grow both in a professional and personal way, and learn hands-on which will get us closer of what it feels like being in the science field.”

## **Jingjun Zeng, Calif.** **Summer I**

“It was a very helpful and nice opportunity to work in a lab. As I was doing research in this program, I learned not only the biological techniques but also the research spirits that inspire me to pursue a career in science.”

## **Cesar Romero, Mass.** **Summer II**

“Project SEED is one of the best experiences I have had in learning and in branching out my interest of pursuing science as a major in the future. The relationship created with other people, the constant learning being done, and the overall achievement of making everyone feel equal, regardless of financial background is the highlight of accomplishment done by Project SEED. The past two summers could not have been better without Project SEED.”

# Students Speaking from the Lab

## Precious Breeland, S.C. Summer I

"I really enjoyed my summer at USC. By doing hands on work, it really gave me a better understanding of chemistry. By being a part of this program it made me think about considering chemistry as my major. I am more than grateful for the experience."

## Miguel Velasquez, Tex. Summer I

"Project SEED is an amazing program that definitely changed my perspective of research, and allowed me to meet a very diverse group of professionals."

## John Bowers, Mont. Summer II

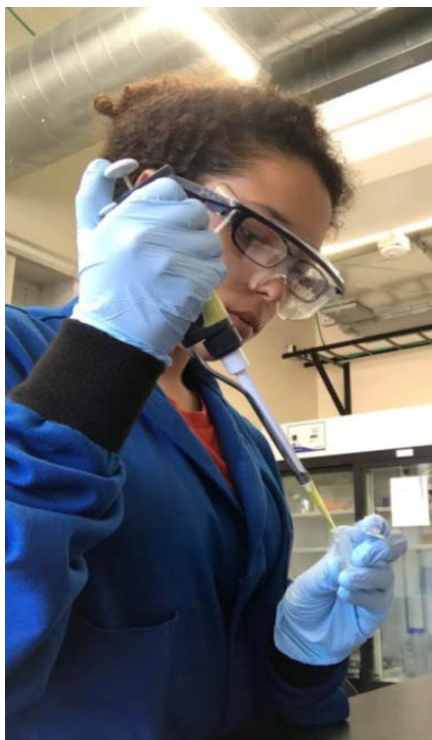
"I thought this was a wonderful program. It allowed me to really see what scientists actually do in a lab and some of the work required in the field of scientific discovery. I absolutely would recommend this program to my friends. It was a phenomenal way to spend my summer."

## Asialyn Lee, Calif. Summer I

"Thank you for this program; we need more of these kind of programs! It has truly changed my life for the better. I would love to eventually contribute back to this program when I am older."

## Salimata Konate, N.Y. Summer I

"The ACS Project SEED really broadened my perspective on the careers I can pursue in life. The environment I was placed in made me feel as though there was nothing I couldn't conquer! The summer definitely inspired me to pursue a career in biological and life sciences."



*Photo Courtesy of Stanford University*

## Rania Ousman, Ind. Summer I

My Project SEED experience has been nothing but an invaluable experience for me and has taught me skills that I wouldn't trade for anything in the world. Being able to work in a lab and to see yourself succeed in something was nothing but a dream come true for me. Having come from a country that never allows students to experience the science I have been exposed to, has made me realize how very fortunate I am and I cannot stress enough on how tremendously this experience has changed my life.

## Miguel Velasquez, Tex. Summer I

"Project SEED is an amazing program that definitely changed my perspective of research, and allowed me to meet a very diverse group of professionals."

## Guadalupe Covarrubias-Oregel, Calif. Summer I

"Project SEED changed my views of the research world. I would have never thought that I would be working with a professor one on one or with graduate students everyday receiving their knowledge and encouragement. I learned about the ethics in research, how to work with confocal microscopes, keep a lab journal, and the list goes on. When I would see pictures of students conducting research in a lab, I thought it would be impossible for me to ever do that, but thanks to Project SEED, I was able to do research before I was even in college! It is such an immense opportunity that I consider myself blessed to be a part of this and I am so grateful for this experience. I was able to buy my first laptop and scholastic supplies for college with the stipends I received! For all of the donors and sponsors, you have no idea how many lives you change through this program!"

