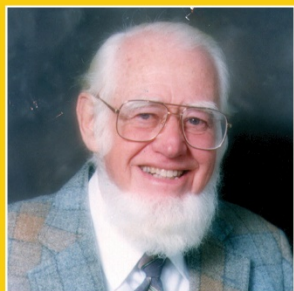


Project SEED

SUMMER EXPERIENCE FOR THE ECONOMICALLY DISADVANTAGED



Alan Nixon

Founder Project SEED



Elaine Yamaguchi

510-234-0938 | eyamaguchi08@gmail.com
Chevron (retired)
1741 Wesley Avenue, El Cerrito, CA 94530



Kenneth Nelson

510-242-1241 | kendnelson@chevron.com
Chevron Oronite Company, LLC
100 Chevron Way, Richmond, CA 94802



Wally Yokoyama

510-559-5695 | wally.yokoyama@ars.usda.gov
Western Regional Research Center
800 Buchanan Street, Albany, CA 94710

FOR MORE INFORMATION VISIT
WWW.ACS.ORG/PROJECTSEED



Societal Support: Leading Programs

Society	Scholarships or Research Grants	Summer Research	Mentors	Meeting Travel Grants	Lecture Programs Educational Materials, and Workshops
American Society for Microbiology	Undergrad Graduate	Undergrad	Undergrad	Undergrad	Faculty
American Society for Cell Biology		Graduate Through Faculty		Undergrad Through Faculty	Graduate Through Faculty
American Chemical Society		High School (SEED)			Elementary-High School Undergrad, Graduate
American Physical Society	Undergrad	Undergrad		Faculty	Faculty
Federation of Amer. Societies for Experimental Biology	Undergrad Graduate			Undergrad Through Faculty	Faculty
Society of Neuroscience			Undergrad Through Faculty	Undergrad Through Faculty	

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AMERICAN CHEMICAL SOCIETY (ACS)

PROJECT SEED 2019 PROGRAM GUIDELINES FOR COORDINATORS AND MENTORS

NOTE: If special circumstances suggest departure from the guidelines, please consult with the ACS Project SEED staff at 1-800-227-5558, ext. 4380.

FINANCIAL GUIDELINES FOR STUDENT SELECTION

1. **Eligibility** – The student must be recognized as economically disadvantaged. Preference will be given to students whose maximum family income does not exceed 200% of the current Federal Poverty Guidelines based on family size. An economically disadvantaged student applicant who is physically disabled **must** be considered on the same basis as any other applicant and may not be discriminated against in any way.

2018 Federal Poverty Guidelines

Household/ Family Size	200%	Household/ Family Size	200%
1	\$24,280	8	\$84,760
2	\$32,920	9	\$93,400
3	\$41,560	10	\$102,040
4	\$50,200	11	\$110,680
5	\$58,840	12	\$119,320
6	\$67,480	13	\$127,960
7	\$76,120	14	\$136,600

All students being considered for Project SEED with a family income over 200% of the current Federal Poverty Guidelines must be supported in a letter signed by the coordinator/mentor and forwarded to the ACS Project SEED office. The student should be admitted to the Project SEED program only after other considerations besides income eligibility are approved by the Project SEED Committee.

Students cannot start working until the Student Application form and proof of family income (IRS 1040) are received and approved by the ACS Project SEED office. ACS reserves the right to deny funding for any student who does not meet the guidelines described above unless prior approval is obtained by the ACS Project SEED. ACS will not be liable for funds distributed to students not previously approved by Project SEED.

