

Project SEED

SUMMER EXPERIENCE FOR THE ECONOMICALLY DISADVANTAGED



ALAN NIXON
Founder

2014 COORDINATORS – CA SECTION ACS



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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 2014

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 (<http://aspe.hhs.gov/poverty>). 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.

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. **Stipends and Duration of the Program** – Summer I and II students will receive a competitive stipend with the minimum for each program determined by the Project SEED Committee of the ACS. **For 2014, the Summer I and II stipends are \$2,500 and \$3,000, respectively.** The costs of supplies or laboratory materials cannot be deducted from student stipends. Both programs expect at least 8 weeks of participation at approximately 40 hours per week.
4. **Stipend 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.

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. **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 disbursement of the 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 fellowship 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 2014

Student Name	Research Topic	Teacher	School	Mentor / Worksite
Alcaraz-Guzman, Leonor	Protein Biochemistry	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Andy LiWang University of California, Merced 5200 N. Lake Road Merced, CA 95343-5001
Alvarez, Alfredo	Agricultural Crops and Disease	Mr. R. Browne	Dinuba High School 340 E. Kern Street Dinuba, CA 93618	Dr. Jianchi Chen USDA-ARS, Water Management Research Lab 9611 S. Riverbend Ave. Parlier, CA 93648
Avila, Yannett	Peptides and Mass Spectroscopy	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. O. David Sparkman University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton, CA 95212
Chan, Brandon	Chemistry of Contaminated Soils	Ms. K. Rotter	Lowell High School 1101 Eucalyptus Drive San Francisco, CA 94132	Dr. Patrick Morrison Smith-Emery Co. P.O. Box 880550 San Francisco, CA 94188-0550
Chavez Montes, Josue	Single Stranded DNA	Mr. J. Robertson	Lionel Wilson Preparatory Academy 400 105th Avenue Oakland, CA 94603	Dr. Marlin Halim CSU East Bay, Department of Chemistry & Biochemistry 25800 Carlos Bee Blvd. Hayward, CA 94542
Chung, Timothy*	Molecular Graphics and Computation Facility(MGCF), Development of applications and software to aid in the research of experimental chemists	Mr. P. Matsumoto	Galileo Academy of Science & Technology 1150 Francisco Street San Francisco, CA 94109	Dr. Olayinka Olatunji-Ojo University of California, Berkeley College of Chemistry 177 Tan Hall Berkeley, CA 94720
Dimas, Carina*	Analyze Aqueous Standard Solutions for Different Ion Chromatography Instruments	Mr. K. Dunn	Richmond High School 1250 23rd Street Richmond, CA 94804	Ms. Yaya Zhu Chevron Energy Technology Company 100 Chevron Way, Room 50-1129 Richmond,, CA 94802

*Project SEED II Student

ACS CALIFORNIA SECTION PROJECT SEED 2014

Student Name	Research Topic	Teacher	School	Mentor / Worksite
Dutra, Kevin	Cadmium Telluride Synthesis Parameters for Nanowires	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Erik Menke University of California, Merced 5200 N. Lake Road Merced, CA 95343
Ealey, Rajada	Effects of Protein Sequence on Protein Structure Through Modern Molecular Biology Techniques	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Jerry Tsai University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton, CA 95212
Espinoza, Hidelisa	Effects of Protein Sequence on Protein Structure Through Modern Molecular Biology Techniques	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Jerry Tsai University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton, CA 95212
Garcia, Christian	Nutrient Effects on Plants	Mr. D. Deibert	Reedley High School 675 W. Manning Avenue Reedley, CA 93654	Dr. Gary Banuelos Dr. Tiziana Centofanti USDA-ARS Water Management Research Lab 9611 S. Riverbend Ave. Parlier, CA 93648
Gonzalez, Carmela	Evaluation of Wear Inhibitors	Ms. D. Melis	Richmond High School 1250 23rd Street Richmond, CA 94804	Mr. Ken D. Nelson Lea Cleary Chevron Energy Technology Company 100 Chevron Way Richmond, CA 94802
Gutierrez, Claudia*	Mass Spectroscopy and Crude Oil Composition	Ms. D. Melis	Richmond High School 1250 23rd Street Richmond, CA 94804	Dr. Michael Cheng Chevron ETC 100 Chevron Way, Room 50-1311 Richmond,, CA 94802
Guzman Parra, Ramiro*	FTIR History, Theory and Use in a Chemical Distribution Laboratory	Ms. L. Rockwell	Armijo High School 824 Washington Street Fairfield, CA 94533	Dr. Ken Forbes Nexeo Solutions, LLC 2461 Crocker Circle Fairfield, , CA 94533