## Ishmam Chowdhury, N.J. Summer I

"Project SEED is a great opportunity for economically disadvantaged students who want to pursue a degree in the science field. The experience I had in the lab was incredible. Working in the lab helped me develop practical skills, enhanced my interest in physics and chemistry and increased my understanding of science. I conducted my research with a great mentor, Dr. Martin, who guided and helped me throughout the research. Project SEED helped me to decide which major I will pick in my future."



# Project SEED Students at Sci-Mix

Project SEED students from the Chemical Society of Washington, Georgia, Maryland, New York, North Jersey, Trenton, and Washington-Idaho Border local sections presented posters of their research at the Sci-Mix poster session at the 254<sup>th</sup> ACS Fall National Meeting in Washington, DC.



*Photos Courtesy of ACS, Linda Wang*

**Chemical Society of Washington: Coordinator, Allison Aldridge  
Georgetown University**

Giselle Flores	Catalytic C-H Functionalization
Christopher Okorie	Flow-Modulated GCxGC Dielectric Barrier Discharge Mass Spectrometry for Elemental Detection of Organochlorines
Johannes Osorio	Synthesizing Diverse Metal- or Oxide-Based Nanoparticles

**Howard University**

Tennen Dukuly	Design & Synthesis of Novel NLRP3 Inhibitors Nigrum
Osogieahon Ewanehi	Extraction, Purification and Quantitation of Piperine in Piper Nigrum

**Library of Congress, Preservation Research and testing Division**

Yoonjae Jee	Identifying the Quality of Paper Through Non-Invasive Techniques
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**Thermodynamic Metrology Group, NIST**

Sheku Deen-Tarawalie	Synthesis of Shaped Silica Colloid Particle and Silver Nanoparticles
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**University of Maryland, Baltimore**

Absatas Njie	Controlled Assembly of Inorganic Nanoparticles for the Formation of New Hybrid Nanomaterials
--------------	--

**University of Maryland, College Park**

Kevin Fuentes	What Effects Does Changes in the Flow Rate of Helium Have on the Signal Detection of the Mass Spectrometer?
Maria Rojas	Developing New Catalytic Systems for Oxidative Methylation of Amines with Methane and Oxygen

# Project SEED Students at Sci-Mix

## Georgia Local Section

### **Clark Atlanta University: Coordinator, Ishrat Khan**

Briyhan Martin                      Self-Assembly of Hairy Nanoparticles: Bottom-up Preparation of Hierarchical Superstructures

### **Georgia Gwinnett College: Coordinator, Ajay Mallia**

Emily Xu                              Molecular Modeling of Plasmodium falciparum Dihydropteroate Synthase: A Target for Antimalarial Drug Studies

## Maryland Local Section

### **John Hopkins University: Coordinator, Takashi Tsukamoto**

Shan Shueh                          Drug Discovery Driven by Chemistry

### **University of Maryland Eastern Shore: Coordinator, Victoria Volkis**

Cylah Bailey                          Comparing the Composition of Essential Oils Extracted from Different Breeds of Holy Basil and Moroccan Argan

Julia Cornish                          Seafood industry Waste into Carbon Dioxide Capturing Sorbent

## New York Local Section

### **Union City High School/AEA: Coordinators, Mina Armani, Nadia Makar, Amanda Smith**

Gabriela Ale                          Effects of Sodium Chloride on Hypertension

Aswin Aguinaga                      Biofuel Production from Enzymatic Hydrolysis of Plant Leaves

Mario Banos                          Biofuel Production from Enzymatic Hydrolysis of Plant Leaves