2. **Location** – The student should be a commuting student, except in those cases in which the institution (college, university, industry, or government lab) can provide room and board and appropriate supervision at no cost to the student.
3. **Fellowships and Duration of the Program** – Summer I and II students will receive a competitive fellowship with the minimum for each program determined by the Project SEED Committee of the ACS. **The Summer I and II fellowships are \$2,500 and \$3,000, respectively.** The costs of supplies or laboratory materials cannot be deducted from student fellowships. Both programs expect at least 8 weeks of participation at approximately 40 hours per week.
4. **Payments, Surveys, and Final Reports** – Two checks will be sent from the ACS Project SEED office to the institutional sponsor or the ACS Local Section officer for disbursement to the student(s). The first check (the amount approved minus \$500 per student) will be sent upon receipt of the Student Financial/Information Statement. The second check (\$500 per student) will be sent upon receipt of all required paperwork and the Follow-Up Survey, Student Report, and Mentor Report. If this procedure is in conflict with the institution's administrative practices, other appropriate action can be considered. However, under no circumstances may mentors/coordinators deposit ACS Project SEED monies into their personal funds. Mentors who disburse funds before the receipt of approved funds from ACS Project SEED do so at their own risk.

The ACS offers “**Automatic Direct Deposit**” of Project SEED student payments. Your institution or university may take advantage of this payment method by filling out the enclosed Authorization of Direct Deposit Form and submitting it to the address indicated on the form. The ACS Project SEED office recommends this payment method for faster payment issuance.

You **DO NOT** have to resubmit a new “Automatic Direct Deposit” form if one was submitted last year.

5. **Funding from Participating Institutions** – Participating institutions are encouraged to provide supplementary funds for each student. Also, the participating institution – or another source of local funds – will be expected to bear any overhead expenses.
6. **Fellowship awards** – Fellowship funds will be awarded and determined by the number of students approved by the Committee. The initial amount of the award letter may vary and will be subject to the final number of participants who complete the program. If the total number of participants drops after the award letter is issued and received by the institution, the amount of the funds approved will be reduced accordingly.

Fellowship funds provided by ACS are only valid during the year they are approved. Any unused balance cannot be carried over to a future program year.

Available funds will be distributed across the programs based on the percentage matching funds and size of the program. Matching funds from each program are highly recommended to be at the 50% level.

7. **Program/Student Termination** – If the student terminates the program prior to completion of his/her obligation, the ACS Project SEED office must be notified immediately in writing. The disbursed award will be prorated and the unused funds must be returned to the ACS Project SEED before the end of the institution's program.

ACADEMIC GUIDELINES

1. **Program Content** – The intent of the ACS Project SEED is to provide students with the opportunity to do meaningful research. The students' role should not be that of dishwasher or observer. The program implies no employee/employer relationship.

2. **Student Pre-requisites** – The Summer I student participant(s) should have completed a one-year introductory high school chemistry course. The Summer II student participant(s) must have participated in the Summer I program. Neither Summer I nor Summer II student can be matriculated in college.
3. **Students/Mentor Ratio** – The development of a personal relationship between the student and the mentor is considered a key factor in raising the student's goals and expanding his/her horizons. For this reason, a mentor should work with no more than two SEED students during the summer.
4. **Research Projects** – The coordinators/mentors should present only one project per student. Any change in project must be approved by the ACS Project SEED committee within one week of receipt of the acceptance letter for a given project.
5. **Accident Insurance** – The ACS provides accident insurance coverage for Project SEED students, faculty members or chaperons. All participants must be registered prior to the start of the program. The period covered is limited to the 8-10 week Summer I and II programs each year. **The insurance company will administrate the plan on an excess basis, paying only eligible bills that remain unpaid after all other coverages have been exhausted.** The insurance coverage is not extended beyond the ACS Project SEED summer activity. The activities covered are limited to scheduled, sponsored, and/or supervised activities of ACS Project SEED. This insurance does not cover any conditions for which the insured is entitled to benefits under any Worker's Compensation Act or similar law. The ACS accident insurance policy coverage does not extend to damage or loss of personal property of the ACS Project SEED participants. Although ACS purchases accident insurance annually for Project SEED for the duration of the program, it is the mentor's duty to ensure that the student works in an environment in which all necessary and usual safety precautions have been taken. The student must understand both the precautions taken and the reasons for such precautions. A guideline booklet, "Safety in the Academic Chemistry Laboratories" for faculty and students, will be provided to mentors and students. **"Students should wear safety goggles in the laboratory at all times."**
6. **College and Career Counseling** – The mentor should give college and career counseling to the student. In addition, ACS will send a College Scholarship application form for the freshman year to all eligible seniors.