*Project SEED II Student

ACS CALIFORNIA SECTION PROJECT SEED 2014

Student Name	Research Topic	Teacher	School	Mentor / Worksite
Her, So	Further studies on Ambient Brochosomes and Is the data Meaningful?	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Mark Brunell Dr. Ryan Moffet University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton, CA 95212
Hernandez, Andrea	Does Component Blending Order Have an Effect on Bench Test Performance?	Ms. D. Melis	Richmond High School 1250 23rd Street Richmond, CA 94804	Mr. Michael J Adams Chevron Oronite Company 100 Chevron Way, 50-1226 Richmond, CA 94802
Hill, Denisha*	Peptides and Mass Spectroscopy	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Jianhua Ren University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton,, CA 95211
Huynh, Duong	Evaluate Specific Aspects of Lubricants/Lube Additive Performance Using Bench Test Apparatus	Mr. M. Piccillo	Oakland High School 1023 MacArthur Blvd. Oakland, CA 94610	Mr. Mike Long Chevron Products Company 100 Chevron Way, 71-7247 Richmond, CA 94802
Huynh, Van*	Mid-IR Spectroscopy and Used Oil Analyses	Mr. M. Piccillo	Oakland High School 1023 MacArthur Blvd. Oakland, CA 94610	Ms. Toni Miao Chevron Energy Technology Company 100 Chevron Way, Room 50-1309 Richmond,, CA 94802
Kim, Hannah	Laser Development	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Jay Sharping University of California, Merced 5200 N. Lake Road Merced, CA 95343

*Project SEED II Student

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Student Name	Research Topic	Teacher	School	Mentor / Worksite
Kong, Carmen	Synthesis of New Materials: Thin Films	Mr. P. Matsumoto	Galileo Academy of Science & Technology 1150 Francisco Street San Francisco, CA 94109	Dr. Andrew Ichimura San Francisco State University, Department of Chemistry and Biochemistry 1600 Holloway Ave. San Francisco, CA 94132
Law, Jennifer	Research on Viral RNAs	Ms. C. Chan	Chinese Christian High School 1501 Harbor Bay Parkway Alameda, CA 94502	Professor Chul Kim CSU East Bay, Department of Chemistry & Biochemistry 25800 Carlos Bee Blvd. Hayward, CA 94542
Ledezma, Daisy	Measuring Particles in Lubricants	Ms. D. Melis	Richmond High School 1250 23rd Street Richmond, CA 94804	Dr. Kaustav Chaudhuri Chevron Oronite Company 100 Chevron Way, 50-1133 Richmond, CA 94802
Lenhardt, Joshua*	Generation of Recombinant Protein Fragments From Bacteria	Mr. L. Evans	Oakland Technical High School 4357 Broadway Oakland, CA 94609	Dr. Luisa Cheng USDA Western Regional Research Center, Agricultural Research Service 800 Buchanan Street Albany, CA 94710
Ly, Carter	Design and Synthesis of Enzyme Inhibitors	Mr. M. Piccillo	Oakland High School 1023 MacArthur Blvd. Oakland, CA 94610	Dr. Weiming Wu Kristen Decker San Francisco State University 1600 Holloway Avenue San Francisco, CA 94132
Monroe, Tosha*	Further studies on Ambient Brochosomes	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Ryan Moffet University of the Pacific, Chemistry Department 3601 Pacific Avenue Stockton, CA 95211
Nand, Sereena	Further Studies of Vascular Effects of Polyphenols in Rat Aorta	Mr. J. Steiner	A. A. Stagg High School 1621 Brookside Road Stockton, CA 95207	Dr. Roshanak Rahimian University of the Pacific, School of Pharmacy and Health Sciences 3601 Pacific Avenue Stockton, CA 95212

*Project SEED II Student

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Student Name	Research Topic	Teacher	School	Mentor / Worksite
Ng, Tsz Yan (Nancy)*	Tribological Performance Studies Using the Mini-Traction Machine and Various Lube Oil Additives	Mr. J. Rendelman	Kennedy High School 4300 Cutting Blvd. Richmond, CA 94804	Mr. Ken D. Nelson Jonathan Moore Chevron Energy Technology Company 100 Chevron Way Richmond, CA 94802
Ngo Ho, Valerie	What Makes an Excellent Protein Bar?	Mr. M. Piccillo	Oakland High School 1023 MacArthur Blvd. Oakland, CA 94610	Ms. Elaine White Creative Energy Food 9957 Medford Ave Oakland, CA 94603
Pham-Vu, Thao	Purification of Recombinant Mutant Milk Protein	Ms. K. Haber	Berkeley High School 1980 Allston Way Berkeley, CA 94704	Dr. Yuzhu Zhang USDA, ARS, WRRRC 800 Buchanan Street Albany, CA 94710
Renteria, Rodrigo	Characterizations of Pests and Chemical Residues on Harvested Fruit	Ms. A. Pang	Parlier High School 601 Third Street Parlier, CA 93648	Dr. Spencer Walse USDA-ARS Water Management Research Lab 9611 S. Riverbend Ave. Parlier, CA 93648
Rodriguez, Sylvia	Infected vs. Healthy Tomatoes	Ms. A. Pang	Parlier High School 601 Third Street Parlier, CA 93648	Dr. Chris Wallis USDA-ARS Water Management Research Lab 9611 S. Riverbend Ave. Parlier, CA 93648
Serrano, Abigail	Surfactant Concentration and Stability Over Time	Mr. D. Pacheco	Kennedy High School 4300 Cutting Blvd. Richmond, CA 94804	Dr. Andrew Thomas Madeleine Sessions Chevron Oronite Company LLC 100 Chevron Way, 71-7638 Richmond, CA 94802
Shevtchenko, Peter*	Automating Tests in a Physical Characterization Lab	Mr. R. Fabini	El Cerrito High School 540 Ashbury Avenue El Cerrito, CA 94530	Dr. Tao Wei Chevron Energy Technology Company 100 Chevron Way, 10-2506 Richmond, CA 94802

