

APS Far West Section

2018 Newsletter



Letter from the Chairs



By

*Hendrik Ohldag, SLAC National Accelerator Laboratory (chair, picture)
Andreas Bill, California State University Long Beach (past chair)*

Dear Fellow APS Member,

The Far West Section (FWS) of the American Physical Society aims at bringing together physicists active in academia, industry and research institutions. We welcome all who have a background in, or a link to physics and wish to share their experience and knowledge, or simply wish to stay in touch with colleagues and the advances in the field. Most of our members live in California, Hawaii or Nevada, but the section is open to all who are APS members. Though all *can* be member of the FWS for free(!), not all *are* members. If you are an APS member and read these lines you should also be a section member. If not yet, just send a short email to membership@aps.org to express your interest in joining the Far West Section, or go [online](#) using your APS membership credentials (click on “Membership”). Please do so now, and read the rest of the letter after...

Physics has undergone many changes in recent years and those in our Far West Section region have played a major role in shaping the physics landscape. Not only have we advanced knowledge in key areas of fundamental research, teaching and industry, but some of our members have also contributed in important ways to the APS itself. The fact that physics has changed so much also means that many more job opportunities are available to physics students. Long gone are the days that a degree in physics would only lead to a career in academia or a laboratory. To address this development and to help young graduates undertake their first steps after graduation

we started to organize an annual career workshop. In 2018 the workshop was entitled “I graduated – what now?” and was held at SLAC National Accelerator Laboratory on July 7th. A summary of the event is found in this letter. We invite you to check out the program and attend future workshops. Please also encourage and support your students to attend.

Events like this workshop and the annual scientific meeting that was held at Cal State Fullerton October 18-20, 2018, are financially supported by the section and the APS. The annual meeting is also an opportunity to learn from and talk with established physicists, hear a distinguished banquet speaker and potentially win an award for best presentation by undergraduates, graduates and postdocs.

Another area where physics has changed dramatically, in particular over the past decade is the necessity for professionals to speak out in a time where some attempt at giving equal consideration to serious scientific endeavor, “opinion” and even plain false statements in the fog of information. It is also important for physicists to change our mentality. Do not expect that all will obviously recognize the value and merits of our field; demonstrate it! Do not think that physicists working in industry are valued less; they make up the largest segment of the physicists’ population and are valued members of our organization. Do not believe that physics should remain the way it was when you were a student; one of the main characteristics of physics is its continued transformation through new knowledge and understanding of the physical world. Do not think that we are the best by definition and don’t need others; the APS is known for the great advances that immigrant physicists have made and should be known as an example of inclusiveness — We welcome all who have a passion for physics. We also should continue striving at extending our expertise to other fields while continue developing Physics as a major field of science.

Your membership is crucial for the Far West Section. 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 the activities of the section. For those of you who want to be even more active in the Section, and there are many reasons to be part of this section, we offer multiple 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 us. Very importantly, vote during our elections!

If you wish to make suggestions for invited speakers for future meetings or any other section activities, contact one of the chair line members who will forward your suggestion to the Program Committee. Contact us also, if you wish to host one of the

Section's meetings at your institution. *Thank you* to all who are members of the section.

Best wishes from the Far West Section!

New event! The first Far West Section meeting in Hawaii – January 2019

For the past few years, ever since Hawaii was added to the section in 2015, the Far West Section leadership has sought ways to organize an event to strengthen the bond between members on the mainland and in Hawaii. This year we finally found an opportunity and partnered with members at the University of Hawaii.

On January 19, 2019 will take place a one-day symposium to showcase research performed in Hawaii as well as the mainland region of the section. The organizing team and the leadership of the Far West Section explicitly set as goal to also invite high school teachers from Hawaii so that educators from different institutions have a chance to interact with each other



SAVE THE DATE! * 1st Hawaii Meeting
 Far West Section of the American Physical Society
 University of Hawai'i at Mānoa, January 19, 2019
<https://www.phys.hawaii.edu/APS-FWS-Hawaii-Meeting>

Invited Speakers

- Bruce Houghton UHM - Geophysics/Volc
- Hendrik Ohldag SLAC - Material Science/Magnetism
- Kurtis Nishimura UHM - High-energy Physics/Belle II
- Jim Hollenhorst Agilent - Physics in Industry
- Alla Safronova UNR - AMO/Plasma Physics
- Peter Gorham UHM - Astrophysics/ANITA
- Klaus Sattler UHM - Nanophysics
- Tara O'Neill UHM - Education/University
- Mike Gearen Punahou - Education/High Sch
- Tessie Lumabao Waipahu HS - Education/Hg
- Andrew Stenger UHM - Magnetic Resonance Imaging
- Ben Rotter Nalu Scientific - High Performance IC for Data Acquisition and Processing in Particle Physics Experiments

Program

- 9:00 am Welcome
- 9:10 am Morning Session
- 12:00 pm Lunch
- 1:00 pm Afternoon Session
- 4:30 pm Poster Session & Reception

Contacts

UHM Local Organizing Committee
 Pui Lam: plam@hawaii.edu
 Dept. Physics & Astronomy

Hope Ishii: hope.ishii@hawaii.edu
 Hawaii Institute of Geophysics & Planetology

Michael Jones: jonesm@hawaii.edu
 (retired) Dept. Physics & Astronomy

The FWS executive committee will assess the success of the meeting but many have demonstrated their wish to transform the event into a tradition by having it take place on a regular basis in Hawaii.

