Annual Meeting of the Pacific Division of AAAS
including the
Northwest and Southwest Regions of Sigma Xi, The Scientific Research Honor Society
American Association of Colleges of Pharmacy
CALIFORNIA STATE POLYTECHNIC UNIVERSITY (CAL POLY)
POMONA • CALIFORNIA
12 – 15 June 2018
*From Atoms to Applications*

The AAAS, Pacific Division is pleased to announce its 99th annual meeting this June at the California State Polytechnic University (Cal Poly), Pomona, California. The theme of the meeting is *From Atoms to Applications*. Cosponsoring the meeting will be the the Northwest and Southwest Regions of Sigma Xi, the Scientific Research Honor Society and the American Association of Colleges of Pharmacy.

The Division’s Site Committee, headed by Division President Dr. Vilupanur Ravi (Cal Poly Pomona), as well as members of the Division’s Executive Committee and Council have been hard at work preparing a program that will be of great interest and of the highest quality.

All scientists, including professors, teachers, students, and others, are invited to present the results of their research either orally or as posters at this meeting. Registrants for the meeting may attend all of the technical sessions as well as participate in the many other activities that are being planned. Some activities, notably field trips and select workshops, require advance registration and payment of additional fees.

This Newsletter contains, among other things, a preliminary description of the scientific program, a call for abstracts, directions for preparation of abstracts, and information about registration, housing, transportation, special events, field trips, and symposia.

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contact Roger Christianson by e-mail: rehristi@sou.edu
or by phone: 541-552-6747.

CAL POLY POMONA

Brief History
Cal Poly Pomona opened on Sept. 15, 1938 as the Voorhis Unit of the California State Polytechnic College in San Luis Obispo, California. Originally housed on the 150-acre San Dimas site of the former Voorhis School for Boys, Cal Poly Pomona’s first class had an all-male enrollment of 110 students. It wasn’t until 24 years later, in 1961, that 329 women joined the student body for the institution’s first integrated, male and female class. But that’s getting a bit ahead of our story. In 1949, breakfast cereal magnate W.K. Kellogg deeded 813 acres of land located three miles south of the Voorhis campus to the state of California. This land was then developed into the current campus, which opened in 1956 when 508 students and 44 faculty and staff moved from San Dimas to the new “Kellogg campus.” Ten years later, the Kellogg campus separated from the San Luis Obispo campus, becoming the California State Polytechnic College, Kellogg Campus in 1966. University status was granted in 1972, at which time the name of the campus was changed to California State Polytechnic University, Pomona. Today, the university is part of the 23-campus California State University system. Cal Poly Pomona has about 24,000 students and 2,600 faculty and staff.

The Kellogg Connection
Cal Poly was founded on a legacy of giving, with the W.K. Kellogg Foundation and its namesake founder being the driving forces. In 1925, long before Cal Poly was opened, Kellogg established his winter residence and ranch in the rolling hills of what is now the northern edge of the campus. In 1926, Kellogg’s West Coast Retreat, the Kellogg House, was built at a cost of $150,000. The home, which sits atop a tree-shrouded hill on the northern edge of campus and offers sweeping views and rich architectural acccents, was designed

1The following information about Cal Poly Pomona was excerpted from these Cal Poly web pages:
www.cpp.edu/~aboutcpp/heritage/index.shtml
www.cpp.edu/~aboutcpp/heritage/kellogg-connection.shtml
www.cpp.edu/~aboutcpp/heritage/kellogg-house-pomona.shtml
www.cpp.edu/~aboutcpp/heritage/kellogg-connection.shtml
www.cpp.edu/~aboutcpp/why-epc/index.shtml

see HISTORY, page 4
Report on the AAAS Annual Meeting
by the Pacific Division Executive Director

The 184th meeting of AAAS was held this past February in Austin, Texas. Although the meeting officially opened on the evening of Thursday, 14 February, a flurry of meetings and other activities began the preceding day. The first official activity for your Executive Director was to attend part of the AAAS Board of Directors meeting in order to report on the Division's activities during the preceding year and also to talk about planned activities for the present year. AAAS currently has three active divisions, the Arctic, represented by Dr. Larry Duffy (University of Alaska, Fairbanks), the Caribbean, represented by Dr. Carlos A. Torres-Ramos (University of Puerto Rico) and myself. Later in the afternoon, the three of us made our reports, which were well received by Board members.

The official opening event of the meeting was a very interesting talk, presented by AAAS President Dr. Susan Hockfield (President Emerita and Professor of Neuroscience, Massachusetts Institute of Technology). In a departure from previous years, the opening reception that followed Dr. Hockfield’s talk was sited in the exhibit hall, giving attendees the chance to get a preview look at all that was offered by the various exhibitors early in the meeting. The Pacific Division, of course, was present in the exhibit hall at the Divisions Booth, where Mrs. Angie Christianson, see DIVISION ACTIVITIES, page 5

STUDENTS TAKE NOTE!

The Pacific Division has a website for students, called STUDENTS ONLY! Its address is pacific.aaas.org/Students/Students.html. On it you will find links to information about
• the AAAS, Pacific Division Alan E. Levi- ton Student Research Awards
• travel grants to help support students traveling to present their research at annual meetings of the Pacific Division
• the Pacific Division student oral and poster presentation awards program
• winners of previous student presenta- tion competitions
• additional news of interest to students

Research grants of up to $750 are available to students residing in the Pacific Division’s geographical boundaries. But you must apply for these by 1 May 2018! Information can be found at pacific.aaas.org/Stu- dents/StudentResearchGrants.html.

Travel grants to help support student travel to the annual meeting are available......but you must apply no later than 1 May 2018! Information can be found at pacific.aaas.org/Students/TravelGrants2010.html. Up to ten grants are available this year and they will be awarded based on need.

Awards of Excellence are given to stu- dents who make outstanding research presentations at the Pacific Division’s annual meetings. Awards include money and certificates. But you must present your own research in order to be eligible to receive one! Information can be found at pacific.aaas.org/Students/ StudentAwards.html.
by renowned architect Myron Hunt, whose projects included the Pasadena Rose Bowl and the Huntington Library. Charles Gibbs Adams, a distinguished landscape architect who worked on the Hearst Castle gardens in San Simeon, California, designed the lush and colorful surroundings at Kellogg House.

Although the home is 8,777 square feet, it evokes a more intimate feel because of its many rooms. Kellogg’s family and friends often visited the house. The extra rooms allowed Kellogg House to serve as lodging for the Army during World War II.

The architectural décor is typical of a ranch-style house, but also features much finer details, such as the ceiling beams in the dining room where Kellogg’s initials are worked into the pattern. Additionally, the pipes from an organ were cleverly built into the basement, thus creating more space in the living area without sacrificing Kellogg’s beloved musical instrument.

The Kellogg House was a magnet for celebrities of their day, including former President Ronald Reagan, Walt Disney, Will Rogers, Rudolph Valentino, Gary Cooper and Charles Lindbergh. Kellogg and his famous guests would enjoy walking around the grounds and visiting the Arabian horses, which Kellogg occasionally lent to movie studios for use in movies.

Cal Poly Pomona has carefully preserved many features of Kellogg’s hilltop Arabian horse ranch, including his mansion, rose gardens, avocado groves, stables and, of course, the award-winning Kellogg Arabian horses, featured in horse shows on campus. Kellogg House itself hasn’t changed much since 1926. Most of the furniture and décor that adorn the house are original pieces once owned by Kellogg and his family.

In 1949, two years before Kellogg’s death, the foundation that bears his name deeded the land to California’s state college system with the proviso that the land be used for educational purposes and the traditional horse shows that Kellogg launched in 1926 would continue. The gift reflected Kellogg’s long-held love for horses and belief that “education offers the greatest opportunity for really improving one generation over another.” Kellogg’s former winter residence and horse ranch eventually formed the core of the Cal Poly campus when in 1956 students, faculty and staff moved from the San Dimas campus to the Kellogg campus.

Through the years, the university and its students have benefited from the W.K. Kellogg Foundation’s generosity, including funds to establish scholarships and build the W.K. Kellogg Arabian Horse Center.

In 2010, the foundation bearing Kellogg’s name again provided a transformational gift to the university through a record-breaking challenge grant. The $42 million gift was a record cash gift to the CSU and came at a propitious time for the university, coinciding with the downturn in the economy and the launch of the university’s ambitious $150 million comprehensive fundraising campaign.

Sterling K. Speirn, the foundation’s president and CEO, explained, “[Kellogg’s] vision of ‘investing in people’ has translated into the foundation’s fundamental belief that access to a high-quality education is vital to enhancing the lives of vulnerable youth.” Cal Poly Pomona is built on the same fundamental belief. While the university’s programs are ranked among the nation’s best, it continues to provide affordable and accessible educational opportunities for generations of students to come. Cal Poly has long been the gateway to opportunity for generations of Californians. Through Kellogg’s foresight and generosity, the W.K. Kellogg Foundation is helping to ensure that the gateway remains open.

**Cal Poly Today**

Cal Poly Pomona is one of only two polytechnic universities of the 23 California State University campuses and 11 in the nation. The classical meaning of polytechnic is “skilled in many arts.” At Cal Poly Pomona, it means more than that. On this campus, technology and hands-on learning experiences are woven into academic programs, bringing textbook concepts to life in a technologically advanced and multicultural world. Students also experience a broad-based education through the general education program. All of the academic disciplines embrace the teaching of theory through application. A multi-faceted approach to problem solving is taken, looking at a situation from all possible angles. A biology student might use digital image analysis to monitor the growth of a virus. An urban and regional planning student might use GIS (geographic information systems) to chart the shrinking of low-income housing in an urban area. This focus on actions and solutions, with students provided opportunities to apply their knowledge in hands-on projects, research collaborations, and valuable internship and service-learning programs, turns them into skilled workers, integrative problem solvers and well-balanced leaders.

In addition, the history and geography of Cal Poly Pomona are unlike any other university in the region. Nowhere else can students ride an Arabian horse, practice on a Steinway piano, collaborate on a new product, and help build a rocket. This is a polytechnic education. This is Cal Poly Pomona.
Pacific Division Executive Assistant, was pleased to talk with attendees about all things divisions, especially the Division’s upcoming meeting at Cal Poly Pomona this June. We also gave away out of the booth 182 books of various titles from the Division’s publications program.

Starting Friday, the AAAS meeting included a full three and a half days of technical sessions as well as a variety of sectional and other meetings, lectures, and events. Plenary lectures included, in addition to Dr. Hockfield’s lecture, *The International Space Station: A Laboratory in Space* by Ellen Ochoa (Director, Johnson Space Center); *The Chan Zuckerberg Initiative: Accelerating Science* by Cori Bargmann (President, Chan Zuckerberg Science); *When Facts Are Not Enough* by Katharine Hayhoe (Professor, Texas Tech University); and to round out the series, *Punctuated Equilibrium Meets Cancer: Big Promise Requires Big Change* by Joseph R. Biden, Jr. (47th Vice President of the United States and Co-Chair, Board of Directors, Biden Cancer Initiative).

Topical lectures included *The Land of Open Graves: Necroviolence and the Politics of Migrant Death in the Arizona Desert* by Jason De León (University of Michigan, Ann Arbor); *Music for Brain Health* by Nina Kraus (Northwestern University); *Scientific Solutions for the Opioid Crisis* by Nora Volkow (National Institute on Drug Abuse National Institutes of Health, Bethesda, MD); *Future of Science in Africa: Building a Global Coalition of African Research and Innovation (CARI)*, by Thomas Maina Kariuki (African Academy of Sciences, Nairobi, Kenya); *Why Judges are More Receptive to Forensic Science Than They Should Be* by Jed Rakoff (U.S. District Court for the Southern District of New York, New York City); *Imperial Science: Victorian Cable Telegraphy and the Making of ‘Maxwell’s Equations’* by Bruce Hunt (University of Texas, Austin); *The Unique Symbiosis of Learning, Remembering, and Forgetting that Characterizes Human Memory* by Robert A. Bjork (University of California, Los Angeles); *Immune Checkpoint Blockade in Cancer Therapy: New Insights and Opportunities, and Prospects for Cures* by James P. Allison (University of Texas M.D. Anderson Cancer Center, Houston); and *Sexual Harassment: What It Means and What We Can Do About It* by Meg Urry (Yale University).

Poster presentations took a new turn at the annual meeting this year with the use of ePoster boards. The ePosters were displayed electronically on 70-inch LCD displays in one of seven ePoster pods. Student presenters were each allowed 7 minutes in which to present their poster and answer questions from judges and others while general presenters were each allowed 5 minutes for both the presentation and the questions.

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The annual meeting’s Saturday and Sunday Family Days is always a fun time in the exhibit hall as families from all over descend on the meeting in order to explore many science-related topics that are geared especially for children. This year was no exception, as booms and pops, virtual reality, handwriting, simple electronic circuitry, and popcorn, among other things, kept many, many children and their parents involved, intrigued, and coming back for more. A collage of images from Family Days appears on page 7 of this Newsletter.

**Report on AAAS Council Meeting**

Sunday morning at the annual meeting is always, for Council members, devoted to the annual Coun-
council meeting. Once again, an earlier video conference in January allowed Council members to concentrate their attention more fully on action items before the Council.

Margaret Hamburg, AAAS President-Elect and Chair of the Committee on Council Affairs (CCA) brought forward the following to the Council for consideration:

1. Name change request from Section E, Geology and Geography.

The leadership of Section E requested a change in name for the section from Geology and Geography to Geosciences and Geography, which stirred considerable discussion as to what affect(s) this change may have on other allied sections. After considerable discussion, the motion to change the name was tabled pending discussion with other sections to ascertain what affect, if any, the change might have on them.

2. Bylaws changes from the Executive Office relating to the current requirement of Affiliates to identify and send a representative to each annual meeting.

The motion was to soften the language in the bylaws from “must do” to “may,” including removing exceptions that are no longer needed with this new language. The motion also extended the interval at which the Executive Officer communicates with Affiliates to assure that they wish to continue in their Affiliate status from three years to five years. The motion passed unanimously.

Article I. Membership and Affiliation. Section 3 Affiliates now reads:

Paragraph 1: “Each Affiliate may enroll in from one to generally not more than five Sections of the Association, subject to the approval of the respective Section Committees. Each Affiliate may appoint a representative to each Section in which it is enrolled; such representatives should be Members of the Association.

Paragraph 2: deleted

Paragraph 3: “At five-year intervals, the Executive Officer shall communicate with all Affiliates to assure that they wish to continue their affiliation. If an Affiliate replies in the negative or fails to reply in due course, disaffiliation shall be automatic.

Paragraph 4: unchanged

Article III. Sections Section 2. Section Committees now reads:

(a) Function: unchanged

(b) Meetings: unchanged

(c) Membership: Last sentence deleted

(e) Vacancies: “In the event of a vacancy in the position of retiring Section Chair, the Section Chair shall
represent the Section Committee at the next Council meeting. In the event of a vacancy in the position of Section Chair, Section Chair-Elect, Section Secretary or member-at-large, the Steering Group (see Section 3 of this Article) shall appoint a replacement for the remainder of the unexpired term. [sentence relating to Affiliates deleted] Vacancies shall be filled, through the appropriate means, within a period of ninety days.

3. Requests for Affiliation from the following organizations were each approved by unanimous vote of the Council.
   - AcademyHealth
   - Association for Chemoreception Sciences (AChemS)
   - International Society on Thrombosis and Haemostasis (ISTH)
   - National Council on Family Relations (NCFR)
   - Philosophy of Science Association (PSA)
   - International Society for the Systems Sciences (ISSS)

The podium was then turned over to Edward Aboufadel, Chair of the Subcommittee on Fellows, at which time he reported on progress of the subcommittee in developing procedures for revocation of Fellow status, with procedures, assuring members that the subcommittee would have a recommendation for the Council to consider at its 2019 meeting.

Following the CCA reports, the meeting was opened to new business. The primary issue brought up was initiated by the Council representative from Section T (Information, Computing, and Communication), followed by the Council representative from Section G (Biological Sciences) and several other Council members. Questions/comments included:
   - How is the program selected?
   - Are sections really involved?
   - There needs to be better transparency in the process.
   - There appears to be a gap between what a section passes forward and what is actually accepted.
   - Sections would like information about proposals that are not accepted into the program so they can make better decisions in the future.