Keith Branes                          Organ-On-Chip: Microfluidic In-Vitro, NVU Model

Chelsea Castillo                      Surface Attachment of Ru Molecular Complex to Plasma Grafted FTO Surfaces

Leilani Garcia                          Exploring Alkali Promotion for CO<sub>2</sub> Activation and Catalyst Coke Suppression

Giselle Guaman                      Global Warming and Photosynthesis: Leaf Gas Exchange in Wetlands and Forests

Aldair Medrano                      Graphene and Nanotubes: Carbon Allotropes and Spectroscopy

Yunior Toribio                          Gold Coated Membrane-Based Biosensor

Valerie Zapata                          Encapsulation of DNA in liposomes

## North Jersey Local Section

### **New Jersey City University: Coordinator, Robert Aslanian**

Mirka Ortiz                              Synthesis and Evaluation of a Mutual Prodrug

John Carvajal                          Conducting N-Arylation of Sulfonamides with Boronic Acids using a New Method

Anna Yactayo                          Regulation of CAMK2 at Inhibitory Synapses by Calcineurin

Youstina Youssef                      Preliminary Observations on the Role of *Udotea* in Ocean Acidification

### **New Jersey Institute of Technology: Coordinator, Reginald Tomkins**

Jaime Mendoza                          Estimating Atmospheric Black Carbon Concentrations

Marcelo Munoz                          Analysis of Atomistic Structures of Adsorbed Argon Using Python

Camile Cordero                          Water Soluble Fluorescent Compound for Cell Imaging



# Project SEED Students at Sci-Mix

## Trenton Local Section

**Rider University: Coordinator, Jamie Ludwig**

Geordelle Maxwell

Gbaweah Sandy

Ameka Yawson

What Causes Gum Spots on Black Cherry Trees at Fernow, WV?

Synthesis of Pyridine Sulfonamides using N-Oxides

How Can Visual Aids Help Organic Lab Students?

## Washington-Idaho Border Local Section

**Washington State University: Coordinator, Su Ha**

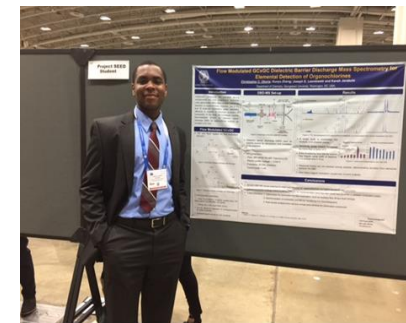
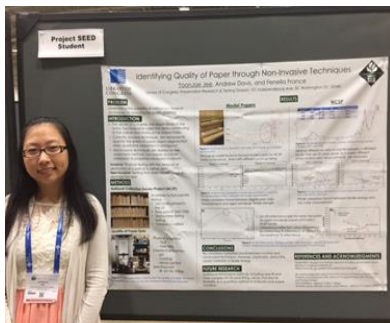
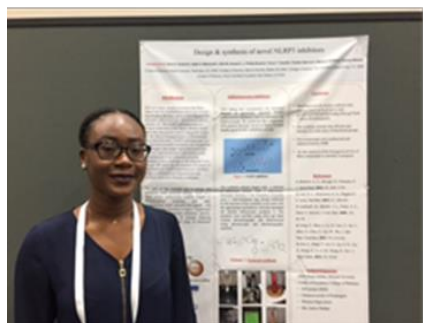
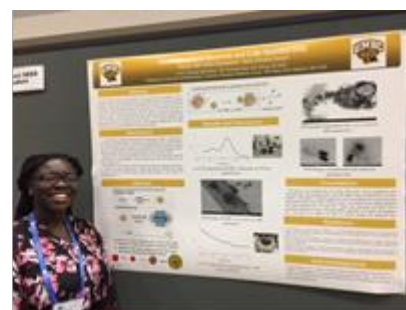
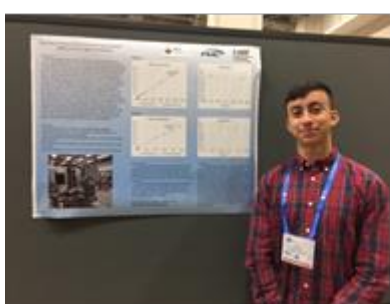
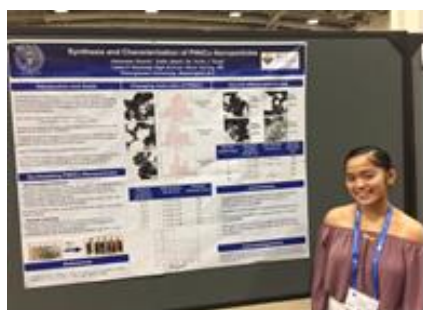
Hongyeoul Park

