

APS Far West Section

2016 Newsletter



Letter from the Chair

Dear Fellow Far-Westeners,

APS Sections are organized around geographical regions, and the Far West Section encompasses California, Hawaii, and Nevada. Being a regional organization of the APS, the focus of the Far West Section is to provide a forum for members to meet and interact locally. Our annual meetings are at venues throughout the region: At Cal State Long Beach in 2015, at the University of Nevada, Reno, in 2014. This [year's meeting](#) will be at the University of California, Davis, on October 28 and 29. Because the meetings are locally organized and held, they are low cost and relatively easy to reach. Yet the science presented at our annual meetings is world-class!

Think of our meetings as a more intimate, smaller version of the APS March or APS April meeting. It's a chance to meet fellow physicists from disciplines and institutions very different from your own and to get an update on what's happening across many fields.

The Far West Section has a strong focus on providing an opportunity for students to attend a scientific meeting and present their work. For many students, especially for undergraduate students, it will be the first time that they present their work in a professional, APS-style meeting. The Far West Section encourages participation by offering student presenters free, shared rooms at local venues, subsidized registration and travel, and a chance to network with established physicists, including those who are giving the invited talks. The Far West Section gives out awards to the best presentations by undergraduates, graduates, and postdocs. For a list of past winners see the Far West Section's [web page](#).

Sections also foster communication between the local industrial and academic APS members. We have an increasing presence of local industry at our annual meetings who are looking for candidates wanting to join their company. We very much welcome local physics teachers and members of the AAPT to our meetings. Many retired physicists have discovered our meetings to be a great way to stay in touch with their peers without traveling long distances.

For those of you who want to be even more active in the Section, we offer many ways to do so. If you are interested in serving as one of the officers of the Section, or wish to nominate someone else, please contact me or Vice-Chair Hendrik Ohldag (SLAC); both of us are on this year's Nominating Committee. Very importantly, vote during our elections!

If you wish to make suggestions for invited speakers, contact Chair-Elect Andreas Bill (Cal State Long Beach) and Past Chair Doug Singleton (CSU Fresno) who are part of this year's Program Committee. Contact us also, if you wish to host one of the Section's meetings at your institution. There is no better way to make the meeting even more local!

Your membership strengthens the Far West Section also in another, utterly crucial way. The APS provides funds to the section proportional to its membership level. Thus, even though there is no cost for you to join the Far West Section, your membership enables everything the section does.

When you [register](#) for this year's annual meeting you will find a new feature: You will be able to donate to the Section's student travel program. In the coming months we are planning to expand our fundraising efforts in order to put our awards program on solid financial footing.

Finally, I would like to express my sincere gratitude to all of you who are contributing to the health of our Section by being a member. See you at one of our meetings or get in touch with us electronically. Our contact information is given in the "[Executive Committee](#)" tab on the Far West Section's web page.

With greetings from the Far West,

Peter Beiersdorfer
Physics Division
Lawrence Livermore National Laboratory
Livermore, CA 94550

2016 FWS Annual Meeting, the University of California, Davis



The poster for the 2016 Annual Meeting of the American Physical Society Far West Section (California-Nevada-Hawaii) is held at the University of California, Davis, from October 28-29, 2016. The event is organized by the Department of Physics. The poster features a blue and yellow color scheme with a photograph of a modern building at night. It lists several plenary talks and an after-dinner speaker, along with registration information and contact details.

**2016 Annual Meeting
American Physical Society
Far West Section** (CALIFORNIA-NEVADA-HAWAII)

October 28-29, 2016

Department of Physics
University of California Davis

PLENARY TALKS

Robin Erbacher (UC Davis)
"A New Era of Particle Discovery"

Jonathan Williams (U of Hawaii)
"Observing the birth of planets
around nearby stars"

Alan Weinstein (CalTech)
"Gravitational Waves Observed by LIGO"

Andrew Geraci (U of Nevada, Reno)
"The precision frontier: hunting for new
short-range forces with resonant sensors"

AFTER DINNER SPEAKER

Henry Garcia (Pixar)
"From Nanotech to Infinity and Beyond:
A physicist's journey into the world
of computer animation"

WELCOME RECEPTION
6 p.m. - October 27

ONLINE REGISTRATION BEGINS
September 1, 2016
www.aps.org/units/fws/meetings/annual/

LOCAL CONTACT: Sergey Sarason, sarason@physics.ucdavis.edu
PROGRAM CONTACT: Douglas Singleton, dougs@ucdavis.edu