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ACS CALIFORNIA SECTION PROJECT SEED 2014

Student Name	Research Topic	Teacher	School	Mentor / Worksite
Tadeo, Eriberto	Correlation of Different Cell Wall Types With Genotype Phenotyping a Collection of Brachypodium T-DNA Insertional Mutagenesis Lines	Mr. J. Robertson	Lionel Wilson Preparatory Academy 400 105th Avenue Oakland, CA 94603	Dr. Sean Gordon USDA, ARS, WRRRC 800 Buchanan Street Albany, CA 94710
Tat, An	Chemistry in a Cosmetics Company	Mr. L. Evans	Oakland Technical High School 4351 Broadway Oakland, CA 94611	Dr. Gennady Borinshteyn Libby Laboratories, Inc. 1700 6th Street Berkeley, CA 94710
Tso, Jade*	Further Chemical Study of Fruit	Mr. T. Wilder	Franklin High School 6400 Whitelock Parkway Elk Grove, CA 95757	Dr. Betty Jane Burri Western Human Nutrition Research Center 430 W. Health Sciences Drive Davis, CA 95616
Vang, Amy*	Protein Biochemistry	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Patti LiWang University of California, Merced, Science and Engineering Bldg. 5200 N. Lake Road, Merced, CA 95343-5001
Vasquez-Guzman, Martha	Molecular Motors	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Jing Xu Kai Lor University of California, Merced 5200 N. Lake Road Merced, CA 95343
Willis, James	Computer Aided Chemistry	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Hrant Hratchian University of California, Merced 5200 N. Lake Road Merced, CA 95343
Xie, Laili (Lily)	Synthesis of New Materials: Thin Films	Ms. J. Knecht	Abraham Lincoln High School 2162 24th Avenue San Francisco, CA 94116	Dr. Andrew Ichimura San Francisco State University, Department of Chemistry and Biochemistry 1600 Holloway Ave. San Francisco, CA 94132

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Xie, Silvia*	Engineering Enzymes for Biomass Degradation Toward Biofuels	Mr. L. Evans	Oakland Technical High School 4351 Broadway Oakland, CA 94611	Dr. Sarah Batt Throne USDA, ARS, WRRRC 800 Buchanan Street Albany, CA 94710
Xiong, Mary	Developing Techniques to Aid in Drug Discovery	Ms. S. Cool	Golden Valley High School 2121 E. Childs Avenue Merced, CA 95341	Dr. Matthew Meyer University of California, Merced 5200 N. Lake Road Merced, CA 95343
Xu, Li	Understanding the rus1-1 Mutant Is Different From the Wildtype	Mr. P. Matsumoto	Galileo Academy of Science & Technology 1150 Francisco Street San Francisco, CA 94109	Dr. Zheng-Hui He San Francisco State University, Department of Biology 1600 Holloway Ave. San Francisco, CA 94132
Yu, Jia	Analysis of Commercial products or a Comparative Study of Microbial Enumeration Techniques	Mr. J. Coakley	College Preparatory School 6100 Broadway Oakland, CA 94618	Dr. Florence Wu Dr. FeiFei Han Aemtek, Inc. 46309 Warm Springs Blvd. Fremont, CA 94539
Zaragoza, Melissa*	Sorting Pistachio Nuts: Problems and Solutions	Ms. D. Melis	Richmond High School 1250 23rd Street Richmond, CA 94804	Dr. Ron Haff Western Regional Research Center, Agricultural Research Service 800 Buchanan Street Albany, CA 94710

*Project SEED II Student

\$ 2014 SEED Contributors \$

- **Bio-Rad Laboratories**
- **Chevron Companies**
- **Cortopassi Family Foundation**
- **California Section ACS**
- **National ACS**
- **University of California, Merced**
- **California Section ACS Members**

2014 Project SEED Program



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