Testing Reduction Times for Exsolated Nickel Nanoparticles on LaSrTi

Perovskite for Electric Field Assisted Catalytic Reactors



*Photos Courtesy, Allison Aldridge*



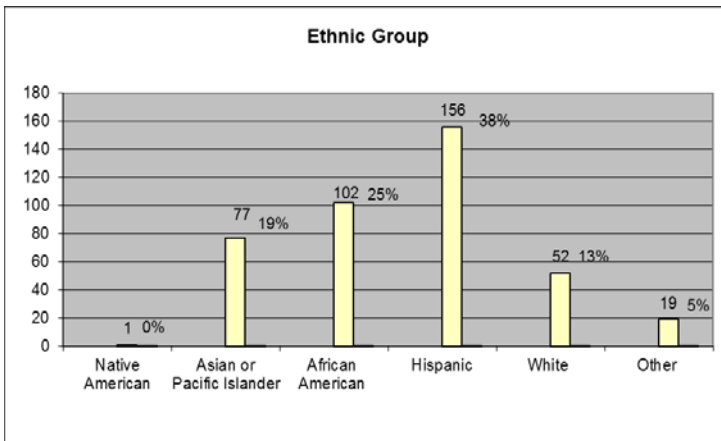


# 2017 Student Survey Results

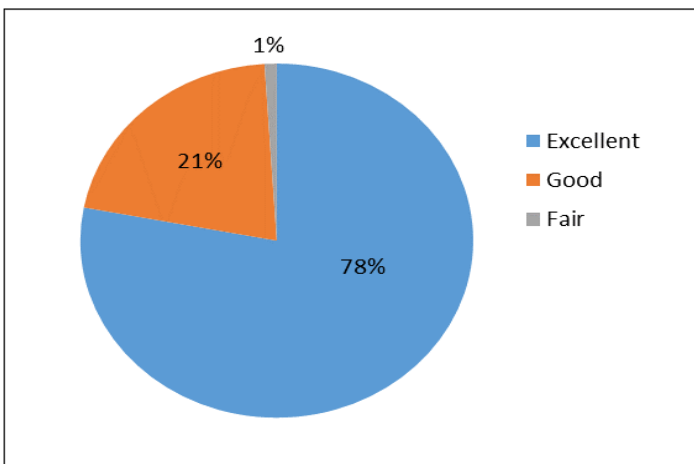
The survey is designed to assess the success of the program. The results of the survey provide information on the background of the students, their educational aspirations, and their assessment about Project SEED. This information is useful in determining whether ACS Project SEED is serving its target population and if it is achieving its goals. Of the 411 students in the program, 407 students responded.