2018 FWS Annual Meeting, California State University, Fullerton

By Joshua Smith, Department of Physics, CSU Fullerton

Conference Chair and APS Far West Section Executive Committee member



Our annual meeting takes place at Cal State Fullerton from October 18-20. The annual meeting is a wonderful occasion to meet colleagues from California, Nevada, and Hawaii. It is also an excellent opportunity for students to share their research with a diverse audience. We encourage students at different stages of their journey to submit an abstract and present their research. The best presentations will be honored with cash prizes as in previous years.

The program will feature four plenary talks from a diverse range of subjects, parallel sessions with contributions from our members, a poster session and reception with the opportunity to mingle and meet new colleagues and an after-dinner talk presented this year by Jess Phoenix (BluePrint Earth). Also, as in previous years we will offer travel support for students who present at the conference.

Information about the Cal State Fullerton event can be found on the webpage: <https://physics.fullerton.edu/apsfws2018>.

We hope to see you at CSU Fullerton!



2018 Fall Meeting
Far West Section of the American Physical Society
Cal State Fullerton, October 18-20, 2018

Invited Speakers:

Wylie Ahmed
California State University Fullerton
Linda J. Spilker
Jet Propulsion Laboratory
Michelle Povinelli
University of Southern California
Siegfried Glenzer
SLAC National Accelerator Laboratory
Jess Phoenix
Blueprint Earth

Important Deadlines:

Abstract submission: 09/17/2018
Early registration: 10/01/2018

Contact:

Conference chair: Hendrik Ohldag
hohldag@stanford.edu



Recollection from the 2017 FWS Annual Meeting at UC Merced

Around 200 members of the Far West Section attended the 2017 annual meeting at the University of California, Merced (<http://physics.ucmerced.edu/American-Physical-Society-Annual-Meeting>). The program consisted of four exciting invited talks by Kerwyn Huang (Stanford), Frances Hellman (UC Berkeley), Andrea Ghez (UCLA) and Andrei Derevianko (UN Reno), who described state of the art research from the fields of biophysics, condensed matter physics, material science, astrophysics and AMO science. The local chair, Prof. Sayantani Ghosh and her team made everyone feel welcome and so it was no surprise that during the breaks the halls were filled with attendees busy exchanging experiences and ideas. Everybody got a chance to present their research either during the parallel oral sessions or the poster sessions on the second day.



2017 Far West Section Awards

All presentations were truly outstanding, so the task of selecting the most outstanding one was not an easy one. After deliberations we decided to award the 2017 section prizes to the following members:

Luis Alvarez Award for Best Experimental Research by a Post Doctoral Researcher

Yu Zeng (UC Merced) and Natalie Hell (Lawrence Livermore National Laboratory)

Margaret Burbidge Award for Best Experimental Research by a Graduate Student

Shaowei Li (UC Irvine) and Benaz Mendewala (UC Merced)

Steven Chu Award for Best Research by an Undergraduate

First prize: Sean Haas (Humboldt State University)

Second prize: Tie for Shoji Hishida (CSU Fresno), Ethan Rinck (CSU East Bay)

Helen Quinn Award for Education or Undergraduate Research

Tessie Lumabao (Waipahu High School, HI Dept. of Education)



Rounding out the program was a presentation by Tadashi Tokieda (Stanford) after a relaxing dinner banquet at the end of the first day. Prof. Tokieda is a professor of mathematics with a focus on mathematical of everyday physical phenomena. Everyone was fascinated by his remarkable career path that started as a fine art painter and classical philologist to becoming a world-renowned mathematician who taught at Cambridge and now in Stanford. In his field of applied mathematics, he uses so called “toy models” to understand the fundamental processes driving complex physical phenomena. Consequently, his presentation was filled with examples and intuitive experiments that everyone in the audience could relate to. This was a truly enjoyable evening.

The section would like to thank Prof. Ghosh and her team for hosting such a wonderful meeting and we are grateful to UC Merced for the hospitality.



Inspiring the Next Generation of Women in Physics

By Nina Abramzon, California State Polytechnic University, Pomona

The American Physical Society (APS) Conferences for Undergraduate Women in Physics (CUWiP) are three-day regional conferences held simultaneously throughout the United States and Canada for undergraduate women and underrepresented genders interested in physics and astronomy.



The institutions of California State Polytechnic University, Pomona, Pomona College and Harvey Mudd College, together with the University of Oregon were the hosts of the 2018 CUWiP@SoCal, representing the Far West region. The conference was held from Friday, January 12 to Sunday, January 14, 2018. The 2018 CUWiP@SoCal site had the highest attendance of the 12 sites, with over 200 women attending and over 70 panelists

and speakers. Our site streamed the keynote presentation by Dr. Patricia (Pat) Burchat from Stanford University to the other 11 sites. Dr. Patricia Burchat told the inspiring story of her path from first-generation high school graduate to the top of her field in experimental particle physics and cosmology.