APS physics UCDAVIS DEPARTMENT OF PHYSICS

The next meeting is coming up soon and will be held at the University of California in Davis on October 28-29, 2016. The two-day meeting will feature four exciting plenary talks covering scientific topics from the new era of particle discoveries and gravitational waves to planetary research and atomic physics. As always we are also very excited to be able to present a fascinating after dinner speaker. The program also features a tutorial including resume and CV writing. And finally, the most important part of the meeting is two days filled with talks by you and all your colleagues, sharing your latest results and research with us. Don't miss out on this exciting meeting. If you have not yet registered, please use the following link to do so <http://www.aps.org/units/fws/meetings/annual/>. Deadline for submission of abstracts is October 7, 2016. We all hope that you will be able to join us at this beautiful location. After

all you may decide to stay a bit longer to enjoy Davis and its close proximity to Sacramento and Napa areas.

Your APS Far West Section Executive Committee.


Hotel Support for Students Giving Talks or Presenting Posters:

Students traveling from outside Davis area who have submitted an abstract and are presenting at the conference will be granted shared housing support in the Hyatt hotel for stays of up to two nights, Thursday and Friday. Please indicate as a special request in the hotel reservation system that you are a student presenting a talk or poster at the Far West Section meeting. Also indicate your roommate preferences, otherwise the roommates will be assigned randomly on a gender basis. The Far West Section will pay the hotel directly, however a credit card guarantee is required while making hotel reservations; in case of late cancellation or no show the hotel will impose late cancellation fees according to their own policies.

Travel Support for Students Giving Talks or Presenting Posters:

Students traveling from outside Davis area who have submitted an abstract and are presenting at the conference may also qualify partially or fully for airfare, ground transportation, or mileage reimbursement up to the maximum \$100. Unfortunately we are unable to cover conference registration fee or meals. Those requesting travel support will receive notification from the Far West APS Executive Committee, indicating the value of the award for travel support to the meeting. Travel support will vary, depending on the distance that individuals travel to attend the meeting, and as a general guideline, persons who live farther away will receive larger support. We encourage students to carpool, but can only reimburse one person for driving the group.

Reimbursement Guidelines for Students:

First, note that only limited travel support is provided and only students presenting at the conference may qualify. To submit a request to support your airfare, ground transportation, or mileage, please download the [APS Travel Reimbursement Form](#)  or [APS Travel Reimbursement Form \(interactive\)](#), complete it with the amounts of travel expenses and attach original receipts. Mail the form and receipts to:

Dr. Alla Safronova
Physics Department
MS220
University of Nevada,
Reno, NV 89557

Election Results

Like every year, you - the members of the Far West Section - elected two new members to the executive committee as well as a new student representative and a new member of the chair line. Elections were announced shortly before the ballots were online and a reminder email was sent out a few days before the election closed.

Vice Chair:	Patricia Sparks, Harvey Mudd College
Executive Committee:	Catherine Graves, Hewlett Packard Labs Sayantani Ghosh, University of California at Merced
Student Representative:	Olivia Krohn, California State University at Fresno

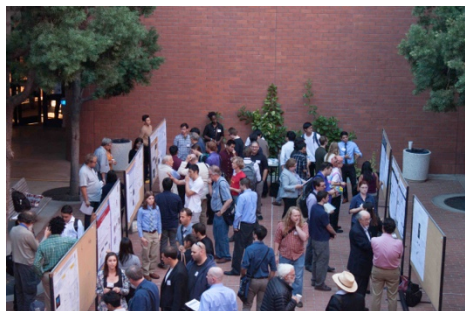
Recollection of the 2015 FWS Annual Meeting at CSU Long Beach

The Far West Section met at CSU Long Beach October 29 to 31st. The meeting counted nearly 150 registered attendees and started with a Halloween welcome reception organized by the local chapter of the Society of Physics Students (SPS).

The program featured nearly 90 presentations, of which almost a third were posters. The talks pertained to a variety of fields divided in sessions on Education, Condensed Matter, Nuclear, High Energy, Accelerator, Gravitational Waves, AMO, Plasma Physics and Materials Science.



A novelty of this year's meeting was the addition of booths at the poster session where companies and research institutes could advertise their activities. Professionals were available to talk to young scientists in search of a career. This idea received a positive welcome and is bound to become a tradition of the Far West Section meetings.



The attendees enjoyed a very diverse set of plenary talks. James Wynne (Thomas J. Watson Res. Center) spoke about Flash Gordon and Laser Surgery, Mark Hermann (Lawrence Livermore National Lab) discussed the Creation and Control of High-Energy-Density Matter, Mu-Chu Chen (UC Irvine) presented Neutrinos and Physics Beyond the Standard Model and Michael Peterson (CSU Long Beach) introduced us to the

world of Topologically Ordered Phases of Matter.