Student Gender	Summer I	Summer II	Total %
Female	194	56	61%
Male	109	51	39%
TOTAL	303	104	100%

Family Income Level	Summer I	Summer II	Total %
\$6,999 or Less	49	9	14%
\$7,000 to \$16,000	60	18	19%
\$17,000 to \$25,000	66	34	25%
\$26,000 to \$35,000	65	26	22%
\$36,000 or more	63	17	20%
TOTAL	303	104	100%



## How Would You Rate Your SEED Experience?



Demographics by State	Summer I	Summer II
Alabama	9	1
Arkansas	2	1
Alaska	0	0
California	60	18
Colorado	4	0
Connecticut	3	0
District of Columbia	7	3
Florida	3	0
Georgia	10	0
Idaho	6	2
Illinois	4	5
Indiana	22	6
Iowa	2	1
Kansas	1	1
Maryland	3	1
Massachusetts	3	0
Michigan	9	9
Minnesota	6	1
Mississippi	4	0
Missouri	3	1
Montana	0	1
Nebraska	2	0
Nevada	5	0
New Jersey	54	18
New Mexico	1	2
New York	13	1
North Carolina	8	3
Ohio	17	11
Oregon	2	2
Pennsylvania	5	3
Puerto Rico	8	4
South Carolina	6	0
Tennessee	3	2
Texas	16	10
Utah	2	0
Virginia	5	0
Vermont	0	1
Washington	1	0
West Virginia	3	0
TOTAL	304	107

# 2017 Student Survey Results

What is the highest level of education you expect to complete?	Summer I	Summer II	Total %
High School	4	0	1%
Vocational, Trade, Business	2	0	0.5%
Some College	2	1	0.5%
2-year College Graduate	0	0	0%
4-year College Graduate	104	31	33%
Graduate/Professional School	191	72	65%

Student Research Sites	Summer I	Summer II	Total %
Academic Laboratory	227	70	72%
Government Laboratory	13	6	5%
Industrial Laboratory	32	15	12%
Medical Laboratory	31	13	11%

Students Agreed that Project SEED Helped:	Summer I	Summer II	Total %
Develop Skills and abilities	293	101	97%
Develop self-confidence	250	87	83%
Develop responsibility	284	99	95%
Understand the ethical behavior of scientists	276	93	91%
Develop better study habits	200	73	67%
Learn what advanced study is like	278	96	92%
Decide to continue my education after high school	265	91	88%
Choose a college major	156	51	51%
Decide to pursue a career in science	198	75	67%
Develop greater interest in scientific/technical areas	260	90	86%

College Majors	Summer I First Choice	Summer II First Choice
Agriculture	1%	0%
Architecture	1%	1%
Astronomy	1%	1%
Biology & Life Sciences	15%	16%
Business & Commerce	4%	4%
Chemistry	25%	25%
Communications	0%	0%
Computer Sciences	3%	7%
Earth Sciences	0%	0%
Education	1%	1%
Engineering	13%	11%
Foreign Languages	0%	0%
Health Professions	15%	13%
Home Economics	0%	0%
Language & Literature	0%	0%
Library Science	0%	0%
Mathematics	2%	2%
Military Sciences	0%	0%
Pharmacy Sciences	1%	1%
Philosophy	0%	0%
Physics	2%	4%
Social Sciences	1%	3%
Other	13%	12%

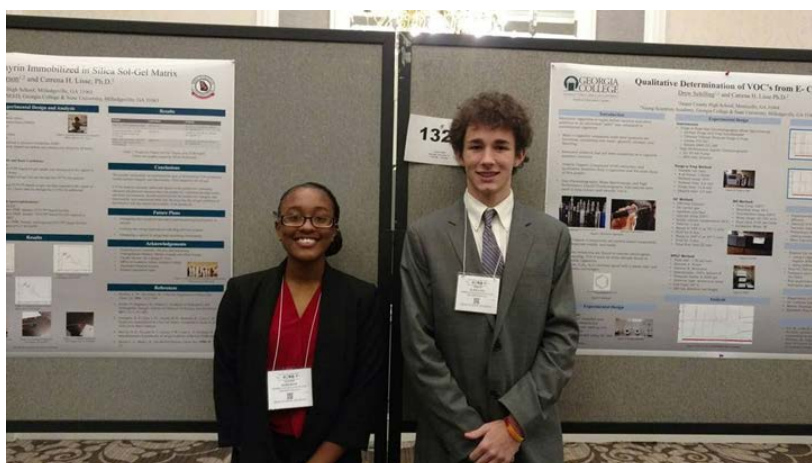
What are the chances that you will become a scientist, engineer, or mathematician in the future?			
	Summer I	Summer II	Total
Excellent	139	51	47%
Good	113	40	38%
Fair	40	71	27%
Poor	11	2	3%