ADMINISTRATIVE GUIDELINES

1. **The Student Report** – The student must write a final report of the summer's work (three to five pages are adequate). **The mentor must cosign this report** and a copy must be submitted to ACS Project SEED Office. Copies should be sent to the student's high school and to any other sources from which the student received financial support. The Follow-Up Survey, designed for the program's assessment and improvement, must also be completed online by the student no later than the established deadline. Upon receipt of the final report and the Follow-Up Survey from the student, ACS will send the institution the final \$500 award for disbursement to the student.
2. **The Mentor Report** – A brief report from the mentor must be sent to the ACS Project SEED office. This report should also be sent to the other funding sources, where applicable, at the conclusion of the program. Mentors/coordinators should publicize their programs as broadly as possible. The quality of the publicity should be carefully monitored by the mentor/coordinator with respect to content and detail.
3. **Role of the ACS and Participating Institutions** – ACS coordinates Project SEED and conducts the national-level fund-raising activities. Acting under the authority of the participating institution, the local ACS Project SEED coordinator usually works with the mentor(s) to select the student(s) and to operate the program in accordance with the financial and academic guidelines set out above by ACS. The participating institution bears primary responsibility for the proper selection of eligible students within the guidelines of the program. ACS responsibility is the administration of

the program and the approval of applications for students whose eligibility is outside the guidelines set for Project SEED.

4. **Publication of Project SEED Research** – Any publications resulting from the student's research should acknowledge support from ACS and the Project SEED endowment.

ACS California Section Project SEED Students 2019

Student	Teacher / School	Mentor / Worksite	Research Topic
Ms. Milagro Adom 1900 Woolsey St., Apt. D Berkeley, CA 94703	Jesse Pabico Berkeley High School 1980 Allston Way, Berkeley. CA, 94704	Niu Dong USDA Western Regional Research Center	Alternatives to Natural Rubber SEED 1
Ms. Jasmine Aguirre 2068 Spy Glass Ct. Merced, CA 95340	Andrew Powers Golden Valley High School 2121 E. Childs Ave., Merced, CA 95341	Anand Subramaniam University of California, Merced (Castle Outpost)	Long Term Support of Lipid Bilayers on Polydimethyl (siloxane) Surfaces SEED 1
Mr. Jose Alfaro 2451 Church Ln., Apr. 97 San Pablo, CA 94806	Catherine Simpson Richmond High School 1250 23rd Street, Richmond, CA 94804	Les Jackowski Chevron Energy Technology Company	Anti-Fouling Studies SEED 2
Mr. Gustavo Banda 524 E. Manning Ave. Reedley, CA 93654	Kathryn Connolly Reedley High School 740 W. North Ave., Reedley, CA 93654	Rachel Naegele USDA San Joaquin Valley Ag Sciences Ctr	Virulence differences in Botrytis cinerea isolates SEED 1
Ms. Nico Blum 1825 Carmel Ave. Stockton, CA 95204	William Lorentz A.A. Stagg High School 1621 Brookside Road, Stockton, CA 95207	O. David Sparkman University of the Pacific	Peptides and Mass Spectrometry SEED 1
Mr. Zaid Cervantes 1136 S. Clover Ave. Fresno, CA 93727	Albert Rodriguez Clovis North Education Center 2770 E. International Ave., Fresno, CA 93730	Joy Goto California State University	Fruit Flies as a Model System to Study Neurodegenerative Disease SEED 1
Ms. Diana Chang 2456 Franklin Rd. Merced, CA 95348	Maria Rickard Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Eva de Alba Bastarrechea University of California, Merced	Research on Proteins of the Death Domain superfamily SEED 1
Mr. Steven Chen 43 Topeka Ave. San Francisco, CA 94124	Bryan Marten Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	Ron Haff USDA Western Regional Research Center	Sorting pistachio nuts (or other tree fruits) SEED 1