Similarly, the Panel Discussion on Alternative Energies gathered an eclectic group of physicists representing Gentherm (Dmitri Kossakovski), Tri Alpha Energy (Matthew Thompson), Sempra Energy (Monique Delmar) and W2AGZ Technologies (Paul Grant). The panel was followed by a "Lunch with the Experts" where panelists and other senior scientists shared a meal with students eager to interact.



After greetings extended by the President of CSU Long Beach, we were gifted with one of the highlights of the meeting: Virginia Trimble's Banquet Address entitled "Cosmos: Man's Place in the Universe". Her wit, enthusiasm, sometimes controversial, always thought provoking, colorful thoughts drew the attention of both young and seasoned scientists. Like previous meetings, the gathering at California State University Long Beach brought together physicists from Industry, Research Institutes and Universities and provided a vibrant platform for fruitful interactions. The 2016 meeting holds promises to be another meeting worth attending. See you in October at UC Davis!

Unofficial mini-meeting of the Executive Committee below the Equator

Since the world is a small place three members of the Far West Section (FWS) Executive Committee – Peter Beiersdorfer, Alla Safronova, and Doug Singleton – found that their summer (*i.e.* Brazilian winter) research travels intersected in Sao Paulo, Brazil at the International Center for Theoretical Physics – South American Institute for Fundamental Research (ICTP-SAIFR) in early July. They took this opportunity to discuss some ideas for increasing the activity within the Far West Section and helping to support student travel and awards at the annual FWS section meetings. One suggestion was to have, in addition to the annual section meeting, smaller one-day meetings. Such one-day meetings might be on some particular focus topic (*e.g.* LIGO discovery of gravitational waves) and could be co-hosted between the FWS and a topical group. There is also potential to do such one-day meetings in conjunction with other societies such as AAS, AAPT, or SPS. Finally, such a one day meeting, perhaps focused on astronomy/astrophysics, might prove to be an ideal way for the section to have its first meeting in Hawaii. A second suggested idea was to change the career panel at the annual section meetings into a different format. This year at the 2016 FWS section meeting (to be held at the University of California Davis October 27-29 <https://www.aps.org/units/cal/meetings/annual/index.cfm>) the section is trying something different – instead of a panel discussion of some particular career path in physics with 4 or 5 panelists, Crystal Bailey of AIP will give an hour long presentation on using social media in building one's career. This presentation will be geared toward students and young professionals (*e.g.* post-docs). Crystal's presentation will be followed by an informal lunch where meeting attendees can ask further questions about this topic. Finally the suggestion was made to form an ad hoc committee on communication which would give ideas about how the executive committee could better and more effectively stay in contact with the members and get feedback from the members. In this regard the executive committee would look at ways to keep up with the section's Facebook page, Twitter, and other forms of communication with the FWS membership. These and other suggestions will be discussed at the October section meeting in Davis so feel free to give your input on these topics or propose others that you would like to see discussed.



The Executive Committee visited DC

In February 2016, members of the executive committee were invited by the APS to travel to Washington DC to attend the APS leadership convocation. The convocation is the primary APS-wide event that facilitates communication and relationship building between the various wings of our large and diverse organization. The meeting also provides an opportunity to learn more about the inner workings of the American Physical Society and the services they are able to offer to their members

and in particular to their units, the divisions, topical groups, forums and sections. Recently, the society has grown to more than 50,000 members and for this reason it is crucial that the different groups within APS are equipped with the tools provided by the APS to communicate efficiently with their members and with each other.

This year, the executive committee was represented at the convocation by Peter Beiersdorfer (LLNL), Andreas Bill (CSU Long Beach), and Matthew Thompson (Tri Alpha Energy). The two-day program covered major issues of importance to the organization. Although largely a settled issue, the recent APS corporate reforms were one major topic of discussion. We also discussed potential changes related to the APS journal publications, which are one of the key activities of the society. The Physical Review family of journals started in 1893 and has been the responsibility of the APS since 1913. In over a hundred years of stewardship, the APS has never seen a time of greater change in academic publishing. The decline of libraries as the primary distribution channel of journals in favor of the internet, as well as increasing calls for open access, are pushing the APS from a subscription model to an author (or author's institution) pays model. The leadership was told to expect increasing publication charges and potentially submission charges in the years to come to cover the substantial cost of running the journals and maintaining their collections.