This actually isn’t the first time that this reporter has heard several of these questions and/or comments. Hopefully, they will be more directly dealt with in the near future.

The Council meeting was adjourned at 11:10 a.m., which allowed members some extra time to enjoy the annual meeting!

— Roger Christianson
Executive Director
AAAS, Pacific Division

ANNUAL MEETING, from page 1

are sponsoring sessions at the meeting. The names and contact information for section chairs sponsoring sessions at this meeting are found starting on page 31 of this Newsletter.

SOCIETIES AND PACIFIC DIVISION SECTIONS SPONSORING SESSIONS AT THE POMONA MEETING

Sigma Xi, The Scientific Research Honor Society
The American Association of Pharmacy Colleges
Agriculture, Food and Renewable Resources
Anthropology and Archaeology
Atmospheric and Hydrospheric Sciences
Cell and Molecular Biology
   (including medical and dental research in these areas)
Chemistry and Biochemistry
Computer and Information Sciences
Earth Sciences
Ecology, Environmental Sciences and Sustainability
Education (Science and Technology)
Engineering, Technology and Applied Sciences
Evolution, Organismal Biology and Biodiversity
General and Interdisciplinary
History and Philosophy of Science
Materials Science
Mathematics
Physics
Psychology
Science and the Arts and Humanities
Social, Economic and Political Sciences
   (including health services)

REGISTRATION

All persons planning to attend the meeting should use the Advance Registration Form on page 35 in this Newsletter to pre-register in order to receive the best registration rate. On-site registration will be available, but with higher fees. Advance registration fees (through 27 April) for the full meeting are $110.00 for professionals; $55.00 for retirees/emeritus, current post-docs, unemployed individuals and current students1; and $35.00 for non-presenting spouses/family members of registrants. K–12 and community college teachers are encouraged to attend the meeting for a reduced professional registration fee of $55.00. One-day professional registration for non-presenters/planners is available for $80.00. Presenters and program organizers registering in the professional category may purchase a full-meeting professional registration at the discounted, one-day rate of $80.00. To be

1Students receive a one-year student membership in AAAS, which consists of all member benefits including on-line access to Science magazine, with payment of their registration fee for this meeting. Current student members will receive a one-year extension to their membership. A completed membership form (see page 37 of this Newsletter) must accompany the registration form.
eligible for this discount, the individual must have submitted an abstract for presentation at the meeting that has either been approved or is pending approval or be listed as an organizer or co-organizer of a program or be leading a field trip at the time of registration. Be sure to include this information in the appropriate space on your registration form. After 27 April, higher registration fees will be charged, as indicated on the Advance Registration Form. Beyond 25 May, on-site registration fees will be charged for both pre-meeting and on-site registrations. On-site registration fees for the full meeting are: professional, $140.00; program planners/presenters, $100.00; K–12, community college teachers, post-docs, students, retirees/emeritus, and unemployed $70.00; non-presenting/planning spouses and/or family members, $45.00. One-day on-site professional registration for non-presenters/planners will be $100.00. Note that If you attend more than one day of the meeting, you must pay the full registration fee.

The first ten K–12 and community college instructors that register in advance by 25 May for this meeting will receive, upon request, a $75.00 stipend to help defray their expenses to attend the meeting. The stipend is not available to teachers who register on-site. Note that to receive the stipend, teachers must check the appropriate box on the Advance Registration Form.

Students have the opportunity to apply for travel awards to help defray their costs for the meeting. See page 3 of this Newsletter for additional information.

Field trips: Pre-registration for all field trips is required due to limited seating in the vehicles and the need to inform some destinations of the number of people arriving. If you are interested in one or more of the excursions, it is recommended that you register early. At least one member of a family group requesting field trip reservations must be a paid meeting registrant. Participants who are not registered for the meeting will be charged a one-time $10 field trip registration fee in addition to the fee for the field trip.

Advance Registration Forms and accompanying payments may be mailed to AAAS, Pacific Division, Southern Oregon University, 1250 Siskiyou Blvd., Ashland, OR 97520. Alternatively, and with a credit card, you may phone (541-552-6869) or fax the information (541-552-8457 – a dedicated fax line).

PLEASE NOTE: Requests for refunds must be in writing and received in the Pacific Division office no later than 3 June 2018. No refunds will be granted beyond this date. A $15 handling fee will be applied. An additional 3.5% deduction will be applied to the total amount for credit card refunds.

ON-CAMPUS HOUSING

Two types of accommodations are available on the Cal Poly campus for attendees of this meeting. Hotel-type rooms are available at the Kellogg West Conference Center and Hotel.

SOUTHERN OREGON UNIVERSITY
to host Division’s 2019 Annual Meeting

Members of the Pacific Division Council have unanimously approved acceptance of an invitation from Southern Oregon University President Linda Schott to hold the Division’s 2019 meeting on the SOU campus from 17 – 21 June. Symposium and workshop proposals are now being accepted (see page 33 of this Newsletter) for this meeting. In addition, a reprise of the Science Art exhibit held the last time the Division met on the SOU campus is being planned, as are a variety of field trips into the Southern Oregon region. Updated information will be posted to the Division’s web pages later in the summer.

TEACHERS K – 14

The first ten K – 14 teachers to register in advance (meeting registration received no later than 25 May 2018) for this meeting will receive, upon request, a $75 stipend to help defray their costs to attend! This stipend is not available to those who register on-site for the meeting. If requested, a $75 check will be included with the registration materials you pick up at the Pacific Division Meeting Registration Center.

Judges Sought for Student Presentations at the Pomona Meeting this coming June

Student presentation judges are being sought for both oral and poster presentations at the Division’s annual meeting. Previous experience evaluating student presentations is desirable for individuals who haven’t previously judged at a Pacific Division meeting. Judges must be available for an organizing meeting Tuesday evening, 12 June, and be available to judge presentations Wednesday and/or Thursday, 13 and 14 June. For additional information, please contact Dr. Roger Christianson, 541-552-6747 or rchristi@sou.edu. If you are interested in helping with this very important aspect of the annual meeting, be sure to mark the appropriate box on the Advance Registration Form (on page 35 of this Newsletter) and you will be sent an application.
In addition, a limited number of dorm rooms are available in the student dorms on campus.

**Kellogg West Conference Center and Hotel**

Kellogg West on the Cal Poly campus operates very much like a hotel. Rooms include:

- Hot breakfast buffet
- High speed wireless internet access
- Daily newspaper
- Fitness room access
- Pool and spa access
- In-room refrigerators
- 100% Smoke free rooms
- Flat screen HD TV
- Coffee/tea maker
- Iron, ironing board and hair dryer
- Personal care products
- Spacious and well lit work desk
- Electronic/magnetic guest room keys
- Parking
- Limited shuttle service between Kellogg West and the meeting venue or drive own car. It’s a bit of a walk!
- A limited number of rooms are available for the nights of Monday, 15 June through and including the night of Saturday, 16 June. There may be some availability on Sunday, 10 June.
- To reserve: call 909-869-2222
- Check-in 3:00 p.m.
- Check-out Noon

**Cal Poly Student Dorms**

The Cal Poly student dorm rooms are typical dorm rooms, with two sets of beds, small dressers, and closets. Bathrooms are down the hall. Each dorm building is three stories high with a total of six wings, each wing containing 16 rooms. Both single and double rooms are available in the dorm facilities. Rooms will be assigned based on gender. Each occupant will receive a pillow, blanket, and linen package that includes 2 flat sheets, 1 pillowcase, 1 bath towel and 1 hand towel. Note that if you like to use a washcloth, you’ll need to bring it with you. You will also need to supply your own personal items such as hand soap, shampoo, etc.

The dorms are conveniently located a short walk from the meeting venues and also the El Camino Dining Commons. There are three-night and four-night packages available. Each package includes meals, plus the Division banquet on Thursday evening.

The three-night housing package (Tuesday, Wednesday, and Thursday nights) includes the following eight meals served at the El Camino Dining Commons plus the Thursday evening banquet, which takes place in the Ursa Major ballroom in the Bronco Student Center: Tuesday dinner; Wednesday breakfast, lunch, and dinner; Thursday breakfast, lunch, and student awards banquet; Friday breakfast and lunch.

The four-night package adds Friday night and two meals: Friday dinner and Saturday breakfast.

No additional nights are currently available for meeting attendees in the dorms.

Please refer to page 34 in this Newsletter for details on pricing of housing packages and extra nights.

To apply for housing at Kellogg West, call them directly at 909-869-2222 and be sure to identify yourself as attending the AAAS, Pacific Division meeting. To apply for housing in the dorms, fill out the form on page 34 of this Newsletter.

Please note that by applying for on-campus housing, you are agreeing to pay any additional fees that are assessed to the Pacific Division by Cal Poly that relate to your stay in one of their rooms, such as lost keys, use of “additional charge” facilities, fines, etc. Parking for those with automobiles is available at no charge on the Cal Poly campus in all visitor and student parking lots.

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**SYMPOSIA**

**CONTINUED**

*Complete list and descriptions start on page 24.*

- The Practice, Ethics, and Communication of Interdisciplinary Research
- Vietnam: Cultural Legacy, Crisis of Immigration, and an American Anthropologist in the Vietnam War
- Library Science Symposium
- The Intersection Between Science and Philosophy
- Pharmaceutical Research and Development: From Bench to Patient-centered Care
- Microbiome in the Environment: Health and Disease
- Big Data and Big Biology - What's the Connection?
- Implications of Food-borne Pathogens for Agriculture
- La Brea Tar Pits: Old Bones and New Insights
- Linking Atmospheric Chemistry, Modeling and Health Effects of Ozone and Particulate Matter with Improved Public Policy for Megacities

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E-mail us at aaaspd@sou.edu
**Off-Campus Meeting Housing**

The nearest hotels are roughly 2 miles from Cal Poly. The Pacific Division has entered into an agreement with the closest hotel, the La Quinta Hotel & Suites Pomona, to provide rooms for meeting attendees for $119 per night + taxes for 1 or 2 people in a room. Additional occupants are $10 each.

**La Quinta Hotel & Suites Pomona**

*Website:* www.laquintapomona.com/en/home.html  
*Address:* 3200 West Temple Avenue, Pomona, CA  91768  
*Phone Number:* 909-598-0073

**Contracted Rate:** $119/night room tax for one or two persons in a room. Third and fourth adults in room are $10/night each. There is no charge for children 18 and under staying in a room when accompanied by a paying adult.

**Dates available:** nights of 12 – 14 June 2018, plus three days either side as available.

**On-line reservations:** not available at the contracted rate.

**Phone-in reservations:** 909-598-0073, then press option 3 (goes to front desk). Be sure to identify yourself as being with the AAAS, Pacific Division group or they won’t be able to give you the contracted rate.

**Reservation deadline:** no later than 15 May 2018.

**Cancellation policy:** 48 hours before arrival.

**Amenities:**
- self-parking
- high speed internet access
- free local calls
- free “Bright Side” breakfast
- ADA accessible rooms
- business center
- fitness center
- additional amenities are listed on the hotel website

**Check-in:** 3:00 p.m.

**Check-out:** noon.

**Proximity to meeting:** approximately 1.9 miles, 4-minute drive.

If you’d rather stay elsewhere in Pomona or the surrounding area, we suggest you take advantage of hotel search engines such as Hotels.com, Priceline.com or Expedia.com in order to find the best deals.

Make your reservations for off-campus housing directly with the hotel of your choice. Note that the AAAS, Pacific Division offers the above hotel without endorsement for any specific commercial enterprise.

Additional information about campus housing and also contracted housing at the La Quinta, including web links and links for reservations, are available on this Division webpage: pacific.aaas.org/2018POMONA/Housing18.html.

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**Food on Campus**

There are several places to purchase food on the Cal Poly campus. An Einstein Brothers Bagels is located in Building 164, part of the Business complex that is anticipated to be part of the meeting venue. There will also be a few fast food establishments open in the Bronco Student Center, about a 7-minute walk from the meeting venues. Those staying in Kellogg West or not staying on campus at all and wishing to simplify their days on campus may purchase a 6 meal meals package at a cost of $90. This package includes dinner Tuesday; lunch, and dinner Wednesday; lunch and the banquet on Thursday; and lunch on Friday at the El Camino Dining Commons. A 7 meal package which add dinner Friday to those listed above can also be purchased for $100. Please refer to page 34 in this Newsletter for additional details and to purchase a meals package if so desired. Meals are also available at El Camino on a drop-in basis.

Those with an automobile may choose to catch a bite at the Cal Poly Farm Store or any of the other restaurants and fast food places in the vicinity. A list of local eateries will be available at the meeting registration desk.

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**Travel to Cal Poly Pomona (CPP)**

**By AIR**

Basic information courtesy Cal Poly Pomona webpage: www.cpp.edu/~aboutcpp/visitor-information/directions.shtml.

There are several airports in the vicinity of Cal Poly Pomona. They are listed below in order of their proximity. SuperShuttle prices quoted were obtained on 22 August, 2017 and are provided as samples of what one might expect to pay for a round trip van ride from the airport to Cal Poly Pomona. Driving directions for those renting cars at the different airports were also obtained from the Cal Poly Pomona web page referenced above.

**Ontario (ONT):** distance about 15 miles; SuperShuttle charter van round trip $48.

From airport to CPP by automobile: Take the San Bernardino (10) freeway West and exit at Kellogg Drive. Stay in your left lane, you should be on the left side of the large electronic marquee that welcomes visitors. Follow Kellogg Drive, you will pass through three intersections – University...
Drive, Palm Drive and Red Gum Lane. About 25 yards past Red Gum Lane, you will see the Visitor Parking Booth on the right side.

**John Wayne (SNA):** distance about 32 miles; SuperShuttle shared van round trip $64.

From airport to CPP by automobile: Take the 55 freeway North. Merge onto the I-5 freeway North. Take the 57 freeway North, exit at Temple Avenue and turn left (down the hill). Turn right on South Campus Drive, left on Kellogg Drive, and then turn left again when you see the Visitor Parking Booth.

**Bob Hope Airport (Burbank – BUR):** distance about 40 miles; SuperShuttle shared van round trip $78.

From airport to CPP by automobile: Take the 5 freeway south toward Los Angeles. Merge onto CA-134 E/Ventura Fwy E via EXIT 144 toward Glendale/Pasadena. CA-134 E/Ventura Fwy E becomes I-210 E/Foothill Fwy E. Follow the junction to the 57 freeway south. Exit on Temple Avenue and turn right (down the hill). Turn right on South Campus Drive (you should see a large electronic marquee that welcomes visitors), left on Kellogg Drive, and then turn left when you see the Visitor Parking Booth.

**Los Angeles International (LAX):** distance about 43 miles; SuperShuttle shared van round trip $53.

From airport to CPP by automobile: Take the 105 freeway East, transition to the 605 freeway North, transition to the Pomona (60) freeway East, transition to the Orange (57) freeway North. Exit at Temple Avenue and turn left (down the hill). Turn right on South Campus Drive (you should see a large electronic marquee that welcomes visitors), left on Kellogg Drive, and then turn left again when you see the Visitor Parking Booth.

Note that the prices of airfares can be quite different from airport to airport. Also, if planning to fly don’t forget to include the cost of transportation from the airport to Cal Poly and back. The SuperShuttle.com prices listed above are provided simply to serve as examples of what one might expect to pay for a round trip from each airport for one person. Adding additional people to a trip brings down the price for each considerably.

**By AUTOMOBILE**

From the 210 freeway (east or west): Take the 210 freeway and follow the junction to the 57 freeway south. Exit on Temple Avenue and turn right (down the hill). Turn right on South Campus Drive (you should see a large electronic marquee that welcomes visitors), turn left on Kellogg Drive, and then turn left when you see the Visitor Parking Booth.

From the 10 freeway (east or west): Exit at Kellogg Drive. Stay in your left lane, you should be on the left side of the large electronic marquee that welcomes visitors. Follow Kellogg Drive and pass through three intersections – University Drive, Palm Drive and Red Gum Lane. About 25 yards past Red Gum Lane, you will see the Visitor Parking Booth on the right side.

From the 60 freeway traveling east: Follow the junction onto the 57 freeway north. Exit at Temple Avenue and turn left (down the hill). Turn right on South Campus Drive (you should see a large electronic marquee that welcomes visitors), left on Kellogg Drive, and then turn left when you see the Visitor Parking Booth.