Student	Teacher / School	Mentor / Worksite	Research Topic
Ms. Stacey Conley 3076 Tupelo Dr. Merced, CA 95348	Jesseca Burkhardt Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Christine Isborn University of California, Merced	Computer Aided Chemistry SEED 2
Ms. Lauris (Hue Man) Dang 1214 Chelsea Wy. Stockton, CA 95209	Han Nguyen Bear Creek High School 10555 Thornton Road, Stockton, CA 95207	Liang Xue University of the Pacific, Chemistry Dept.	Synthesis of Small Molecules for the Applications in DNA Damage SEED 1
Ms. Qi (Clare) Deng 6083 Carolina Circle Stockton, CA 95219	Robert Harper Lincoln High School 6844 Alexandria Place, Stockton, CA 95207	Andy Franz University of the Pacific, Chemistry Dept.	Organic Synthesis and Modeling SEED 2
Mr. Gilmarc Duldulao 91 Glen Ave. Oakland, CA 94611	Clifford Daigle Oakland Technical High School 4351 Broadway, Oakland, CA 94611	Yuzhu Zhang USDA Western Regional Research Center	Food allergen research SEED 1
Ms. Ixchel Gonzalez 4613 W. State, Hwy 140 Merced, CA 95341	Maria Rickard Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Son Nguyen University of California, Merced	Studies with Nanomaterials SEED 2
Ms. Emily Guerrero 2600 O'Hare Ave. San Pablo, CA 94806	Maddie Ligon Richmond High School 1250 23rd Street, Richmond, CA 94804	Toni Miao Chevron Energy Technology Company	Mid-IR Spectroscopy and Used Oil Analyses SEED 1
Mr. Yael Gutierrez 1938 Pine Ave San Pablo, CA 94806	Catherine Simpson Richmond High School 1250 23rd Street, Richmond, CA 94804	Gennady Borinshteyn Libby Laboratories, Inc.	Chemical and Microbial Analysis of Cosmetics SEED 1
Mr. Khang Ho 5334 Rayanna Dr. Stockton, CA 95212	Han Nguyen Bear Creek High School 10555 Thornton Road, Stockton, CA 95207	John Livesey University of the Pacific, Pharmacology Dept.	Protein Expression Studies related to cancer biology SEED 1
Mr. Xianzhi Hua 582 Arballo Dr. San Francisco, CA 94132	Jonathan Fong Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	Andrew Ichimura San Francisco State University	Optimizing TiO ₂ thin films for photocatalysis and water remediation. SEED 1

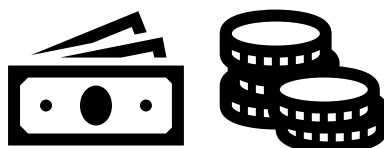
Student	Teacher / School	Mentor / Worksite	Research Topic
Ms. Priti Kaur 176 Garden Dr. Atwater, CA 95301	Maria Rickard Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Maria Zoghbi University of California, Merced	Studies on ABC transporters SEED 1
Mr. Henry Lee 824 Pacific Ave., Apt. H San Francisco, CA 94133	Bryan Marten Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	David Matucha Novvi, LLC	Bio-based Lubricants SEED 1
Ms. Shuzhen (Diana) Li 215 Kalmanovitz St. San Francisco, CA 94124	Paul Matsumoto Galileo Academy of Science and Technology 1150 Francisco St, San Francisco, CA 94109	Zheng-Hui He San Francisco State University	Understanding the Rus-1 Mutant Further SEED 2
Mr. Jonathan Llanas 1713 Kentucky St. Fairfield, CA 94533	Peter Smith Armijo High School 824 Washington Street, Fairfield CA 94533	Joanna Chiu University of California at Davis	Study interaction between circadian clock and the seasonal timer SEED 1
Ms. Ashley Lopez-Guerrero 1663 E. North Ave. Reedley, CA 93654	Joshua Justin Reedley High School 740 W. North Ave., Reedley, CA 93654	Rachel Naegele USDA San Joaquin Valley Ag Sciences Ctr	Virulence differences in Botrytis cinerea isolates SEED 1
Mr. Alex Lu 1592 E. Cypress Ave. Reedley, CA 93654	Kathryn Connolly Reedley High School 740 W. North Ave., Reedley, CA 93654	David Obenland USDA-ARS Water Management Research Lab	Pre- and Post-Harvest approaches to control Fresh Fruit Quality SEED 1
Ms. Huixin (Kelly) Ma 2355 47th Ave. San Francisco, CA 94116	Paul Matsumoto Galileo Academy of Science and Technology 1150 Francisco St, San Francisco, CA 94109	Misty Kuhn San Francisco State University, Dept. of Biology	Enzyme studies Regarding Staphylococcus Aureus SEED 2
Ms. Andrea Melendez 1101 26th St. Richmond, CA 94804	Catherine Simpson Richmond High School 1250 23rd Street, Richmond, CA 94804	Maryam Deldar Chevron Energy Technology Company	Training sample preparation for analyzing powder samples by X-Ray diffraction SEED 1