# 2017 Student Survey Results

In the following statements, students were asked to evaluate their experience with their mentor.	Strongly Agree or Agree	Neutral	Disagree or Strongly Disagree
I learned new skills from my SEED mentor	93%	5%	2%
It is easy to talk to my SEED mentor	91%	6%	3%
My SEED mentor assisted me with improving my overall performance and SEED research work	94%	4%	2%
My SEED mentor discussed career paths (including education) in chemistry and related sciences with me	74%	16%	9%

*Photos Courtesy of Catrena Higginbotham Lisse, Georgia College*

Student/Mentor Relationship	Total%
Very Good	75%
Good	21%
Fair	3%
Poor	0%
Total	100%



*Photos Courtesy of Chuanbing Tang, University of South Carolina*



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\*Gifts made in December 2016



**Thank you to Project SEED donors and friends. We are grateful for your commitment to helping economically disadvantaged high school students experience the possibilities of a career in chemistry.**

**We appreciate your continued generosity!**

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Department of Chemistry
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New York Local Section, ACS, Frank Romano  
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Susan Fahrenholtz
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University of Toledo, Ohio  
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Students supported through individual and corporate contributions to the ACS Project SEED Endowment.

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Patrick Aghadiuno, Nohemi Martinez, Farisha Sultan, Jonathan Uriostegui, Emily Xu – *Georgia Gwinnett College School of Science and Technology, Lawrenceville, Ga.*

Kristin Silva – *Southwest Research Institute, San Antonio, Tex.*

Tommy Sayarath, Esther Staley – *University of Akron, Ohio*

Alexus Arizola, *University of the Incarnate Word, San Antonio, Tex.*

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Sommer Gomez Gonzalez – *Rutgers, the State University of N.J.*

Kayla McKinnon – *Rutgers University, Camden, N.J.* Ranol Handapangoda, Lyndsey Lara, Emily Urbina, Kamila

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Kevin Meraz, Cristopher Romero – *Texas Wesleyan University*  
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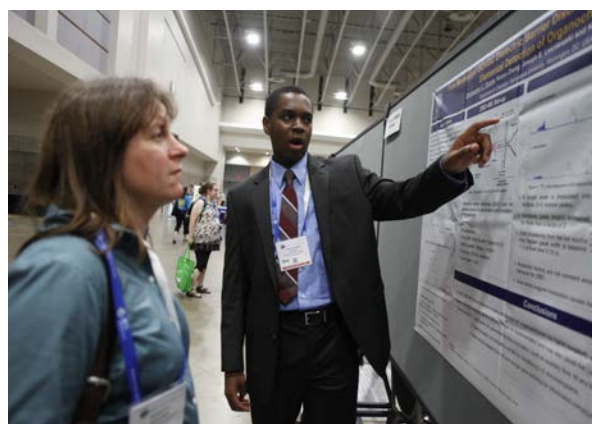
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**Sci-Mix Poster Session, Washington, D.C.**  
*Photo Courtesy of Linda Wang*



**Sci-Mix Poster Session, Washington, D.C.**  
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Eastern Oregon University, LaGrande

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University of Southern Indiana  
Evansville, Ind.

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Granada Hills, Calif.

Chuanbing Tang  
University of South Carolina  
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Alan Tonelli  
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Don Warner  
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Frostburg, Md.

Omar Christian  
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