From the 60 freeway traveling west: Exit at Diamond Bar Boulevard and turn right. Turn left on Temple Avenue, right on South Campus Drive (you should see a large electronic marquee that welcomes visitors), left on Kellogg Drive, and turn left when you see the Visitor Parking Booth.

**By PUBLIC TRANSPORTATION**

Riding the bus to the campus is a relatively simple matter. Foothill Transit and Metro buses make convenient stops at the corner of Temple Avenue and South Campus Drive. From there, you can walk to the main part of the campus.

**WORKSHOPS BEING ORGANIZED FOR THE ANNUAL MEETING**

Complete list and descriptions starting "Workshops" on page 18.

**Examples of Strategies for Active Learning in Undergraduate Biology Education**
**Active Learning in Quantitative Courses**
**How Do You Carry Out Research in the Teaching Lab?**
**Communicating Science to the Public: Setting Up speaking Clubs/Circles**
**Using Games to Teach Children Science**
**An Introduction to Grant Writing for Foundations**
**3D Printing and Open Source Hardware Science Workshop**
**A Hands-on Introduction to Wearable Fashion Electronics**
**Advanced Beer Tasting Course at Innovation Brew Works**

E-mail us at aaaspd@sou.edu
Call for Session Proposals

Session proposals for the 2019 AAAS Annual Meeting are now being solicited. Deadline for submission: April 19, 2018

aaas.org/meetings

How can science help address the many divisions in our communities, in global society, and in science itself? Science plays a unique and important role in how people see and understand the world, and how lines and distinctions are drawn. At this Annual Meeting, we look for ways science is bringing together people, ideas, and solutions from across real and artificial borders, disciplines, sectors, ideologies, and traditions. How can science working across boundaries improve its ability to find solutions to the pressing problems of our age? How can scientists, wherever they work, more effectively engage with the broader society? How can we find better ways to engage the public, especially in expanding access to science and scientific careers? At the international level, science diplomacy builds bridges between countries. How can we encourage more of this, and utilize science as a common ground more locally as well? Can science contribute information that might reduce or mitigate the starkly divergent interests of different populations and demographics, such as urban and rural communities? What boundaries most impede your research or your career? While acknowledging that some boundaries are useful and necessary, the meeting theme considers how research can be applied to problematic separations in the world, and how unhelpful boundaries within science are being addressed.
Foothill Transit Bus Routes to Cal Poly Pomona include routes 195, 289, 480, 482, and 486. Metro Bus Routes to Cal Poly Pomona include routes 190 and 194. 

Metrolink Train stops at the Pomona North station are serviced with Bronco Link shuttles at special times.

PARKING ON THE CAL POLY CAMPUS

Good news! The Cal Poly University Police Department, as their contribution to the Pacific Division meeting on their campus, will allow our attendees to park on campus at no charge. And the best part is that attendees won’t need to display a permit. But this gift is valid only in VISITOR Parking and STUDENT Parking. A printable map that shows the student parking lots highlighted in YELLOW can be downloaded at this URL: pacific.aaas.org/2018POMONA/Maps/CPPColorCodedMap.pdf. Additionally, the meeting venues are highlighted in RED, potential on-campus housing is highlighted in BLUE and the Bronco Student Center (#35) and Los Olivos Dining Commons (#70) are highlighted in GREEN. The same map can be found on the inside of the back cover of this Newsletter.

REGISTRATION CENTER

The Registration Center will be in the foyer of Engineering Building 17 on the Cal Poly campus (see the campus map on page 39 of this Newsletter). Hours of operation are expected to be as follows:
Tuesday: 2:00 p.m. – 6:00 p.m.
Wednesday: 7:30 a.m. – 4:30 p.m.
Thursday: 7:30 a.m. – 4:00 p.m.
Friday: 7:30 a.m. – 4:00 p.m.

MEETING ROOMS

Technical sessions are expected to meet in rooms on the Cal Poly campus that are colored red on the campus map on page 39 of this Newsletter. All meeting rooms will be equipped with PC computers and projectors. Speakers requiring other specialized equipment, such as slide or overhead projectors, must make their requests known when they submit their abstracts. If available, specialized equipment will be provided. If rental costs are incurred, payment of these costs will be the responsibility of the requestor.

TIMES AND LOCATIONS
OF PRESENTATIONS

The assigned meeting rooms and times of presentations for the program will be published in the “Program with Abstracts” issue of the Proceedings (Vol. 37, part 1), which will be given to everyone who registers for the meeting. Speakers may obtain final confirmation of the time and place of their presentation by clicking the appropriate link(s) on the Pacific Division website (pacific.aaas.org) starting no later than 27 May 2018. Symposium planners will provide this information to presenters in their programs in advance of this date.

COMPUTERS AND
POWERPOINT PRESENTATIONS

Meeting rooms will be outfitted with PC computers running PowerPoint, and will be connected to standard data projectors. If you are planning to use PowerPoint for your presentation, you must make sure that it will run the way you want on the Windows platform as there are significant differences in the way PowerPoints run on the Windows and Mac platforms. Only thumb/USB/flash drives may be used to load presentations onto the computers.

CALL FOR ABSTRACTS

Members of AAAS and its affiliated societies, students, teachers, and other scientists are encouraged to participate in the annual meeting by presenting papers, either orally or as posters, developing and/or participating in symposia, developing workshops, or presenting other programs of merit at the meeting.

If you are submitting an abstract that is part of a symposium, the deadline for submission of abstracts to symposium planners was Monday, 2 April 2018, which means that if yours isn’t yet in, you’d better get busy! If you are submitting a non-symposium (oral or poster) abstract, the deadline for submission of abstracts to section chairs for consideration for inclusion in the contributed portion of the program is Wednesday, 18 April 2018.

Please see below for instructions for the preparation and submission of abstracts.

PREPARATION OF ABSTRACTS

Abstracts should contain two sections: 1) header information, which includes the title, name(s) of author(s), and contact information for author(s) and 2) the text of the abstract. All abstracts should be prepared in 10 pt Times New Roman font, “NORMAL” style, and full justified. The two sections should be prepared and formatted as follows:

Header Information
Title: The title of the presentation should be italicized and in title case, with all principal words such as nouns, verbs, adjectives, pronouns, adverbs, and the second parts of hyphenated major words capitalized. Small words of three letters or fewer, such as articles, prepositions, and conjunctions, should remain in lower case unless they begin the title, follow a co-
Share your expertise, creativity, and devices at the AAAS Pacific Division’s Third Annual
SCIENTIFIC MAKER EXHIBIT
at the Pacific Division’s annual meeting,
Cal Poly Pomona in Pomona, California June 12-15, 2018

It is now feasible to use “maker” technologies like 3D printing, Arduino electronics, sensors, and
the like to make data visualizations, experimental equipment and more. It is also possible to
enable citizen scientist collaborators who cannot only take data for professional scientists, but
follow open-source plans to create their own equipment. Are you one of the pathfinders that has
actually tried to do one of these things?

If so, please consider bringing your creation to Pomona for the AAAS Pacific Division’s third
Scientific Maker Exhibit. Group exhibits are welcome. Objects that are the subject of work in
progress or recent crowdfunding campaigns or equivalent open-source projects are encouraged.
This exhibit area is a “third type” of presentation – not a poster, not a talk, but a chance to show
off 3D prints, equipment, etc. There is no provision for hanging a poster at the exhibit – just plan
on flat table space and anything you want to put up on a table.

To apply for a separate poster or oral presentation,
use the process described at http://pacific.aaas.org/2018POMONA.

There is no charge for space in this exhibit, but all participants must
register for the meeting. Note
that display space is limited and acceptance of objects for display will be determined solely by the
staff and/or representatives of AAAS, Pacific Division based on quality and scientific merit of the
proposed display. Participants take sole responsibility for the safety of their displays.

The deadline for submission of an application is 15 April, 2018.
To apply, fill out the google form at
https://goo.gl/forms/zKUMEPedbtbRK7oG2

Questions? Contact
Joan Horvath (joan@naoscriptum.com) or
Dr. Roger Christianson (rchristi@sou.edu).

Notes:
1. Everyone whose object is accepted for this maker exhibit may need to have a Release of Liability form filled out,
signed, and on file with the AAAS, Pacific Division prior to the start of the meeting, at the discretion of the AAAS,
Pacific Division.
2. All objects are subject to a safety inspection at least 30 minutes prior to the start of the Exhibit. Staff of the AAAS,
Pacific Division and/or staff of the host institution retain the right to remove from the exhibit at any time any object
that fails the safety inspection or is deemed unsafe or a danger in any way to people or the physical plant or
participants.
ron, or end the title. At the end of the title is a non-italicized comma unless the title ends with an exclamation or question mark, in which case there is no comma.

**Authors' Names:** If there is more than one author for the presentation, all authors should be listed sequentially, starting with the person who contributed the most to the project and presentation and ending with the person who contributed the least. If two or more persons contributed equally, place a superscripted triangle (∆) next to each name. All names should be in upper case and bold except for the word “and” that occurs at the end of a list of presenters, which should be in lower case and bold. There should be no punctuation between the last presenter’s name and the left parenthesis that occurs at the start of the contact information.

**Authors’ Contact Information:** Contact information should be inside of a single set of parentheses and include the following where applicable: department, institution, city, state and, for the corresponding author, an e-mail address. E-mail addresses of additional authors may be included if desired. If more than one physical address occurs among the authors, use a superscripted number at the right of each author’s last name, followed by the corresponding superscripted number at the start of each unique address. If more than one author is listed, place a full size asterisk (*) next to the last name of the presenter(s). A period should be placed just to the right of the closing bracket for the contact information. Submissions not formatted in this manner may be placed just to the right of the closing bracket for the contact information. Submissions not formatted in this manner may be returned for reformattting or rejected. Applying all of these rules, a complete and properly formatted title line should look like this:

* FORMATTING AN ABSTRACT FOR SUBMISSION TO A PACIFIC DIVISION MEETING, SAMUEL P KRAFTER*, YESIMAN AUTHOR1, IDID THE WRITING2, and IDIDA DeREADING3 (1Department of Biology and 2Department of English, Southern Oregon University, 1250 Siskiyou Boulevard, Ashland, OR 97520, spkrafrei@biology.sou.edu, author@biology.sou.edu, iwriting@english.sou.edu; 3Department of Academic Speech, Bureau of Speech Employment, 12 Back Street, Medford, OR 97504, dereadingi@BSE.org).

**Text of the Abstract**

The purpose of an abstract is to give the reader a sense of what the presentation will be about. An abstract shouldn’t try to tell the whole story, but should give enough information in general terms so that the reader can ascertain the main thrust of the presentation and decide whether it will be worthwhile to attend. Thus, abstracts are limited to 250 or fewer words and should contain few, if any, references. It is acceptable to acknowledge funding sources at the end of the abstract, but the words used in this way do not count toward the 250 word limit. For additional hints about writing good abstracts, review one of these two or other web pages: owl.english.purdue.edu/owl/resource/656/1/writingcenter.unc.edu/handouts/abstracts/.

Remember to use Times New Roman 10 pt font, “NORMAL” style, and full justification for your abstract! If you use a different font or style, your abstract will be reformatted to this font and style. If your abstract contains special characters, in addition to submitting it via e-mail you should fax (541-552-8457) or scan and e-mail (rchristi@sou.edu) a copy with the special characters clearly marked and notations indicating the font used. Be aware that if you use an unusual font set for special characters there is a high likelihood that we will not be able to print it correctly, so please use common font sets such as Symbol or Wingdings for special characters.

The first line of each paragraph of the text of your abstract should be indented 0.25 inches by using the FIRST LINE INDENT command of your word processor. Do not use a tab or the spacebar!

**SUBMISSION OF ABSTRACTS**

All abstracts must be submitted via e-mail as Microsoft Word (.doc or .docx) or .rtf file attachments. DO NOT SUBMIT ABSTRACTS IN THE BODY OF AN E-MAIL OR AS A PDF FILE!

- **Symposium abstracts** should be e-mailed directly to the symposium organizer for review and approval.
- **Contributed (non-symposium) abstracts** must be sent to an appropriate section for review and acceptance into the program (see list starting on page 31 of this Newsletter). Submitters should e-mail their abstract to the chair (and co-chair if one is listed) for that section and copy their submission to the Pacific Division office (rchristi@sou.edu). The subject line of these e-mail submissions should include the phrase “Abstract18” (no space between abstract and 18) and the last name of the submitter (e.g.: Abstract18 Smith). Including this information in the subject line will ensure that you receive an e-mail reply confirming receipt of your submission at the Division office. Section chairs will make every effort to review submitted abstracts and notify submitters of whether or not their submission has been accepted into the program in a timely manner.

**Abstract submission deadlines:** Receipt of abstracts by symposium planners and section chairs have the following deadlines:

- **Deadline for abstract submissions for symposium presentations** to symposium planners – Monday, 2 April 2018.
- **Deadline for abstract submissions for contributed sessions** (poster or oral) to section chair(s) and Division office – Wednesday, 18 April 2018. If you would like to discuss your submission with the chair of the section to which you are submitting it, please refer to page 31 of this Newsletter for contact information.

**STUDENT AWARDS FOR EXCELLENCE**

The AAAS, Pacific Division offers each affiliated society and section participating in the annual meeting the opportunity to recognize outstanding student participants through the pre-
sentation of Awards of Excellence and cash prizes of $150 for first place (minimum judging pool of 3 presentations), $100 for second place (minimum judging pool of 6 presentations), and $50 for third place (minimum judging pool of 9 presentations). Additionally, each winner receives a certificate of recognition. Societies sometimes supplement these awards with their own cash prizes.

**Late Breaking News:** Once again we have a pair of angels that are providing additional money to increase the monetary amounts for the sectional awards, for which we are most grateful! We won’t know the actual amount each award will be increased by until after the meeting when we see how many students win awards. But we do know that each monetary award will be increased by approximately $35.00. Thank you, angels!

In 2018, seven division-wide awards may also be available: the Laurence M. Klauber Award for Excellence (unrestricted); the Geraldine K. Lindsay Award for Excellence in the Natural Sciences; the J. Thomas Dutro, Jr. Award for Excellence in the Geosciences; the Presidents Award for Excellence (unrestricted); the Rita W. Peterson Award for Excellence in Science Education Research; the Best Poster Award (for posters only but otherwise unrestricted); and the AAAS–Robert I. Larus Travel Award, which will provide a reimbursement for travel and other meeting related expenses up to $1,000 for the awardee to attend the national meeting of AAAS in Washington, D.C., 14 – 18 February 2019 for the purpose of presenting his/her winning presentation as a poster at the meeting. The Klauber, Lindsay, Dutro, Presidents, Peterson, Best Poster, and Larus awards are given to those students whose presentations and underlying research are judged the most significant in the advancement or understanding of science.

To be eligible for a sectional award or one of the division-wide awards, a student must 1) be registered for the meeting prior to the session in which his/her presentation is to be judged, 2) be the primary presenter of the presentation, and 3) be the principal research investigator. Student presentations, both oral and poster, are judged on their abstracts, scientific methodology and content, style of delivery or presentation, and audiovisual aids and/or handouts (if used). Sample evaluation forms for both oral and poster presentations are posted on the Division’s meeting web page, pacific.aaas.org/2018POMONA/Schedule18.html.

The announcement of awards will be made after dinner at the Thursday evening Student Awards Banquet. Students who are competing for Awards of Excellence are invited to participate in the Division’s annual banquet that evening (Thursday, 14 June) for the reduced cost of $20. Each student presenter is eligible to purchase one banquet ticket at the reduced price and can purchase additional tickets at the full price of $45 each. If you are one of these students, please be sure to indicate your intention at the bottom of page one of the Early Registration form and add the appropriate fee to your total on page two of the form.

**IMPORTANT NOTE:** All judging for student awards ends no later than noon on Thursday, at which time the judges go into closed session to determine the winners of the Division-wide awards. If you are a student wishing to compete for an Award of Excellence and your oral symposium presentation is scheduled to end later than noon Thursday, you must, in addition to presenting orally as part of the symposium, prepare a poster for presentation at a poster session earlier in the week. For purposes of an award, your presentation will be judged for the poster and you will then be included in the pool of potential prize winners. This may only occur if your presentation is part of a symposium. All poster sessions and oral contributed paper sessions are scheduled to ensure that student presenters are judged prior to the cut-off time on Thursday.