Student	Teacher / School	Mentor / Worksite	Research Topic
Mr. Enrique Mendez 182 W. Essex St. Stockton, CA 95204	William Lorentz A.A. Stagg High School 1621 Brookside Road, Stockton, CA 95207	Jianhua Ren University of the Pacific, Chemistry Dept.	Peptides and Mass Spectrometry SEED 1
Ms. Stefany Miranda Mendoza 445 2nd St. Richmond, CA 94801	Catherine Simpson Richmond High School 1250 23rd Street, Richmond, CA 94804	Rachel Mohler and Francisco Lopez-Linares Chevron Energy Technology Company	Field method for the petroleum industry SEED 1
Ms. Isabel Mitchell 4505 McGlothen Wy. San Pablo, CA 94806	Emerlyn Gatchalian Hercules High School 1323 Redwood Cr., San Pablo, CA 94806	Gerald Lee Chevron Global Downstream	Evaluate Specific Aspects of Lubricants/Lube Additive Performance Using Bench Test Apparatus SEED 1
Mr. Kaneen Muldrow 624 E. Clinton Ave. Atwater, CA 95301	Gary Graham Merced High School 205 E. Olive Ave., Merced, CA 95341	Hrant Hratchian University of California, Merced	Computer Aided Chemistry SEED 2
Mr. Nasier Muldrow 624 E. Clinton Ave. Atwater, CA 95301	Roger Johnson Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Liang Shi University of California, Merced	Computer Aided Chemistry SEED 1
Ms Alanda Nguyen 1924 Wellington Ct. Stockton, CA 95209	Han Nguyen Bear Creek High School 10555 Thornton Road, Stockton, CA 95207	O. David Sparkman University of the Pacific	Peptides and Mass Spectrometry SEED 1
Ms. April Nguyen 3920 Brookdale Ave. Oakland, CA 94619	Lawrence Evans Oakland Technical High School 4351 Broadway, Oakland, CA 94611	Jennifer Bragg USDA Western Regional Research Center	Genetic studies of plants (grasses) SEED 1
Ms. Ana Plascencia 352 South Parsons Ave., Apt. 2 Merced, CA 95341	Andrew Powers Golden Valley High School 2121 E. Childs Ave., Merced, CA 95341	Andy LiWang University of California, Merced	Biochemistry of Circadian Clock Protein or other protein system SEED 1
Ms. Isabel Prado-Torres 1822 Foxtrail Ct. Atwater, CA 95301	Maria Rickard Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Yue Jessica Wang University of California, Merced	Materials Chemistry: Hydrogels SEED 1