Membership and membership services was the other dominating topic of the convocation. Over the course of the meeting we heard presentations from different departments at APS, like government relations, international and industrial affairs, membership development, publications and web services, diversity, outreach, finances. The focus of all this was on how we can work together to best recruit, retain, and serve members like you. Diversity of the membership continues to be a major concern, as does the challenge of serving the majority of PhD physicists who do not work in academia or national labs and are greatly underrepresented in the APS membership. These and other key concerns will guide the ongoing 2017 Strategic Planning Process.

As every year the convocation is preceded by the congressional visits day, where members of the APS visit offices of members of Congress. The picture shows the



northern California delegation consisting of, from left to right, Tor Raubenheimer and Hendrik Ohldag (SLAC), Jim Hollenhorst (Agilent) and Barry Klein (UC Davis) in the office of Rep. Jackie Speier (D). As you may know from discussion at the "Take Action" booths at the March and April meetings, we scientists need to get better at making our voices heard. Most of us rely on funding from federal agencies like e.g. DOE, NSF or NIST in our research. These budgets are under

constant scrutiny and it is important that Congress as well as the general public is engaged in our work. This becomes even more obvious in an election year like this.

These meetings are an excellent opportunity to bring the challenges that our community faces to the attention of Congress. But the meetings are also a two way street as we often hear from congressional staffers what they would like to see from us. Sometimes they need more information about the status of a particular research field e.g. battery or research or the impact of changes in federal funding to the university on the surrounding communities. Another hot topic is the general status of STEM education in the US, how one can improve it and what role the APS can play in this. Everyone can contact and visit the local offices of their representatives. We encourage you to do so and report what role federal funding plays in your research and the education of your students. You may also invite a few students and arrange a personal visit to the office, so that the staff can hear first hand how important sustained federal funding is for the future of STEM education.

Student Awards from 2015 Far West Section Meeting

The Far West Section awards prizes for student presentations at the annual section meeting in the categories of experimental and theoretical physics, at the undergraduate and graduate level. Below is a list of the 1st and 2nd place winners, along with talk title, from the 2015 section meeting at CSU, Long Beach (see <http://web.csulb.edu/depts/physics/APS/> for the meeting website with more details). The student presentations and prizes are one of the key functions of executive committee. It helps recognize some of the best and brightest future physicists, and it helps to connect all the students with the physics community. If you are interested in judging the student talks and posters, please contact the conference organizers. This year's contacts are Dr. Sergey Savrasov, savrasov@physics.ucdavis.edu and Dr. Douglas Singleton: dougs@csufresno.edu. Finally, if you want to make a contribution to the student prize money fund and/or student travel fund the section has started putting a donation box on the registration form. Please feel free to donate to support the students as they embark on a career in physics.

2015 Graduate Student Awards:

Kennedy Reed award Best Theoretical Research - 1st place

- Brandon Kawata (CSU Long Beach)
Title: "An Examination of Physics Student Participation in an Online Group Homework Forum"

Kennedy Reed award Best Theoretical Research - 2nd place

- Jessica Asbell (CSU Long Beach)
Title: "Non-radial Modes of Oscillation in Neutron Stars and Quark Stars: Modes f, p and g"

Margaret Burbidge award Best Experimental Research - 1st place

- David Russell (CSU Long Beach)
Title: "Crystal Structure and Magnetic Properties of Novel Double Perovskite Ca₂ScOsO₆"

Margaret Burbidge award Best Experimental Research - 2nd place

- Alysson Vrieling (Stanford University)
Title: "Millimeter Wave Vacuum Electronic Devices Using Azimuthally Travelling Waves"

2015 Undergraduate Awards:

Helen Quinn award Undergraduate Research Theory - 1st place

- Mikhael Semaan (University of Toledo and CSU Long Beach)
Title: "Submonolayer Island Nucleation and Growth for Subdiffusive Random Walkers"

Helen Quinn award Undergraduate Research Theory - 2nd place

- Nima Assad (UC San Diego)
Title: "Appeal of seesaw mechanism for neutrino mass in supersymmetric grand unified theories"

Steven Chu award Undergraduate Research Experiment - 1st place

- Salman Kahn (UC Berkeley)
Title: "Control of rewriteable doping patterns in graphene/boron nitride heterostructures"

Steven Chu award Undergraduate Research Experiment - 2nd place

- Mark Shelor (Hartnell CC)
Title: "Timing Measurements of Scintillator Bars with Silicon Photomultiplier Light Detectors"

2015 Poster Awards:

Best undergraduate Poster

- Gretel Mercado (UC San Diego)
Title: "SDSS J1632+3505: A Possible Brown Dwarf Companion to a Nearby Main-Sequence Star"

Best graduate Poster

- Walter Alvarado (CSU Long Beach)
Title: "Computational study of butyrylcholinesterase inhibition by dialkyl phenyl phosphate derivatives"