**Special Events**

The following special events are being planned for the meeting. The latest information may be viewed on this web page: pacific.aaas.org/2018POMONA/Schedule18.html.

**Tuesday evening public lectures.** The 99th Annual Meeting of the Pacific Division of AAAS will commence on Tuesday evening with a series of talks on issues important to the Southern California region and beyond. The distinguished speakers on the panel will represent diverse fields. Please refer to pacific.aaas.org/2018POMONA/Schedule18.html for up to date information on the talks when it becomes finalized.

**Tuesday evening reception.** Following the conclusion of the evening talks will be a light reception. Please plan on joining us for this informal mixer and time of networking.

**Wednesday evening AAASPD President’s Address.** Dr. Vilupanur Ravi (Department of Chemical and Materials Engineering, Cal Poly Pomona, Pomona, CA and current President of the Pacific Division) will present the annual Pacific Division Presidential Address this evening.

**Wednesday evening Cal Poly Pomona President’s Welcome to Campus and Reception.** Immediately following the Presidential Address, Cal Poly President Soraya M. Coley will welcome all meeting attendees to campus with a hosted reception consisting of light finger foods, desserts, and non-alcoholic drinks.

**Thursday evening Student Awards Banquet.** The evening is planned to begin at about 6:00 p.m. with a

Visit us at  http://pacific.aaas.org
hosted reception. The banquet will feature a choice of three meals:

**Roast Bleu Tri-Tip of Beef**, served with Cabernet Mushroom Sauce and topped with Bleu Cheese Crumbles, fresh seasonal vegetable, and Fettuccine Alfredo;

**Traditional Roast Turkey Dinner**, served with seasonal vegetable, stuffing, and Garlic Mashed Potatoes;

**Vegetable Wellington**, flaky puff pastry filled with grilled portobello mushrooms, zucchini, summer squash, and eggplant, served with roasted tomato and Italian herb coulis.

All meals include a Caesar salad, rolls, butter, Crème Brule for dessert, and iced tea and water.

Banquet tickets are available for purchase for $45 each. Those wishing to purchase individual banquet tickets should do so in advance as there will be few available on-site. The deadline for ordering banquet tickets is Friday, 1 June 2018. Please refer to pages 34 and 35 in this Newsletter for ordering information.

Students in competition for Awards of Excellence are invited to attend the banquet at the reduced cost of $20 for their first ticket. Additional banquet tickets are available to students at the full price of $45.

Division representatives will announce the names of student winners of sectional Awards of Excellence and also winners of the Division’s Laurence M. Klauber Award for Excellence (unrestricted), Geraldine K. Lindsay Award for Excellence in the Natural Sciences, J. Thomas Dutro, Jr. Award for Excellence in Science Education Research, the Presidents’ Award for Excellence (unrestricted), the Best Poster Award (for poster presentations only but otherwise unrestricted), and the AAAS Robert I. Larus Travel Award. We ask that all student award winners stay for a group photograph to be taken at the conclusion of the awards announcements.

### Public Lectures

A public lecture series that is free and open to the public is being planned for Tuesday evening. Please check the Division’s webpage, http://pacific.aaas.org/2018POMONA/Schedule18.html for up to date information on these lectures.

### Scientific Maker Exhibit

The Pacific Division will be hosting its third annual Scientific Maker Exhibit during this meeting. Please refer to page 15 in this Newsletter for details on the event and directions on how to apply in order to have your project included in the Scientific Maker Exhibit. Please note that this event is not being judged for student awards.

### Meetings

**Tuesday Morning Business Meeting of the Council of the Pacific Division.** The Council of the Pacific Division will hold its annual business meeting starting promptly at 8:30 a.m. on Tuesday, 12 June. The Council will elect officers and Council members, approve invitations for future meetings, discuss programs for the 2018 and 2019 annual meetings, and transact such other business as is required by the Division’s By-Laws. This is an open meeting and Pacific Division members with an interest in the governance of the Division are invited to attend.

### Workshops

As of the publication of this Newsletter, the following workshops are being planned. For the most up-to-date information about workshops for this meeting, please access the Division’s Workshops web page at pacific.aaas.org/2018POMONA/Workshops18.html.

**Advanced Beer Tasting Course at Innovation Brew Works.** Organized by Brisa Blevins (Brewing Education Coordinator, Innovation Brew Works, Cal Poly Pomona, Pomona, CA; beblevins@cpp.edu). Co-organized by: Melody Young (Manager, Innovation Brew Works, Cal Poly, Pomona, Pomona, CA; mpyoung@cpp.edu). Taught by: Taylor Lane (Lab Technician, Russian River Brewing Company, Santa Rosa, CA, and Instructor, Science of Beer Program, Cal Poly Pomona, Pomona, CA; tlane73190@gmail.com).

This workshop is designed to fit the needs of persons in various levels of craft beer knowledge. Topics include, beer flavor components, fermentation, food and beer pairing, beer flaws (detrimental microbiological activities that occur with a variety of beer flaws, at what point they occur, and the off-flavors they produce), and more. To ensure subject matters are understood to the fullest degree, beer tasting will be offered throughout the course. Upon completion, you are invited to stay in the brewery for a complimentary pint or flight of 4 samples of beer and snacks.

About the instructor: As a Lab Technician for Russian River Brewing Company in Santa Rosa, CA, and previously as the Quality Assurance Technician for Ritual Brewing Company in Redlands, CA, Taylor Lane has been responsible for conducting quality control protocols and developing standard operating procedures for Russian River Brewing Co. Her focus with Russian River includes sensory analysis, yeast management, microbiological methods, and maintenance of specification guidelines. Ms. Lane has also served as a Teaching Associate and has supervised undergraduate and graduate level research projects for the Biology Department at Cal Poly Pomona. Taylor holds a Master of Science in Biology, with an emphasis in microbiology, from Cal Poly Pomona.

E-mail us at aaaspd@sou.edu
STAND TOGETHER

Be a Force for Science

GET THE FACTS
Understand the science behind the issues that matter.

FOLLOW AAAS ADVOCACY
Champion public discussion and evidence-based policy.

TAKE ACTION
Learn ways you can become an advocate and stand up for science.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Visit us at http://pacific.aaas.org
Pomona and a Bachelor of Science in Biology from the University of California, Santa Barbara.

Minimum early enrollment: 12; Maximum enrollment: 36. Participants must be at least 21 years old.

Cost: $59.00

If this workshop is cancelled due to low enrollment, the registration fee for it will be completely reimbursed to those already signed up.

Communicating Science to the Public: Setting Up speaking Clubs/Circles. Limited to 20 participants. Organized by: Dennis F. Mangan (Director, Chalk Talk Science Project, Santa Rosa, CA; chalktalkscience@gmail.com).

The importance of good communication skills is well recognized. Scientists who can speak and write well have increased credibility, are more likely to get funding, are better teachers, have more impact on policy development, and feel more satisfied in their careers. Yet, many universities and research centers struggle to integrate communication skill-building into their educational curricula and career development for their faculty and technical staff.

This workshop is intended for students and faculty who want to set up a science communication learning program (i.e., speaking club/circle) at your home institution.

The workshop will:

- highlight key aspects of good science communication to teach;
- show how to integrate science communication training into busy schedules;
- explain how to sustain a science communication training program; and
- outline how to evaluate a successful program.

Participants will be invited to join a network of science communication leaders to share novel approaches for learning science communication skills.

Examples of Strategies for Active Learning in Undergraduate Biology Education. Organized by: Julia Ruppell (Department of Biology, University of Portland, Portland, OR; ruppell@up.edu).

The process of engaging students in active learning is connected to positive learning outcomes. Many science departments in higher education are embracing this phenomenon by encouraging instructors to use more active learning in their courses. However, many instructors would benefit from increased knowledge of active learning methods and their usefulness for covering different content in their courses. Instructors benefit when they can learn from others about appropriate teaching strategies and methods along with their potential drawbacks, and this in turn benefits students. This workshop aims to engage faculty and students who are interested in promoting active learning in college science classrooms, especially for biology majors’ courses. Presenters will demonstrate active learning methods that they use, discuss what has worked well for their courses, discuss potential hurdles to utilizing active learning in undergraduate education and request feedback from participants. The information in this workshop will teach participants instructional decision-making and future research about active learning in college science courses.

Note: The organizer for this workshop is also organizing a symposium, Strategies for Active Learning in Undergraduate Biology Education. Information about this symposium can be found on page 26 of this Newsletter.

An Introduction to Grant-Writing for Foundations. Organized by Peter L. Kraus (Associate Librarian, J. Willard Marriott Library, 295 S 1500 E, Salt Lake City, UT 84112; peter.kraus@utah.edu).

Participants will review the process of writing effective grant applications and assembling a good proposal to foundations and charities. The basic components of a competitive grant proposal will be presented including the common pitfalls to avoid in grant writing and submission. Appropriate project funding sources will be discussed as well as establishing positive sponsor relationships, satisfying sponsor requirements, and the proposal review process.

Active Learning in Quantitative Courses. Organized by: Victoria Bhavsar (Director of Faculty Center & eLearning, Cal Poly Pomona; vbhavsar@cpp.edu) and Alison Baski (Dean of College of Science, Cal Poly Pomona).

Cal Poly Pomona, Cal State LA, and San Jose State University are collaborating to support faculty in incorporating significant active learning strategies into (i.e. flipping) introductory level quantitative courses including physics, calculus, programming, statistics, and discrete mathematics. In this session, participants will select effective active learning strategies to achieve learning goals, draft specific activities, plan a class agenda to support their goals, and plan a course calendar to consistently incorporate active learning.

Note: The organizers for this workshop are also organizing a symposium, Multi-Disciplinary Experiences in Flipping Quantitative Course. Information about this symposium can be found on page 28 of this Newsletter.

How Do You Carry Out Research in the Teaching Lab? Organized by Ben McFarland (Department of Chemistry and Biochemistry, Seattle Pacific University, Seattle, WA; bjm@spu.edu).

Course-based undergraduate research experiences (CUREs) are effective but complicated to implement. Transitioning your research from your graduate or post-doctoral experience into the undergraduate teaching laboratory poses specific challenges in terms of time, money, and student expertise. In this workshop, all participants will discuss the details of how we have brought authentic research experiences into undergraduate teaching labs so that we can...
learn from each other what has (and has not) worked.

Over the past decade, I have adapted three different multi-week projects from my post-doctoral research into undergraduate laboratory courses: a bioinformatics project to Biochemistry I, a protein production project to Biochemistry II, and a protein-protein interaction kinetics project to Survey of Physical Chemistry. For five years, I have used the GENI website (geni-science.org) to help organize the flow of information in large and small classes. GENI gives protocols to students and collects data from students, facilitating authentic research and publishable results.

In this workshop, scientists from all disciplines are welcome to discuss the details of our experiences with CUREs and with adapting research protocols to the undergraduate laboratory, with an eye toward making plans for future protocol adaptations. Topics for discussion include:

- Scheduling research activities within limited, weekly lab periods;
- Verifying student-collected data;
- Evaluating and grading results (and reassuring anxious students); and
- Responding to unexpected lab results.

Some online interactions with websites are planned as examples, so participants should bring laptops if possible.

**3D Printing and Open Source Hardware Science Workshop.** Organized by: *Joan Horvath and Rich Cameron* (Co-founders, Nonscriptum LLC, Pasadena CA; joan@nonscriptum.com).

Have you been wondering if you should be using 3D printing and open-source electronics in your own educational or scientific endeavors, but you didn’t know where to start? Most scientists and teachers end up doing some DIY inventing along the way, but can you take it further now that many technologies have plummeted in price? Organizers will frame the possibilities and walk through several technologies in depth, along with some case studies drawn from the projects that will be on display at the Maker Exchange. This three-hour workshop will be a compliment to the Scientific Maker Exchange and will be a deep dive into some of the technologies and projects on display.

Note: The organizers for this workshop are also organizing a Scientific Maker Exhibit. Information about this exhibit can be found on page 15 of this *Newsletter*.

**A Hands-on Introduction to Wearable Fashion Electronics.** Organized by: *Mariappan Jawaharalal* (Department of Mechanical Engineering, California State Polytechnic University, Pomona, CA; jmariappan@cpp.edu). Co-organizers: *Cordelia Ontiveros* (Campus Director, Project Lead The Way, and Professor, Chemical and Materials Engineering Department, Cal Poly Pomona, Pomona, CA), *Kristina Rigden* (Outreach Program Director, College of Engineering, Cal Poly Pomona), and *Nicole Gutzke* (Program Coordinator, Program Lead The Way and Women in Engineering, College of Engineering, Cal Poly Pomona, Pomona, CA).

Electronics has become an integral part of our life. Everything we use today has some form of electronics. Our cell phones and computers use powerful microprocessors, electronic components, and circuits. Basic electronics and circuitry is very important for all engineers, not just electrical engineers. However, learning about electronics and circuits is usually considered dry and boring. It does not have to be that way. One way to make teaching electronics interesting is by allowing students to design their own gadgets that they can wear and show off. Examples of such gadgets include the design of a tie that lights up, or an earring that displays changing bright colors. It may be a hair bow designed with bright color LEDs or a bike helmet that can change colors in the night. It may be a jacket with built-in GPS, or a dance costume, or a friendship bracelet that can talk. The possibilities are endless, and it is up to the imagination of students.

The objective of this workshop is to introduce the participants to the exciting field of wearable technology. In this workshop, participants will learn how to create simple wearable gadgets using an Arduino compatible microcontroller, and accessories. This workshop is based on successfully implementing wearable technology at our K-12 outreach program, Femineers, as well as in our 100 and 200 level courses. The Femineer (Female engineers) program has been growing, and it has been adopted by over 30 schools. The Femineer program has been recognized by the White House in 2016 as one of the most influential programs for increasing educational outcomes and opportunities for female Hispanic K-12 students across the country.

**Using Games to Teach Children Science.** Organized by *James M. Bower* (Founder, Numedeon, Ashland, OR; jim@numedeon.com).

Current industry estimates suggest that 91% of all children in the United States, ages 2-17, play video games. At the same time, sales of even more traditional board games have grown by almost 30% over the last several years. We have become a nation of young gamers. While science has long recognized the connection between play and learning, this hands-on workshop will consider several specific efforts to use gaming technology to engage children in science.

To get maximum benefit from this workshop it is advised that attendees bring a laptop computer in order to go on-line and explore various web sites that will be referenced.

**FIELD TRIPS**

All field trips are open to meeting registrants and their families. At least one member of a family group must be registered for the meeting. Unregistered family members will be charged an additional one-time-only $10 field trip registration fee. This fee is paid only once for this meeting regardless of how many field trips a non-registrant participates in.

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Due to limited space, advance registration is required for all field trips. Reservation and payment of field trip fee(s) are included on page 2 of the Advance Registration Form (see page 35 of this Newsletter).

Each field trip has a minimum number of attendees, below which the organizers may cancel. Should a trip be cancelled by the Division for any reason, including insufficient advance sign-ups, a full refund will be granted. If a registrant cancels via e-mail or written notification received in the Pacific Division office no later than 1 June 2018, the registrant will receive a refund of the fee(s) paid less a $15 processing fee. If paid by credit card, an additional 3.5% of the original charge will be deducted from the amount being refunded to help pay for fees charged to the Division by credit card companies.

Information about specific field trips may be found on the Division’s Field Trips web page: pacific.aaas.org/2018POMONA/FieldTrips18.html. In addition to the trip to the Huntington Museum Botanical Gardens listed below, we expect to have field trips to Mt. Baldy, the La Brea Tar Pits, and the Griffith (or other) Observatory.

Tuesday, 12 June, 9:00 a.m. – 3:00 p.m. Hydrogeology of Icehouse Canyon, San Gabriel Mountains, California. Organized and led by Dr. Jonathan A. Nourse (Chair, Department of Geological Sciences, Cal Poly Pomona; janourse@cpp.edu).