Student	Teacher / School	Mentor / Worksite	Research Topic
Ms. Ashley Ruiz 261 E. Alaska Ave. Apt. 87 Fairfield, CA 94533	Peter Smith Armijo High School 824 Washington Street, Fairfield CA 94533	Ken Forbes Univar Solutions (Nexeo)	Analytical Analysis of Petroleum Products SEED 1
Mr. Carlos Ruiz 262 E. Alaska Ave. Apt. 87 Fairfield, CA 94533	Peter Smith Armijo High School 824 Washington Street, Fairfield CA 94533	Ken Forbes Univar Solutions (Nexeo)	Analytical Analysis of Petroleum Products SEED 1
Ms. Giselle San Ramon 2071 Madera Ave. Dos Palos, CA 93620	Edwin Gibb Dos Palos High School 1701 E Blossom Ave, Dos Palos, CA 93620	Patti LiWang University of California, Merced	Protein Biochemistry SEED 1
Mr. L. Fernando Santos Aquino 1110 S. "I" St., Apt. 43 Reedley, CA 93654	Kathryn Connolly Reedley High School 740 W. North Ave., Reedley, CA 93654	Gary Banuelos USDA-ARS Water Management Research Lab	Evaluate biochemical and physical responses in pistachio trees irrigated with poor quality waters high in salinity, boron and selenium SEED 1
Mr. L. Felipe Santos Aquino 1110 S. "I" St., Apt. 43 Reedley, CA 93654	Kathryn Connolly Reedley High School 740 W. North Ave., Reedley, CA 93654	Spencer Walse USDA-ARS Water Management Research Lab	Characterizations of Pests and Chemical Residues on Harvested Fruit SEED 1
Ms. Emma Schumacher 21 Mercedes Way San Francisco, CA 94127	Bryan Marten Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	Andrew Ichimura San Francisco State University	Optimizing TiO ₂ thin films for photocatalysis and water remediation. SEED 1
Ms. Nancy Serrano 13732 E. Bulah Ave. Parlier, CA 93648	David Mendez Parlier Unified High School 900 S Newmark Ave, Parlier, CA 93648	Jianchi Chen USDA-ARS Water Management Research Lab	Detection and quantification of plant pathogens using PCR SEED 1
Mr. Donglin Song 38248 E. Kings Canyon Rd. Dunlap, CA 93621	Kathryn Connolly Reedley High School 740 W. North Ave., Reedley, CA 93654	Qiao-Hong Chen California State University, Fresno	Organic Synthesis Using Physical Organic Principles SEED 2

Student	Teacher / School	Mentor / Worksite	Research Topic
Ms. Ter Thao 214 Bernice Ave. Stockton, CA 95210	Han Nguyen Bear Creek High School 10555 Thornton Road, Stockton, CA 95207	Joseph Harrison University of the Pacific, Chemistry Dept.	Role of histone ubiquitylation in epigenetics SEED 1
Ms. Christine Tran 3094 Joshua Tree Circle Stockton, CA 95209	Han Nguyen Bear Creek High School 10555 Thornton Road, Stockton, CA 95207	Jerry Tsai University of the Pacific, Chemistry Dept.	Effects of Protein Sequence on Protein Structure Through Modern Molecular Biology Techniques SEED 2
Mr. Kiefer Deen Villacrusis 1951 Monument Ct. Atwater, CA 95301	Maria Rickard Buhach Colony High School 1800 Buhach Road, Atwater, CA 95301	Shahar Sukenik University of California, Merced	Development of high- throughput pipeline to measure solution effects on intrinsically disordered protein SEED 1
Ms. Sandra Wang 1318 Girard St. San Francisco, CA 94134	Jonathan Fong Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	Ron Haff USDA Western Regional Research Center	Sorting pistachio nuts (or other tree fruits) SEED 1
Mr. Ozaliqe Williams 1756 Dover Circle Suisun City, CA 94585	Tamara Moore Rodriguez High School 5000 Red Top Road, Fairfield, CA 94534	Barbara Blanco-Ulate University of California at Davis	Laboratory and field research focused on tomatoes, strawberries, and pistachio nuts SEED 2
Ms. Pei Qiao Xie 25 Britton St. San Francisco, CA 94134	Jonathan Fong Lowell High School 1101 Eucalyptus Dr. San Francisco, CA 94132	Don Tilley UC Berkeley, College of Chemistry	Inorganic and organometallic synthesis and studies SEED 2
Ms. Jenasis Yarrell 373 Bale Mill Rd. Merced, CA 95348	Charlene Gallardo El Capitan High School 100 Farmland Ave., Merced, CA 95340	Mourad Sadqi University of California, Merced	Toward bio-engineered sensors SEED 1

2019 Project SEED Donors



A big thank-you to the following sponsors:

- Bio-Rad Laboratories
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- University of California, Merced

2019 Project SEED Student Worksite Map