For hydrogeology and nature enthusiasts, Icehouse Canyon with its Quaternary sediments, crystal-clear pools, and redwoods is one of Southern California’s true gems. This six-hour field trip explores the geologic reasons for flow variations in Icehouse Creek. Gaining and losing reaches of the creek documented by 25 years of stream gauge records will be related to vivid geologic controls that include: spring discharge from water-saturated landslide deposits and deep-seated fault zones, bedrock constrictions of alluvial aquifers, and infiltration into coarse gravel deposits. The itinerary involves a moderately strenuous 1 mile hike up Icehouse Canyon trail, with multiple stops to view stream-gauging sites and perennial springs. Hydrographs included in the guidebook provide a basis to discuss the response of the watershed to precipitation recharge events and systematic variations in base-flow recession. Lunch will be eaten amongst boulders and pools and small waterfalls of Icehouse Creek. Our excursion takes place during the peak of the runoff season when spring discharge and stream flow are most dramatic.

Advisory: This trip involves a 2-mile round trip hike on a steep, rocky trail between 5200 and 5800 feet elevation, plus several short detours off the trail to view creek and spring gauging sites. Be sure to wear hiking boots or comfortable walking shoes and bring along a sun hat, light jacket or sweater, and bug repellent.

Includes transportation, box lunch, and field guide.
Cost: $45.00 per person.

Tuesday, 12 June, 8:30 a.m. – 4:30 p.m. Science and Art at the Getty Center. Organized and led by Dr. Claudia Garcia-Des Lauriers (Associate Professor and Anthropology Coordinator, Department of Geography and Anthropology, Cal Poly Pomona; clauriers@cpp.edu).

Led by Dr. Claudia Garcia-Des Lauriers, this field trip will visit the Getty Center in Los Angeles. A highlight of the trip will be a look behind the scenes of the Getty Conservation Institute (GCI), including a walking tour of the GCI Science laboratories which will explore how advanced scientific instrumentation is used to answer questions at the intersection of art and science. There will be free time to allow attendees to explore the Getty art exhibits, botanical gardens, restaurants, and gift shops. Lunch is on your own. Be sure to wear comfortable walking shoes and clothes. If you bring a camera, you may take non-flash photography (no-flash photography is permitted). And don’t forget to bring along some money for lunch and snacks!

Includes transportation, admission to the Getty Center, and the behind-the-scenes tour of the Getty Conservation Institute.
Cost: $55.00 per person.

Saturday, 16 June, 8:30 a.m. – 4:00 p.m. La Brea Tar Pits and Museum. Organized and led by Prof. Donald R. Prothero (Department of Geological Sciences, Cal Poly Pomona; donaldprothero@att.net). Prof. Prothero has published many papers on La Brea mammals and birds, and has worked at the La Brea Tar Pits and Museum since 1970.

Departs Kellogg West at 8:30 a.m. and Cal Poly student dorms shortly thereafter, arriving at La Brea just before 10:00. Guided by the lab supervisor, we will go in to the Tar Pits Museum and take a “behind the scenes” tour of the preparation lab and also the collection of over 3 million fossils of mammals, birds, insects, plants, and many other organisms. Both of these areas are normally closed to the public. Afterward we will view the 3D movie, “Titans of the Ice Age.” After our museum visit, we will tour Hancock Park to see the Observation Pit (normally closed to the public), the Pit 91 excavation, and Project 23. Following this, everyone will be given the opportunity to find lunch on their own at one of the many different choices within a few blocks along Wilshire Boulevard, as well as either revisiting the La Brea Tar Pits or visiting other attractions in the area, such as the Los Angeles County Museum of Art and the Petersen Automotive Museum. We will meet at the vehicle(s) for our drive back to Cal Poly by about 2:45 p.m., arriving at Cal Poly by about 4:00 p.m.

Includes transportation, admission to the La Brea Tar Pits and Museum, and movie. Lunch at one of the many different dining opportunities on the “Miracle Mile” of Wilshire Boulevard, as well as other local attractions you may choose to visit, are on your own.
Cost: $45.00 per person.
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Note: The planner of this field trip is also organizing a symposium, *La Brea Tar Pits: Old Bones and New Insights* for this meeting. Please refer to page 27 of this Newsletter.

**Saturday, 16 June, 10:00 a.m. at the Huntington. Huntington Library, Art Collections and Botanical Gardens.** Organized and led by Joan Horvath (Nonscriptum LL, Pasadena, CA; joan@nonscriptum.com).

The Huntington Library, Art Collections, and Botanical Gardens is a collections-based research and educational institution serving scholars and the general public. Each year, The Huntington:

- provides 1,700 scholars with access to a world-class collection of rare books, manuscripts, photographs, maps, paintings, prints, sculpture, and decorative arts;
- awards $1.85 million in fellowships (through a peer-review process) to scholars for advanced humanities research;
- educates thousands of school children and their teachers in art, history, literature, and botanical science through special tours and programs;
- organizes special exhibitions to enhance the visitor experience, interpret the collections, and facilitate learning; and
- hosts more than 750,000 visitors a year.

Ms. Joan Horvath, Pacific Division Council member, is a docent at the Huntington, who regularly leads visitors on tours of the botanical gardens, and which she has offered to do for our group during this visit. The plan is to meet Ms. Horvath at a prearranged spot at the Huntington (details will be provided for those taking this tour of the facility) by 10:00 a.m., whereupon she will lead everyone on a roughly 1.5 hour tour of the botanical gardens. Following will be free time for as long as you wish to explore the 120 acres or so of grounds and facilities. Here’s the catch: Although the Pacific Division is making this opportunity available, we will *not* be providing any transportation, but neither will there be any up front charge for this event. All details for getting to and from the Huntington will be up to those participating.

It is recommended that participants in this field trip review the Huntington Library website, http://www.huntington.org/, to become oriented to the facility. A map showing the Huntington grounds and discussing accessibility may be downloaded at this link: http://www.huntington.org/WebAssets/Templates/content.aspx?id=350. Please note that most of the grounds are accessible by wheelchair but a few trails are steep and/or have stairs. Refer to the Huntington map to distinguish between those types of trails.

Audio tours and other programs about the Huntington may be found by searching iTunesU for “The Huntington.”

No food is allowed on the premises. However, there are several places inside the Huntington grounds where food may be purchased, such as the Rose Garden Café, which offers a wide variety of sandwiches and grilled items such as hamburgers, hot dogs, grilled chicken sandwiches, fish tacos, and quesadillas, all made to order, entree salads with fruit or fresh mixed greens, homemade soups, chili, freshly baked goods including muffins, scones, turnovers, brownies, and cookies. Another option is the Chinese Garden Tea Shop, as well as food carts. All food purchases are on your own, and may be purchased with cash or credit card.

Be sure to come prepared for our time at the Huntington with comfortable walking shoes, hat, sunscreen, and water. It can be hot, particularly in the Cactus Garden!

Sign-ups for this event will be taken at the Registration Desk during the Cal Poly Pomona meeting. The number of participants is limited to 20, so please be sure that you have all details worked out and that you will attend before signing up!

**Cost:** Admission to the Huntington, paid at the door. Price depends on the ages of the participants. Current pricing is youth (4 – 11): $13; adult (19 – 64): $29; and senior (65+): $24.

Transportation and Meals: On your own.

Sign up for the tour: At the meeting Registration Desk; no advance sign-ups.

Cost: Nothing up front. Transportation, entry fee, and lunch on your own.

**Technical Sessions**

**Symposia**

The following symposia are being planned for this meeting. Although symposia are typically organized around invited papers, organizers will often consider adding one or more contributed papers if they are relevant to their programs. Should you wish to participate in one of these symposia, contact the symposium organizer directly. Instructions for abstract preparation and submission for symposium presentations appear on pages 14 ff. of this Newsletter. Should you prefer to present a paper in one of the contributed paper or poster sessions, you should also refer to page 14 ff. for instructions and also page 31 in this Newsletter for the names of sections and program organizers. Check the Division’s web page, pacific.aaas.org/2018POMONA/Symposia18.html, for the latest information on symposia.

Please remember that at this time the listings contained herein are tentative and subject to change. If you plan to attend the meeting largely for one symposium or technical session, check the Division’s website for updates to the program or contact the Division office at 541-552-6747 or rchristi@ sou.edu to confirm the status of the session(s) before committing travel funds. Additional symposia added to the program will be posted on the Division’s symposium web page and will also appear in the April Newsletter.

**Important notice for students presenting in symposia:** If you are a student who intends to be in the competition for an Award of Excellence and you are part of a symposium...
with your presentation scheduled Thursday afternoon or later (check with the planner of your symposium), you must also present your work as a poster in order to be judged. Otherwise, you will not be eligible for student awards due to the conclusion of judging Thursday morning. Awards will be announced later that evening.

(1) Recent Advances in Turbulence Research: Experiments, Theory, and Computations. Organizers: Campbell Densmore (Mechanical Engineering Department, College of Engineering, Cal Poly Pomona, Pomona, CA; cadensmore@cpp.edu), Marko Princevac (Mechanical Engineering Department, Bourns College of Engineering, University of California, Riverside, Riverside, CA; marko@engr.ucr.edu), and Frank Jacobitz (Mechanical Engineering Department, Shiley-Marcos School of Engineering, University of San Diego, CA; jacobitz@sandiego.edu).

This symposium is a venue for the exchange of recent results in the field of turbulence research. Discussion topics will include geophysical turbulence, wildfire dynamics, and interactions between bubbles and turbulent flow fields, but any topics related to turbulence research are appropriate for this session. Geophysical turbulence concerns flow with shear, stratification, or rotation and with applications in the atmosphere or oceans, including turbulence evolution, transport, and mixing of natural or anthropogenic substances. Atmospheric flows and turbulence in large part govern fire dynamics. Additionally, the dissipation associated with bubble laden turbulent flows will be discussed. Studies that involve laboratory or field experiments, theoretical analysis, as well as simulation approaches will be discussed. The organizers particularly encourage students at the undergraduate or graduate level to present their work in this symposium.

(2) Unmanned Aerial Systems: Advancing Technology and Applications. Organizers: Subodh Bhandari (Aerospace Engineering, Cal Poly Pomona, Pomona, CA; sbhandari@cpp.edu), Navid Nakjiri (Aerospace Engineering, Cal Poly Pomona, Pomona, CA; nnakjiri@cpp.edu), and Zahra Sotoudeh (Aerospace Engineering, Cal Poly Pomona, Pomona, CA; zsotoudeh@cpp.edu).

This symposium will focus on increased autonomy of unmanned aerial systems (UASs) and their widespread applications. Despite their potential use for many applications, they have not yet seen widespread usage. The lack of sufficient level of autonomy has prevented the mass deployment of UASs for many applications such as agriculture, search and rescue, traffic monitoring, package delivery, etc. The symposium topics of interest include robust, nonlinear, and intelligent flight controls, collision and obstacle avoidance, command and control of multiple unmanned systems, coordination between multiple unmanned systems, navigation in GPS-denied environment, energy harvesting and increased endurance, and application of these systems for widespread usages.

(3) Rocket Propulsion. Organizers: Frank Chandler (California State Polytechnic University Pomona, Pomona, CA; fochandler@cpp.edu) and Eric Schmidt (Exquadrum, Inc, Adelanto, CA; Eric.Schmidt@exquadrum.com).

Rocket Propulsion Development: This half-day session will be a compilation of current relevant research in the area of Rocket Propulsion. This will include work done in both liquid and solid propellants that are currently being investigated by several rocket company researchers. A few projects are being performed at local test sites and government facilities in the region.

Liquid Rocket Laboratory Projects: This half-day session will discuss the newly developed Liquid Rocket Laboratory at California State Polytechnic University, Pomona and its capabilities. Also highlighted will be several student research projects related to rocket engines and launch vehicle developments. This set of presentations will discuss the analytical development of the technologies related to liquid rocket engines and the development of the hardware designs that are being built by student and local manufacturing concerns.

(4) Advances in Engineering Education. Organizer: Mariappan Jawaharlal (Department of Mechanical Engineering, California State Polytechnic University, Pomona, CA; jmariappan@cpp.edu).

Engineering education is experiencing transformative changes. Changes have been taking place not only in the field of technology but also in pedagogical approaches. Engaging students through short interactions seems to be gaining popularity. Students often turn to online resources for help rather than reaching out to their professors. This symposium aims to address these critical issues. We invite contributions in topics that include, but are not limited to, innovative pedagogy, online learning, flipped classrooms, MOOC, new trends, and the use of technology in enhancing education.

(5) Renewable Energy and Thermal Science: Materials, Design, and Applications. Organizer: Reza Baghaei Lakeh (Mechanical Engineering, California State Polytechnic University, Pomona, CA; rblakeh@cpp.edu). Co-organizers: Maryam Shafahi (Mechanical Engineering, California State Polytechnic University, Pomona, CA; mshafahi@cpp.edu) and Kevin Anderson (Mechanical Engineering, California State Polytechnic University, Pomona, CA; kranderson1@cpp.edu).

This symposium aims to showcase recent advancements in the area of renewable energy systems and thermal fluids engineering. The symposium welcomes presentations in all areas of renewable energy, including but not limited to solar-thermal, solar-photovoltaics, wind, geothermal, wave, thermal energy storage, and compressed energy storage. The presentations are expected to focus on component-level and system-level design, material properties, and heat transfer behavior of renewable energy systems.

(6) Nanomaterials: Synthesis, Manufacturing and Applications. Organizer: Jenny Zhen Yu (Electrical and Computer Sc...
Engineering, California State Polytechnic University, Pomona, CA; zhenyu@cpp.edu). Co-organizers: Haamun Kalaantan-tari (Industrial and Manufacturing Engineering, California State Polytechnic University, Pomona, CA; hkalaantari@cpp.edu) and Vilupanur A. Ravi (Chemical and Materials Engineering, California State Polytechnic University, Pomona, CA; vravi@cpp.edu).

This symposium will provide a platform for researchers in the field of nanomaterial synthesis, manufacturing and applications to present their work. Topics include low cost and robust manufacturing processes; nanoscale imaging technology; and application of nanotechnology to wireless communication; application of nanotechnology to environmental issues; medical applications of nanotechnology and power generation and storage.

(7) Space Power Technologies: Thermoelectrics, Fuel Cells and Batteries. Organizer: Billy Li (Jet Propulsion Laboratory, Pasadena, CA; Billy.Chun-Yip.Li@jpl.nasa.gov). Co-organizers: Jean-Pierre Fleurial (Jet Propulsion Laboratory, Pasadena, CA; Jean-Pierre.Fleurial@jpl.nasa.gov), Erik Brandon (Jet Propulsion Laboratory, Pasadena, CA; Erik.J.Brandon@jpl.nasa.gov), and Vilupanur A. Ravi (Chemical and Materials Engineering, California State Polytechnic University, Pomona, CA; vravi@cpp.edu).

The power needs of spacecraft can be met in different ways, e.g., solar (photovoltaics), fuel cells, batteries, and radioisotopes. The latter incorporate thermoelectric devices to facilitate thermal-to-electrical power conversion. In this symposium, presentations will address all aspects of space power including materials, processing, devices and performance.

(8) Polymer Synthesis and Processing for Advanced and Emerging Applications. Organizers: J. B. Puthoff (California State Polytechnic University, Pomona, CA; jbputhoff@cpp.edu), Farihana Abedin (Electromechanical Engineering Technology, California State Polytechnic University, Pomona, Pomona, CA; fabedin@cpp.edu), and K. Forward (California State Polytechnic University, Pomona, CA; km-forward@cpp.edu).

Polymers possess many properties that make them suitable as the preferred materials in a number of engineered structures and components. However, they also possess properties – for instance, those related to their processability – that enable their use in advanced systems incorporating fibers, membranes, nanostructures, surface modifications, pharmaceutical delivery, smart components, biomedical scaffold structures and adhesives, etc. This symposium will present recent developments in the fabrication of polymers for use in advanced and emerging applications.

(9) Medical and Dental Implants: Materials, Stability and Compatibility. Organizers: Vilupanur Ravi (Department of Chemical and Materials Engineering, Cal Poly Pomona, Pomona, CA; vravi@cpp.edu) and Ichiro Nishimura (UCLA School of Dentistry, Los Angeles, CA; inishimura@dentistry.ucla.edu).

The rapid aging of the human population is posing unprecedented issues in regards to their medical and dental needs, e.g., the need for longer-lasting implants. In addition, the problems of infection following surgical procedures and the possibility of implant rejection by the body need to be solved. Modern implants need to address these issues, and in this symposium issues such as material compatibility both in terms of mechanical properties and environmental stability, osseointegration, etc., will be explored. Other areas of interest include implant materials and design, implant selection for structural and functional needs.

(10) Strategies for Active Learning in Undergraduate Biology Education. Organizer: Julia Ruppell (Department of Biology, University of Portland, Portland, OR; ruppell@up.edu).

The process of engaging students in active learning is connected to positive learning outcomes. Many science departments in higher education are embracing this phenomenon by encouraging instructors to use more active learning in their courses. However, many instructors would benefit from increased knowledge of active learning methods and their usefulness for covering different content in their courses. Instructors benefit when they can learn from others about appropriate teaching strategies and methods along with their potential drawbacks, and this in turn benefits students. This symposium aims to engage faculty and students who are interested in promoting active learning in college science classrooms, especially for biology majors’ courses. We will hear from different presenters about the methods they use, what has worked well for their courses and potential hurdles to utilizing active learning in undergraduate education. The information in the presentations can be applied to inform instructional decision-making and future research about active learning in college science courses.

Note: The planner of this symposium is also organizing a workshop, Examples of Strategies for Active Learning in Undergraduate Biology Education, for this meeting. Please refer to page 20 of this Newsletter.

(11) Active Learning Practices in Chemistry Courses. Organizer: Yan Lui (Department of Chemistry and Biochemistry, California State Polytechnic University Pomona, CA; ylanl@cpp.edu).

Learning is never a passive process; one-way flow of information from instructor to students will never make student learning productive and successful. Research indicates that students perform better when they actively participate in all-class activities. For example, problem solving exercises which are a common type of active learning practice used in lecture courses can develop an individual’s critical thinking capability; while group exercises may develop leadership and collaborative skills. On the other hand, inquiry-based project modules which are an important active learning practice in laboratory courses require students to think and act like sci-
entists in a real-world setting. It is very important for instructors to create an active learning environment for students. Enhancing their learning and preparing them for their professional careers are the ultimate goal of active learning practice implementation. To date, many active learning practices have successfully been incorporated in chemistry courses. The purpose of this symposium is to provide a platform for educators in chemistry to communicate the active learning practices in their classes. Faculty in all disciplines of chemistry from public schools to private schools are invited to give presentations on active learning practices.

(12) Library Science Symposium. Organizers: Crystal Goldman (Geisel Library, University of California, San Diego, La Jolla, CA; clgoldman@ucsd.edu), Zoe Pettway Unno (USC Libraries, Science and Engineering Library, Los Angeles, CA; zunno@usc.edu), Paul Hottinger (University Library, California State Polytechnic University, Pomona, CA; phottinger@cpp.edu), Amy Besnoy (Copley Library, University of San Diego, San Diego, CA; abesnoy@sandiego.edu) and Frida Lin (University Library, California State Polytechnic University, Pomona, CA; fwlin@cpp.edu).

Library Science is a “discipline with primarily a practical aim” (Hjørland, 1999, p. 512). This does not transmute the fact that the field is grounded in fundamental theory and research. Practice-based research can relate to specific approaches to concrete problems at individual institutions, while theoretical research is more general in nature, can be applied to multiple library environments, and is not necessarily based on concrete practices (Audunson, 2007; Chow, Shaw, Gwynn, Martensen, & Howard, 2011; Hjørland, 1999). These methods of library research complement each other and work in tandem to enrich the discipline as a whole.

This symposium will focus on both the theory and practice of librarianship in academia, which invites an all-inclusive consideration of libraries and librarians in the learning environment. From case studies involving practice at specific institutions to abstract investigations addressing aspects of the discipline at large, this symposium intends to foster a dialogue on a variety of library issues, such as instruction, reference, collection development, digitization, scholarly communication, and library leadership and management.

(13) The Intersection Between Science and Philosophy. Organizer: Sarah Roe (Department of Philosophy, Southern Connecticut State University, New Haven, CT; roes1@southernct.edu).

In recent times, the information revolution, nanotechnology, genetic engineering, remarkable medical breakthroughs, and other STEM-related developments have changed the way we think about science. Advancements in the sciences pose an ever-present and ever-evolving set of questions about the world and our place within it. Although these questions may not yet have answers, the topic of the proposed session promotes dialogue between scientists, philosophers and historians in an attempt to merge field specific knowledge and broader contextual knowledge. Only through an interdisciplinary approach can we begin to recognize the role of science in our society.

(14) Linking Atmospheric Chemistry, Modeling and Health Effects of Ozone and Particulate Matter with Improved Public Policy for Megacities. Organizers: William R. Stockwell (Desert Research Institute, Reno, NV; William.Stockwell@dri.edu) and Wendy S. Goliff (Cal Poly Pomona, Department of Civil Engineering, Pomona, CA; wsgoliff@cpp.edu).

Ozone and particulate matter are toxic components of the polluted urban atmosphere. These are formed through gas-phase chemical reactions involving nitrogen oxides (NOx), volatile organic compounds (VOC), other compounds and ultraviolet radiation. Air pollution policy makers develop strategies to reduce ozone and particulate matter concentrations that usually involve reducing the emissions of NOx and VOC. Computer simulations involving emission scenarios, atmospheric chemistry and meteorology are used to evaluate the potential effectiveness of emission reduction strategies. Governmental agencies develop strategies to improve air quality based on atmospheric chemistry knowledge and modeling that usually involve reductions of NOx and VOC emissions. Recently, new tools have been developed that relate air quality simulations with health effects and economic impacts. We solicit speakers who will present policy relevant to new research on atmospheric chemistry, air quality modeling and the impact of poor air quality on health and the economy.

(15) Saving the Planet One Course at a Time. Organizer: Jeff Passe (Cal Poly Pomona, Pomona, CA; jpasse@cpp.edu).

A panel of scholars at Cal Poly Pomona are addressing issues of sustainability in a variety of ways – through studying food justice issues in Ethnic and Women Studies, developing educators for sustainability in teacher education courses, creating and managing student farms as community service, examining intergenerational learning in critical food systems courses as part of Liberal Studies, and studying environmental apparel and food issues as part of a Science Technology and Society major. Each presenter will provide a brief overview and then engage the attendees in participatory model lessons related to the goals of their respective courses and programs.

(16) La Brea Tar Pits: Old Bones and New Insights. Organizer: Donald R. Prothero (Geological Sciences, Cal Poly Pomona, Pomona, CA; donaldprothero@att.net).

The tar seeps at Rancho La Brea in Los Angeles are world famous for their enormous numbers of fossils from the last 40,000 years of the Ice Ages. Over 3 million fossils have been collected, with at least 59 mammalian species and 133 bird species, as well as plants, insects, mollusks, and many other groups. These deposits were first extensively collected about a century ago, yet many new specimens are being

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found every day. More importantly, new techniques and new theoretical insights have allowed us to discover even more surprises about evolution and life in the late Pleistocene. Some of these more recent studies include functional morphology of spectacular animals like saber-toothed cats and dire wolves, examination of patterns in evolution of the major climate change of the last glacial-interglacial cycle, and using the large number of juvenile bones to look at patterns of growth in many different mammals. In addition, many DNA and molecular phylogenetic studies have been conducted on living and extinct mammals (including La Brea mammals), giving surprising results. All of these recent developments and more will be discussed in this symposium, allowing the casual scientific listener to be updated about the exciting new insights that are being gleaned about evolution and developmental biology, as well as the climate of the late Pleistocene. This symposium will feature both professionals who have worked on La Brea for many years as well as a number of students who have just begun their research careers with projects at La Brea.

(17) Pharmaceutical Research and Development: From Bench to Patient-Centered Care. Organizer: Jozef Stec (Department of Pharmaceutical Sciences, College of Pharmacy, Marshall B. Ketchum University, Fullerton, CA; JStec@ketchum.edu), Co-organizers: Eva Wong (Department of Pharmacy Practice, College of Pharmacy, Marshall B. Ketchum University, Fullerton, CA; EWong@ketchum.edu), Charitha Madiraju (Department of Pharmaceutical Sciences, College of Pharmacy, Marshall B. Ketchum University, Fullerton, CA; CMadiraju@ketchum.edu), and Ronny Priefer (Department of Pharmaceutical and Administrative Sciences, College of Pharmacy and Health Sciences, Western New England University, Springfield, MA; ronny.priefer@wne.edu).

The proposed symposium has an interdisciplinary nature and will include a variety of topics representing: pharmaceutical research and development, contemporary pharmacy practice, and patient-centered care. This symposium is an excellent opportunity to learn about pharmaceutical research and engage in the dialogue on the impact of pharmaceutical discovery on contemporary pharmacy and patient care.

Student pharmacists will showcase results from a wide range of research areas on effective treatment of known and/or emerging diseases. The discussed topics will highlight the "translational" component of pharmaceutical research, i.e. how fundamental research discoveries can be utilized in the clinic to ultimately improve patient care. Novel evidence-based approaches to patient-centered pharmaceutical care are especially welcome for presentation at the symposium. Diversity of the presentation topics will allow for open discussion and networking among all attendees.

This symposium provides an excellent opportunity for oral presentations by students currently enrolled in Colleges/Schools of Pharmacy. Qualified abstracts relating to bench, translational, and clinical research in areas of broad pharmaceutical sciences and pharmacy practice will be accepted for conference presentation. Accepted abstracts will fall into one of two categories: PharmD track (if presenting author is a PharmD student) or PhD track (if presenting author is a graduate student within a College/School of Pharmacy). Presenting students will automatically enter the presentation competition to win one of two awards, sponsored by the American Association of Colleges of Pharmacy (AACP). The two winners will receive reimbursement of up to $1000 to cover the cost of attendance at any AACP conference.

(18) Multi-Disciplinary Experiences in Flipping Quantitative Courses. Organizers: Alison Baski (Dean of College of Science, Cal Poly Pomona, Pomona, CA) and Victoria Bhavsar (Director of Faculty Center & eLearning, Cal Poly Pomona, Pomona, CA; vbhavsar@cpp.edu). Cal Poly Pomona, Cal State LA, and San Jose State University are collaborating to support faculty in incorporating significant active learning strategies into (i.e. flipping) introductory level quantitative courses including physics, calculus, programming, statistics, and discrete mathematics. This session will include learning outcomes data, reports on how the cross-campus collaboration was achieved, and reports from faculty on strategies to successfully flip courses.

Note: The organizers for this symposium are also organizing a workshop, Active Learning in Quantitative Courses. Please refer to page 20 in this Newsletter for information.


This session illuminates issues relating to culture, identity, nationalism and diaspora. With the defeat of the French in 1954 by the Viet-Minh and the support of the United States for the Republic of Viet Nam, Vietnam became a central issue in the United States. Beyond American protests, student violence, and the clash between political and military attempts at victory, the complexity of ideas and people, culture, and migration was now part of the wider American historical story. This session views what transpired within and outside Vietnam from three different perspectives. (1) The role of cultural heritage in establishing identity and pride in the Democratic Republic of Viet Nam from 1945 to 1975 and 1975 to the present. The emergent conflicts between preserving cultural heritage and development of the country are examined. (2) War and conflict causes migration. Vietnamese migrants settled in Berlin. They were undocumented. What transpired and how the Vietnamese settlers viewed their situation and their rights within the city is diagnosed through the use of ethnographic studies and oral histories in Sweden, Poland, and Germany. (3) An American doctoral anthropology student in Paris becomes interested in Vietnamese ethnography and is invited to carry out research in South Vietnam at the end of the French-Indochina War. For the next eighteen-years he lives in Vietnam, carries out research for...
government related agencies and the military, and becomes part of the Vietnam War. His story, what happened to his personal papers and the attempts to augment his record is discussed.

(20) Smart Grid, Micro Grid Technologies and Cyber Security Issues in a Complex Grid System. Organizers: Sean Monemi (Electrical and Computer Engineering Department, Cal Poly Pomona, Pomona, CA; ssmonemi@cpp.edu) and Tim Lin (Electrical and Computer Engineering Department, Cal Poly Pomona, Pomona, CA; hlin@cpp.edu).

Smart Grid concept refers to modernization of the electricity delivery system so that it monitors, protects and automatically optimizes the operation of its interconnected components, from the central and distributed generator through the high-voltage network and distribution system, to industrial users and building automation systems, to energy storage installations and to end-use consumers and their thermostats, electric vehicles, appliances and other household devices. Smart Grid in large, sits at the intersection of Energy, IT and Telecommunication Technologies. As the flow of electricity from utility to consumer becomes a two-way conversation, important issues are considered such as saving consumers’ money, energy, delivering more transparency in terms of end-user use, and reducing carbon emissions. One of the characteristics of the smart grid technology is its ability to store large data sizes, including insertion of Intelligent Electronic Devices (IED) in power grid network, which raises concerns to issues such as vulnerability and cyber security attacks.


Additive manufacturing (AM) is a method of building a part up layer by layer from powder, wire or foil stock, typically using laser, electron beam or friction to supply energy for consolidation of each layer. The benefits of AM as compared to traditional machining include high level of complexity, reduction of parts counts by printing of entire assemblies in single pieces, rapid prototyping and cost effective production of customized parts (i.e. implants tailored to fit individuals of varying geometry). AM of metals is a relatively new and fast evolving technology that offers a potential paradigm shift in manufacturing for a range of industries. This forum will be used to communicate current research and development activities related to AM processing and resultant materials structure / property relationships of engineering alloys as well as novel alloys.

(22) Creativity, Imagination, and Design in STEM Education. Organized by: Carl A. Maida (University of California, Los Angeles; cmaida@ucla.edu).

With a goal of multidisciplinary dialogue in mind, this session will focus on the role of creativity, design and the imagination in STEM and will combine didactic, experiential, and reflective activities to engage audience members, including teachers and informal science educators, and presenters in a professional learning community experience. The intent is to provide an opportunity for collaborative inquiry and a dialogue on how best to promote creativity and to design deeper learning approaches to STEM in the classroom and beyond. Panelists in roundtable format will discuss current issues and future trends in creativity and design in STEM education, including engaging students in authentic STEM research; integrating creativity into the STEM curriculum; and teacher adoption of educational innovations to teach STEM creatively. Participants in a breakout session will consider ways to foster creativity and the growth of the imagination in learning activities.

Note that a more complete description of this symposium can be found at pacific.aaas.org/2018POMONA/Symposia18.html#22.

(23) The Practice, Ethics, and Communication of Interdisciplinary Research. Organizers: Eman Ghanem (Sigma Xi, The Scientific Research Honor Society, Research Triangle Park, NC; eghanem@sigmaxi.org), Jonathan Clark (Weber State University, Department of Zoology, Ogden UT; jclark1@weber.edu), Linda Mantel (Portland State University, Portland, OR; crablady@teleport.com), Paul Stein (Santa Ana, CA; steinpm@hotmail.com), and Subrata Saha (University of Washington, Seattle, WA; sahas2@u.washington.edu).

Interdisciplinary research requires collaboration between individuals or research teams from two or more distinct disciplines, which integrates the theoretical and experimental frameworks of those disciplines. Breakthroughs in complex research areas such as climate change, public health, and artificial intelligence make a strong case for investigations that integrate multiple research disciplines. However, researchers must overcome obstacles when pursuing these types of projects due to a lack of interdisciplinary engagement, funding sources, and appropriate publication outlets. Similarly, researchers face challenges related to variability among professional recognition practices, differing social and work cultures, and conflicting priorities among research institutions. This symposium will cover topics related to the practice and challenges of interdisciplinary research including recognition, funding, and publications. Ethical considerations related to training, conduct, and multi-institutional research collaborations will also be explored. The symposium will conclude with a panel discussion on effective communication of interdisciplinary research, including internal communication among collaborators and external communication to broader audiences. The session will reflect on the value of membership in multidisciplinary scientific organizations such as Sigma Xi, The Scientific Research Honor Society and AAAS as platforms for interdisciplinary and other types of research collaborations.
(24) Structural Engineering Advancements for Earthquake Resistance. Organizer: Felipe J. Perez (Department of Civil Engineering, Cal Poly Pomona, Pomona, CA; fper ez@cpp.edu).

Earthquakes have significantly impacted many cities around the globe. The last major earthquake to strike the Los Angeles area was the Northridge earthquake of January 17, 1994. This seismic event resulted in billions of dollars in property damage and in the loss of life. In response to the need for safer structures, research efforts aimed at mitigating the deleterious effect of earthquakes on structures continue. This symposium explores advancements in structural engineering for earthquake resistance. These advancements may include, but are not limited to, the development of new seismic structural systems; retrofit techniques for existing structures; new methodologies for earthquake-resistant design; instrumentation for post-earthquake assessment of structures; and reconnaissance reports on structural performance from recent earthquakes. Student researchers, faculty, and working professionals are invited to participate.

Note: The organizers for this symposium are also organizing a workshop, Active Learning in Quantitative Courses. Please refer to page 20 in this Newsletter for information.

(25) Implications of Foodborne Pathogens for Agriculture. Organizers: Shelton E. Murinda (Professor – Animal & Veterinary Sciences/Food Safety, Director – Center for Antimicrobial Research & Food Safety, Campus Coordinator – Agricultural Research Institute (ARI), Don B. Huntley College of Agriculture, California State Polytechnic University, Pomona, CA; semurinda@cpp.edu) and A. Mark Ibekwe (Research Microbiologist, US Salinity Lab, Riverside, CA; mark.ibekwe@ars.usda.gov).

The contamination of food by pathogens, e.g., E. coli, Salmonella, Streptococcus aureus, Listeria, Campylobacter spp., etc., can cause major human and animal ailments, including death. Understanding the sources of these pathogens (e.g., farm environment, water, milk, produce, meat, etc.) and their methods of dissemination into the food chain is crucial to mitigate and control their spread. This symposium will bring together researchers from industry and academia in the broad area of farm to fork continuum.

(26) Corrosion and Protective Coatings. Organizers: Vijayanur Ravi (Department of Chemical and Materials Engineering, Cal Poly Pomona, Pomona, CA; vravi@cpp.edu) and Michael F. Hurley (Boise State University, Boise, ID; mikehurley@boisestate.edu).

The corrosion of metallic materials affects almost every conceivable industrial sector and is a matter of major economic concern. This symposium will bring together researchers addressing different areas of corrosion and protective coatings/surface modification.

(27) Microbiome in the Environment: Health and Disease. Organizer: Carolina Livi (Ashland, OR; cblivi@gmail.com).

The microbiome is being implicated and correlated to a number of phenotypes. Several additional mechanisms of molecular regulation discoveries have added to biological complexity. Now the microbiota add another layer to be analyzed with the full range of omics technologies. In this session we will have speakers approaching the study of microbiota from a range of perspectives.

(28) Exploring Public Facets of Science and Technology Studies. Organizers: Erik M. Conway (NASA Jet Propulsion Laboratory, MS 111-B20, 4800 Oak Grove Dr., Pasadena, CA 91109; Erik.M.Conway@jpl.nasa.gov) and Zuoyue Wang (California State Polytechnic University, Pomona, CA, 91768; zywang@cpp.edu).

This symposium will explore the various ways that science and technology studies inform public history, public policy, and undergraduate teaching. Speakers will discuss their experiences in building STS programs in California universities, in participating in public discussions around science and technology policy issues, and in doing laboratory history writ large.

Contributed Papers and Posters

Those wishing to submit papers for presentation at a contributed paper session (oral or poster) should refer to the instructions for abstract preparation and submission on pages 14 and following in this Newsletter.

The deadline for submitting abstracts for contributed papers (non-symposium) is Wednesday, 18 April 2018. If an abstract comes in after this date, it may not be listed in the program. Also, be aware that the abstract you submit will be published as written. It will not be edited. If it contains errors, they will appear as submitted. Be sure to keep the length of your abstract to no more than 250 words and use 10-point Times New Roman font (no exotic fonts, please!). Don’t forget to state clearly if yours is a student presentation so that it will be included in the judging competition. Please remember that if you are a student who intends to be in the competition for an Award of Excellence and you are part of a symposium with your presentation scheduled on Thursday afternoon or Friday (check with the planner of your symposium), you must also present your work as a poster in order to be judged. Otherwise, you will not be eligible for student awards due to the conclusion of judging Thursday morning. Awards will be announced that evening.

Poster Sessions

Each poster will be assigned a display space of 48” tall x 48” wide (1.2 m x 1.2 m) on a poster display stand and will be mounted using map pins. Posters larger than the specified size may be refused display privileges. Posters will be grouped by discipline and subject matter. In order to assure fairness, the Pacific Division Council took action stating that all student posters must fit within the assigned display space to be eligible for student Awards of Excellence. The use of
extra space or an over-sized poster will disqualify a student from the awards competition.

Student posters will be judged to receive Awards of Excellence. Students must be present during the entire judging period to allow judges the opportunity to discuss their work and to evaluate their posters.

If you need a bit of help organizing the content of your poster, a website containing excellent information on poster preparation is www.ncsu.edu/project/posters.

Societies and Pacific Division Sections
Accepting Contributed Papers for Presentation at the Meetings

Agriculture, Food, and Renewable Resources. Section chair and program organizer: Please contact the Pacific Division office, rchristi@sou.edu, for information on this section.

Anthropology and Archaeology. Section chair and program organizer: Dr. Sang-Hee Lee, Department of Anthropology, University of California Riverside, 900 University Avenue, Riverside, CA 92521. Contact: shlee@ucr.edu. Section co-chair and organizer: Dr. Claudia Garcia-Des Lauriers, Department of Geography and Anthropology, Cal Poly Pomona, 3801 W. Temple Ave., Pomona, CA 91768. Contact: 909-869-5264; clauriers@cpp.edu.

Atmospheric and Hydrospheric Sciences. Section chair and program organizer: Dr. Clive E. Dorman, Research Oceanographer, Integrative Oceanography Division, Scripps Institution of Oceanography Dept 0209, University of California, San Diego, La Jolla, CA 92093-0209. Contact: cdorman@ucsd.edu.

Cell and Molecular Biology (including Medical and Dental research in these areas). Section chair and program organizer: Dr. Kristen Mitchell, Department of Biology, Boise State University, Boise, ID 83725. Contact: 208-426-4620; kristenmitchell@boisestate.edu.

Chemistry and Biochemistry. Section chair and program organizer: Dr. Owen M. McDougal, Department of Chemistry and Biochemistry, Boise State University, Boise, ID 83725. Contact: 208-426-3964; owenmcdougal@boisestate.edu.

Computer and Information Sciences. Section chair and program organizer: Please contact the Pacific Division office, rchristi@sou.edu, for information on this section.

Earth Sciences. Section chair and program organizer: Dr. Jad D’Allura, Department of Geology (emeritus), Southern Oregon University, Ashland, OR 97520. Contact: 541-899-7010 or 541-690-7739; dallura@sou.edu and rockit@dishmail.net (copy e-mail to both accounts).

Ecology, Environmental Sciences, and Sustainability. Section chair and program organizer: Dr. Richard Van Buskirk, Environmental Studies, Pacific University, 2043 College Way, Forest Grove, OR 97116. Contact: 503-352-2251; vanbuskirk@pacificu.edu.

Education. Section chair and program organizer: Dr. Jacobitz, Department of Biology, University of San Diego, 5998 Alcalá Park, San Diego, CA 92110. Contact: 619-260-7820; jacobitz@sandiego.edu.

Evolution, Organismal Biology, and Biodiversity. Section chair and program organizer: Dr. Julia Ruppell, Department of Biology, Pacific University, 2043 College Way Forest Grove, OR 97116. Contact: ruppell@pacificu.edu.

General and Interdisciplinary. Section chair and program organizer: Ms. Crystal Goldman, UC San Diego Library, University of California, San Diego, 9500 Gilman Drive #175Q, La Jolla, CA 92093. Contact: 858-246-1626; clgoldman@ucsd.edu.

History and Philosophy of Science. Section chair and program organizer: Dr. Sarah M. Roe, Department of Philosophy, Southern Connecticut State University, 501 Crescent Street, New Haven, Connecticut 06515. Contact: 203-392-6767; roes1@southernct.edu.

Materials Science. Section chair and program organizer: Dr. Vilupanur Ravi, Department of Chemical and Materials Engineering, California Polytechnic University, Pomona, 3801 W. Temple Avenue, Pomona, CA 91768. Contact: 909-869-2627 vrvavi@csupomona.edu.

Mathematics. Section chair and program organizer: Dr. Liljanababinkostova, Department of Mathematics, Boise State University, 1910 University Drive, Boise, ID 83725. Contact: 208-426-1172; liljanababinkostova@boisestate.edu.

Pharmaceutical Sciences. Section chair and program organizer: Dr. Jozef Stec, Department of Pharmaceutical Sciences, College of Pharmacy, Marshall B. Ketchum University, 2575 Yorba Linda Blvd., Fullerton, CA 92831-1699. Contact: 714-872-5711; jstec@ketchum.edu.

Physics. Section chair and program organizer: Dr. Ellen Siem, Department of Physics and Engineering, Southern Oregon University, 1250 Siskiyou Blvd., Ashland, OR 97520. Contact: 541-552-6489; sieme@sou.edu.

Psychology. Section chair and program organizer: Dr. Veronica Galván, Department of Psychology, University of San Diego, San Diego, CA 92110. Contact: 619-260-7739; vgalvan@SanDiego.edu.

Science and the Arts and Humanities. Section chair and program organizer: Dr. Robert L. Chianese, Department of English, California State University, Northridge, Northridge, CA 91330; Current Contact Information: 2465 Hall Canyon Road, Ventura, CA 93001, 805-643-5034; rlchianese@gmail.com.

Social, Economic and Political Sciences (including Health Services). Section chair and program organizer: Dr. Carl A. Maida, UCLA Schools of Dentistry and Medicine, University of California, PO Box 951668 CHS, Los Angeles, CA 90095. Contact: 805-492-5613; cmaidat@ucla.edu.
Call for Papers and Abstracts

Members of AAAS and its affiliated societies, students, teachers and other scientists are encouraged to participate in the annual meeting of the Pacific Division of AAAS by presenting papers and/or posters. Procedures for submitting abstracts for inclusion in the technical sessions of this meeting are presented in brief below and in full starting on page 14 of this Newsletter. Read both carefully before submitting an abstract!

For presenters of contributed papers or posters, e-mail the title, abstract and other required information (see instructions below and also starting on page 14 of this Newsletter) as a Word (.doc or .docx) or .rtf attachment to the chair of the appropriate society or section (see page 31 of this Newsletter) and also the Pacific Division office at rehrishi@sou.edu. If your abstract contains special characters, fax a copy of it with the special characters clearly identified and the name of the typeface used to the Pacific Division office, 541-552-8457, in addition to the e-mail submission. The deadline for contributed paper abstract submissions is 18 April 2018. Students wanting to compete for an Award of Excellence must identify themselves as such on Line 7 of their abstract submissions so that they will be included in the judging.

Oral contributed papers are scheduled every 20 minutes, allowing about 14 minutes for the talk, about five minutes for questions at the end, and a minute or so for PowerPoint change-over. If you are presenting in a symposium, please contact the symposium organizer for presentation details.

The deadline for symposium abstract submissions is 2 April 2018. Students presenting in a symposium, please contact the symposium organizer for presentation details.

Format your abstract submission as follows:

Line 1: Submitter’s name
Line 2: Submitter’s telephone number and e-mail address
Line 3: Presenter’s name (if different from above) or “SAME” (if same as above)
Line 4: Presenter’s telephone number and e-mail address (if different from above)
Line 5: For contributed papers and posters, list the name of the Society, section or program to which you are submitting your presentation for review (see page 31 of this Newsletter for names of sections chairs). For those presenting in a symposium, identify the name of the symposium here and send your abstract directly to the symposium planner.

Line 6: Type of presentation (ORAL or POSTER)

Line 7: Is the presenter a student? (STUDENT or NOT A STUDENT). If a student, indicate level (PRE-COLLEGE, UNDERGRADUATE, or GRADUATE)

Line 8: Special equipment needs (anything in addition to standard computer, computer projector, and PowerPoint)

Line 9 ff: Paper Title Italicized and in Title Case, AUTHOR’S NAME(S) (Full address(es), including institution, mailing address, city, state, zip code, and e-mail address(es)). Refer to the example below for additional information.


Example of a properly formatted abstract submission (lines 9 ff and 10 ff), plus additional information – Complete instructions for abstract formatting and submission can be found starting on page 14 of this Newsletter.

Formatting an Abstract for Submission to a Pacific Division Meeting, SAMUEL KRAFTER1*, YESIMAN AUTHOR1∆, IDIDTHEWRITING2, and IDIDA DeREADIN3 (1Department of Biology and 2Department of English, Southern Oregon University, 1250 Siskiyou Boulevard, Ashland, OR 97520, spkrf@biology.sou.edu, author@biology.sou.edu, iwriting@english.sou.edu; 3Department of Academic Speech, Bureau of Speech Employment, 12 Back Street, Medford, OR 97504, dereadingi@BSE.org).

All authors should be listed sequentially, starting with the person who contributed the most to the project and presentation and ending with the person who contributed the least. If two or more persons contributed equally, place a superscripted triangle (∆) next to each name. If more than one address occurs among the authors, place a superscripted number on the right of each author’s last name, followed by the corresponding superscripted number at the start of each unique address. If there is more than one author, place an asterisk (*) next to the last name of the presenter(s). Submissions not formatted in this manner may be returned for reformating or rejected.

Indent the first line of each paragraph of your abstract (Line 10 ff) 0.25 inches by using the first line indent command of your word processor. Do not use a tab or the spacebar! All text should be fully justified.

Use 10 pt Times New Roman font and “NORMAL” style for the entire submission. If you use a different font or style, your abstract will be reformatted to this font and style. If your text contains special characters, they likely won’t accurately survive e-mailing and/or any required reformating. Thus, in addition to an e-mail submission, hard copies of abstracts that contain special characters should be faxed (541-552-8457) or mailed to the Pacific Division office. When doing this, be sure to point out special characters in your abstract and identify the font set that contains them. If exotic fonts are used, we probably won’t have them available, so use common font sets (e.g. Symbol, Wingdings, etc.) for your special characters!
100th Annual Meeting
SOUTHERN OREGON UNIVERSITY
Ashland, Oregon
17 – 21 June 2019

Call for Symposium and Workshop Proposals

Members of AAAS and its affiliated societies, students, teachers and other scientists are encouraged to participate in the 2019 annual meeting by developing symposia and/or workshops. Persons wishing to develop a program for the Ashland meeting should e-mail the title, description and other information (see instructions below) to the Pacific Division office at rchristi@sou.edu.

Symposia are scheduled in 1/2-day (3 to 4 hours) sessions, and for this meeting may be from 1 to 6 sessions in length (1/2 day to three days). Individual symposium presentations are scheduled at 30-minute intervals (about 29 minutes for presentation and questions and 1 minute for changeover to next speaker), but the actual scheduling depends on the needs of the symposium and may be longer or shorter, even a combination of different lengths. Please contact Dr. Roger Christianson, Pacific Division Executive Director, to discuss your specific needs. When preparing your submission, please indicate which presenters are confirmed. (see 10 below). If you do not yet have a list of presenters, you may submit a list of potential presentation topics. Please keep in mind that we need as much information as early as possible in order to adequately consider and publicize the symposium.

Workshops are generally scheduled for a 1/2-day or full-day and may or may not accompany a symposium. If special facilities and/or equipment are required, be sure to identify what you need as completely as possible in your submission (10 below). If a cost is incurred, it will be passed along to participants as a workshop fee in addition to the ordinary meeting registration fee.

Questions? Contact Dr. Roger Christianson at 541-552-6747 or rchristi@sou.edu.

Format your submission as below. Missing information will cause the proposal to be returned for completion.

1: Organizer’s name, affiliation, address, telephone number and long-term e-mail address
2: Co-organizer’s name(s) (if any) name(s), affiliation(s), address(es), telephone number(s) and long-term e-mail address(es)
3: Is this a proposal for a Workshop or a Symposium?
4: Do you anticipate having any students among the presenters? If so, approximately how many?
5: Number of sessions requested (a session is roughly three to four hours, depending on the needs of the program)
6: Is there a particular day on which this program must occur? If so, what is it and why must it be scheduled on that day?
7: Pacific Division section(s) and/or affiliated society you are requesting to sponsor this program (see page 31 of this Newsletter). You must identify at least one section or society to sponsor your program or your proposal will be returned.
8: Title of proposed program
9: Brief description of proposed program (please limit to 250 words)
10: If a symposium, list the names of proposed (confirmed?) speakers, including academic/professional affiliation and e-mail address for each. Presentation titles are optional at this time and will be requested later, along with an abstract for each presentation. Abstracts are to be collected no later than 1 April 2019 and vetted by the symposium organizer, who then forwards them as a package to the Pacific Division office (rchristi@sou.edu) no later than Wednesday, 10 April 2019. If a workshop, indicate facilities and/or special equipment required and number of participants that can be accommodated.
AAAS, Pacific Division 99th Annual Meeting
CAL POLY POMONA
ON-CAMPUS HOUSING/MEALS or MEALS PACKAGES

One form must be submitted for each individual requesting a campus housing/meals or meals package. Type or print this form legibly! If faxing, use black ink. All blanks must be filled in.

Name ________________________________________________________________________

☐ Male  ☐ Female

Address ______________________________________________________________________

City, State, Zip ______________________________________________________________________

Phone (day): __________________  Phone (evening): __________________  E-mail: __________________

For double occupancy: name of requested roommate ______________________________________________________________________ or ☐ assign roommate ______________________________________________________________________

For double occupancy, if no roommate specified, a roommate will be assigned based on gender selection.

Refer to page 9 of this Newsletter for a description of the campus accommodations and page 11 for a description of meals only packages listed below. No refunds can be given for unused nights of stay or meals.

1a. HOUSING REQUEST FOR CAL POLY DORM ROOM:
   Three night basic housing package – CHOOSE ONE
   Check in Tuesday, 12 June; check out Friday, 15 June
   Includes 9 meals: Tu–D; Wed–B, L, D; Th–B, L, Banquet; F–B, L
   ☐ Single, per person ............................................ $258.00
   ☐ Double, per person ........................................... $225.00

   Four night basic housing package – CHOOSE ONE
   Check in Tuesday, 12 June; check out Saturday, 16 June
   Includes 11 meals: Tu–D; Wed–B, L, D; Th–B, L, Banquet; F–B, L, D; Sa–B
   ☐ Single, per person ............................................ $321.00
   ☐ Double, per person ........................................... $277.00

1b. MEALS ONLY PACKAGES
   ☐ Three day off campus or KWest meals only package ... $ 90.00
       Includes 6 meals (no breakfasts): Tu–D; Wed–L, D; Th–L, Banquet; F–L
   ☐ Four day off campus or KWest meals only package. $100.00
       Includes 7 meals (no breakfasts): Tu–D; Wed–L, D; Th–L, Banquet; F–L, D

2. BANQUET ENTREE CHOICE
   Each of the above packages includes one banquet ticket. Please choose your entree by checking the appropriate box.
   ☐ Tri-tip  ☐ Turkey  ☐ Vegetable Wellington

3. STUDENTS ELIGIBLE FOR STUDENT AWARDS
   ☐ If presenting student, check box to left and deduct $20 from price of package (1 package only!)

4. TOTAL AMOUNT DUE
   $ __________

Deadline for Application
The completed request for housing must be received in the Pacific Division office no later than Tuesday, 8 May 2018. Space is on an “as available” basis. The completed request for meals must be received in the Pacific Division office no later than Friday, 25 May 2018.

Three Ways to Apply for Housing and/or Meals
1. Complete this form and send it to the Pacific Division office, either with a check in the full amount payable to AAAS, Pacific Division, or with credit card information completed below.
2. Call the Pacific Division office, 541-552-6869, between approximately 12:30 p.m. and 4:30 p.m. Pacific Time. Your information will be taken, along with the appropriate credit card information.
3. Fax your housing request, including credit card information. The 24-hour fax number is 541-552-8457. It is a dedicated line into the Pacific Division’s office.

Cancellation/Refund Policy
All cancellation/refund requests for housing/meals and/or meals alone must be made in writing to the Pacific Division office via USPS or e-mail. Requests relating to housing must be received no later than 8 May 2018. Requests relating to meals only must be received no later than 25 May 2018. Refunds are subject to a $15 processing charge and an additional 3.5% of the total if payment was by credit card.

Payment by Credit Card
Type of Card  ☐ Visa  ☐ Master Card  ☐ Discover  ☐ Am Ex

Card Number __________________________  Security # ________  Expiration Date ________

Complete Card Billing Address __________________________

Cardholder __________________________  City ________  State ____  Zip ________

Today’s Date ________  Today’s Date ________

Signature __________________________________________
ADVANCE REGISTRATION FORM
FOR EARLY REGISTRATION, FIELD TRIPS, and OTHER SPECIAL EVENTS
A separate form must be filled out and submitted for each registrant.
Submit this form by mailing it to AAAS, Pacific Division • Southern Oregon University • 1250 Siskiyou Blvd • Ashland, OR 97520 or calling with information: 541-552-6869 or FAXing to our dedicated FAX line: 541-552-8457
PRINT CLEARLY or TYPE this form! If faxing, use only black ink!

Name: ___________________________________________________________ Date: ______________
Mailing Address: ___________________________________________________________________________________________
City, State, Zip: ___________________________________________________________________________________________
E-mail: ___________________________________________________________ Day Phone: ______________________________

Institution/Company (for your name tag – if blank, city & state will be used): ______________________________________
Memberships: ___ AAAS ☐ Yes ☐ No ___ Sigma Xi ☐ Yes ☐ No ___ AACP ☐ Yes ☐ No

How did you first hear about this meeting? ________________________________________________________________
Are willing to help judge student presentations at this meeting? ☐ Yes ☐ No

Check all that apply: ☐ presenter* ☐ program planner* ☐ field trip planner* ☐ maker exhibitor
*In which program, field trip, or section are you presenting or planning? _______________________________________

(Note: Above must be filled out in order to receive program planner/presenter rate below.)

A. MEETING REGISTRATION FEES:

<table>
<thead>
<tr>
<th></th>
<th>Received by</th>
<th>Received by</th>
<th>On-site</th>
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<tbody>
<tr>
<td>Full Meeting</td>
<td>27 April</td>
<td>25 May</td>
<td>On-site</td>
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<tr>
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<td>☐ $100.00</td>
<td>☐ $125.00</td>
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<tr>
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<td>☐ $80.00</td>
<td>☐ $90.00</td>
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<tr>
<td>Teacher K-14</td>
<td>☐ $55.00</td>
<td>☐ $62.50</td>
<td>☐ $70.00 ☛ Request teacher K-14 stipend? ☐ Yes ☐ No</td>
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<td>☐ $70.00</td>
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<td>☐ $62.50</td>
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<tr>
<td>Unemployed Professional</td>
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<tr>
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<td>☐ $40.00</td>
<td>☐ $45.00</td>
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<tr>
<td>Emeritus/Retired Professional</td>
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<td>☐ $62.50</td>
<td>☐ $70.00</td>
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(*)Student registrations include a one-year student membership with AAAS, including on-line access to Science magazine. Be sure to fill out and include the membership form on page 37 of this Newsletter when you register for the meeting.

One-day of Meeting
<table>
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<th>Field Trip Only</th>
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<tr>
<td></td>
<td>☐ $80.00 ☐ $90.00 ☐ $100.00 ☛ Select day: ☐ Tues ☐ Wed ☐ Thurs ☐ Fri</td>
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<tr>
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<td>☐ $10.00 ☐ $10.00 ☐ $10.00</td>
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B. DIVISION BANQUET: The Division banquet will be held on the evening of Thursday, 14 June. Students who are registered for and are making a presentation at the meeting are invited to attend the banquet at the reduced cost of $20.00. Additional banquet tickets for students are $45.00 each. Be sure to identify the quantity of each entrée below.

Important note: Fill in this information only if you are not staying in the student dorms or have not purchased one of the meals packages, as these already include a banquet ticket!

☐ One Student Presenter Ticket @ $20.00 Choose one: ☐ Tri-tip ☐ Turkey ☐ Vegetable Wellington

☐ Tickets @ $45.00 ea. Mark quantity for each selection: ☐ Tri-tip ☐ Turkey ☐ Vegetable Wellington

Complete page 36 before submitting.
Student registrants must also complete and return page 37.
C. WORKSHOPS: Workshop is priced per person (pp). See page 18 of this Newsletter for details.

Friday, 15 June
Advanced Beer Tasting Course at Innovation Brew Works ___ tickets @ $59.00 pp $ __________
Must be at least 21 years old to participate.

All other workshops are offered at no additional charge as part of your meeting registration.

D. FIELD TRIPS:
Tuesday, 12 June
Science and Art at the Getty Center ___ tickets @ $55.00 pp $ __________
lUNCH IS ON YOUR OWN
Hydrogeology of Icehouse Canyon ___ tickets @ $45.00 pp $ __________
SANDWICH TYPE: □ MEAT □ VEGETARIAN

Saturday, 16 June
La Brea Tar Pits and Museum ___ tickets @ $45.00 pp $ __________
lUNCH IS ON YOUR OWN
The Huntington sign up at meeting registration desk
TRANSPORTATION & LUNCH ARE ON YOUR OWN; ENTRY FEE @ DOOR

E. EVENTS: Please help us to estimate the number of people planning to participate in the events listed below, please indicate the number of people in your party that plan to attend each event.

___ Tuesday Reception
___ Wednesday Cal Poly Pomona President’s Reception

CREDIT CARDS
To pay for your advance registration by credit card, you may
• mail this completed form to the address below, or
• phone the information to 541-552-6869 between about 1:00 p.m. and 5:00 p.m. Pacific Time, or
• fax this completed form to 541-552-8457 (dedicated fax line into the Pacific Division office).

Type of Card: □ Visa □ Master Card □ Discover □ AmEx
Card Number ____________________________ Security # ________ Expiration Date __________
Name on Card ____________________________
Complete Billing Address for Card ____________________________
Signature of Cardholder ____________________________ Date __________

COMPLETE AND RETURN THIS FORM WITH YOUR PAYMENT TO:
AAAS, Pacific Division • Southern Oregon University • 1250 Siskiyou Blvd • Ashland, OR 97520, or
call us with the information: 541-552-6869, or FAX us this form: 541-552-8457
Should you have questions, e-mail us at aaaspd@sou.edu or call 541-552-6869 M – F 1:00 p.m. to 5:00 p.m., Pacific Time.
STUDENTS!

Students must fill out this form and return it along with their Advance Registration Form in order to receive their one-year membership in AAAS! This form is for use only by students who are registering for the 2018 Annual Meeting of the AAAS, Pacific Division in Pomona, California.
Agroecosystems and the Environment: Source, Control, and Remediation of Potentially Toxic, Trace Element Oxyanions (1998; cloth, 213 pp. – ISBN 0-934394-12-1); $20.00

Art Inspired by Science (2012; paper, 50 pp., 38 color plates – ISBN 978-0-9849810-0-7); $15.00

Biodiversity and Taxonomy (2005; paper, 236 pp. – ISBN 0940228-62-9); $35.00


Crater Lake: An Ecosystem Study (1990; cloth 224 pp. – ISBN 0-934394-07-5); $26.95

Dietary Factors and Birth Defects (Birth Defects; 1993; paper, 410 pp. – ISBN 0-934394-08-0-3); $28.50


Genealogy and Ecogeographic Races (1995; cloth, 275 pp. – ISBN 0-934394-10-5); $28.95

Late Cenozoic History of the Pacific Northwest (1985; cloth, 417 pp. – ISBN 0-934394-06-7); $28.95

Patterns of Evolution in Galápagos Organisms (1983; cloth, 568 pp. – ISBN 0-934394-05-9); $32.50

Museums and Other Institutions of Natural History: Past, Present, and Future (2004; paper, 325 pp. – ISBN 0-940228-60-2); $35.00

San Francisco Bay: The Ecosystem (1996; cloth, 542 pp., color plates – ISBN 0-934394-11-3); $45.00

San Francisco Bay: Use and Protection (1982; paper, 310 pp. – ISBN 0-934394-04-0); $17.95

Proceedings Series

Meeting Program with Abstracts (Proceedings Vol. 1, Part 1, 1982 through Vol. 36, Part 1, 2017); $12.00 each

Evolutionists Confront Creationists (Proceedings Vol. 1, Part 3, 1984; paper, 213 p.); $12.00

Scientific Research and New Religions (Proceedings Vol 2, Part 2, 1985, paper, 180 pp.); $12.00

California’s Master Plan for Higher Education in the Twenty-first Century (Proceedings, Vol 13, Part 2, 1996; paper, 118 pp.); $12.00

Address orders to: AAAS, Pacific Division • Southern Oregon University • 1250 Siskiyou Blvd. • Ashland, OR 97520

Phone orders: 541-552-6869 • dedicated FAX orders: 541-552-8457 • E-mail orders: aaaspd@sou.edu

ALL SALES FINAL — NO RETURNS

Payment must accompany all orders. Make checks payable to AAAS, Pacific Division or use credit card.

<table>
<thead>
<tr>
<th>Quantity*</th>
<th>Title</th>
<th>Price Each</th>
<th>Total</th>
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**Attach extra sheet if necessary.** *Maximum 3 of any one title. Contact us for quantity orders.

**Shipping/handling fees:** Domestic, $3.50 first book; $1.50 each add’l. Non-U.S. addresses, contact us for cost.

TOTAL

SHIPPING (see note to left)

TOTAL DUE WITH ORDER

Ship To: ____________________________ Date ____________________________

Address ____________________________ State _______________ Zip _______________

Daytime Phone ____________________________ e-mail ____________________________

**CREDIT CARD**

☐ Visa ☐ Master Card ☐ Discover ☐ American Express

Credit Card # ____________________________ Security Code _____ Expiration Date ____________________________

Name on Card ____________________________ Signature of Cardholder ____________________________

Complete Billing Address for Card ____________________________

Page 38 E-mail us at aaaspd@sou.edu
Map of Cal Poly Pomona
Annual Meeting of the AAAS, Pacific Division
12 – 15 June 2018

- Overnight Rooms: Kellogg West (76 & 77); Village (blue rectangle); Dorms (20 – 23, 57, 58)
- Student Parking: (C, F, J, M, and 106)
- Food: Bronco Student Center (35) and Los Olivos Dining Commons (70)
- Meeting Venue: Business (162 – 164) and Engineering (9 and 17)
AAAS, Pacific Division
99th Annual Meeting
Cal Poly Pomona
Pomona • California
12 – 15 June 2018
PRELIMINARY ANNOUNCEMENT of SYMPOSIA,
FIELD TRIPS, WORKSHOPS and OTHER EVENTS

SYMPOSIA
(Complete listings start on page 24)

- Rocket Propulsion
- Renewable Energy and Thermal Science: Materials, Design, and Applications
- Space Power Technologies - Thermoelectrics, Fuel Cells and Batteries
- Microbiome in the Environment: Health and Disease
- Nanomaterials: Synthesis, Manufacturing, and Applications
- Advances in Engineering Education
- Strategies for Active Learning in Undergraduate Biology Education
- Saving the Planet One Course at a Time
- Multi-Disciplinary Experiences in Flipping Quantitative Courses
- Implications of Foodborne Pathogens for Agriculture
- La Brea Tar Pits: Old Bones and New Insights
- Smart Grid, Micro Grid Technologies and Cyber Security Issues in a Complex Grid System
- Structural Engineering Advancements for Earthquake Resistance
- Linking Atmospheric Chemistry, Modeling and Health Effects of Ozone and Particulate Matter with Improved Public Policy for Megacities

FIELD TRIPS
(Descriptions start on page 21)

- Science and Art at the Getty Center
- Hydrogeology of Icehouse Canyon
- La Brea Tar Pits and Museum
- Huntington: Library, Art Collections, and Botanical Gardens

WORKSHOPS
(Complete descriptions start on page 18)

- Advanced Beer Tasting Course at Innovation Brew Works
- Examples of Strategies for Active Learning in Undergraduate Biology Education
- A Hands-on Introduction to Wearable Fashion Electronics
- Communicating Science to the Public: Setting Up speaking Clubs/Circles
- How Do You Carry Out Research in the Teaching Lab?
- Active Learning in Quantitative Courses
- 3D Printing and Open Source Hardware Science Workshop

SCIENTIFIC MAKER EXHIBIT
(see page 15)

NOTE: These programs are being planned as of 4 April 2018. However, changes in offerings sometimes occur. For up-to-date information, please visit the Pacific Division website, pacific.aaas.org.