The conferences are supported by the National Science Foundation, the Department of Energy and the host institutions. In addition, the 2018 CUWiP@SoCal gratefully received support from JPL/NASA as a platinum sponsor, and General Atomics and Lawrence Livermore National Labs as silver sponsors.

The 2019 CUWiP conference in SoCal will take place at UC Santa Barbara and in NorthCal at UC Davis.



“I graduated – what now?”



Career Workshop for Students at SLAC National Accelerator Laboratory

By Hendrik Ohldag, 2018 Chair of the FWS and organizer of the event

On July 7 2018 the Far West Section of the APS held a career workshop at SLAC National Accelerator Laboratory. After a similar event had attracted a rather large crowd in 2017, the section promised to make it a regular item on its meeting calendar. Career opportunities for physicists have become increasingly diverse and somewhat confusing over the past decade. While chances for students to find jobs in academia or traditional research settings have not significantly changed, other job markets have become much more prominent, e.g. the areas of data science, health science, general IT and so on. From conversations with students we learned that many are not aware of the variety of options and how to pursue them. They felt that an event providing not only some general information but also personal insight into the job market for physicists would be extremely helpful. Based on this input and feedback by the students the section invited speakers and panelists to provide exactly this missing link.

The 2018 meeting was attended by close to 150 students from the region. The day started with a featured presentation by Peter Fiske (Lawrence Berkeley National Laboratory), entitled “Put Your Science to Work”. Peter is a regular contributor to APS career events through his presentations and webinars. For him these events are crucial, because, “...*Career development workshops at local and regional levels of APS have two advantages: they can be scheduled at any point during the year, and*



students don't need to travel as far as the annual meeting to participate. It's a great way for APS to show how it is concerned for the next generation of physicists.” During his talk he pointed out that physics students obtain a unique skill set during their studies that will set them apart from other job applicants. However, it is also important to realize that standing out is as important as being part of the team.

Peter Fiske’s engaging presentation set the tone for the day as Antonio Cuevas Rodriguez (Stanford University) who attended the event, mentioned; “...*I really enjoyed the workshop and felt like I learned a lot about myself that I simply didn't know before. I am a rising junior at Stanford University, and never really thought seriously about careers outside academia until this summer. Peter Fiske's presentation especially spoke to me and helped me get an idea regarding what I could do after college*”.

After a pizza lunch provided by the section, where students enjoyed the new courtyard on the SLAC campus, the program continued. The afternoon session was

comprised of two career panels, with panelists from diverse backgrounds ranging from academia, research companies, data science, government policy, patent law, national laboratories, publishing and startup companies. After summarizing their career path and providing students with many personal stories, the panelists were ready to take questions from the audience. There was not nearly enough time for all the questions, so many conversations had to be continued during the break. After the official workshop program ended, the participants had the opportunity to tour the SLAC National Accelerator Laboratory, which led them from the early days of SLAC the construction of the linear accelerator and the first North American web, server to state of the art research facilities like the Stanford Synchrotron Radiation Light Source and the Linear Coherent Light Source.

As in 2017 many of the participating students pointed out that the event has helped them get a better idea of what they can do with their degree and which options are available to them. Based on the feedback, the section will likely organize another workshop at SLAC in 2019. In the meantime, if you are interested in the materials you can find them at the meeting webpage (<https://www.aps.org/units/cal/meetings/graduated.cfm>). In addition, the APS career page (<https://www.aps.org/careers/index.cfm>) contains useful information as well as links to webinars .

Meeting Calendar 2018/2019

The following three meetings are planned by the Far West Section:

- 1.) Annual Meeting of the Far West Section, October 18-20, 2018 at Cal State Fullerton
- 2.) First meeting of the Far West Section in Hawaii, January 19, 2019 At UH Manoa
- 3.) Annual Meeting of the Far West Section, October 31 – November 2 at Stanford University.

The Far West Section goes to Washington

By Patricia Sparks, Harvey Mudd College



APS Policy and Advocacy

On February 1, 2018 the members of the chair line participated in the APS's annual Congressional visits day (CVD). The basic structure of the CVD involves training volunteer physicists to visit their congressional offices and discuss non-partisan issues relevant to APS members. The excellent APS staff prepare briefings on the topics of immediate concern, set up appointments with staffers of our representatives, and provided all the guidance needed to allow us to conduct interesting conversations on the Hill.

The list of topics this year were:

- 1) Federal R&D funding – emphasizing the unexpected payoffs of basic research;
- 2) Climate change – emphasizing the national security implications;
- 3) STEM education – emphasizing the particular bills which will support our students;
- 4) Visa status – emphasizing the needs of our current students and postdocs; and
- 5) Research infrastructure – urging Congress to consider scientific infrastructure as vitally important to the nation.



S. Lambert (APS), B. Berger (NSF), H. Ohldag (SLAC), and Jim Hollenhorst (Agilent/APS) advocating for science among northern California

In addition to visiting our personal offices, one of us (Hendrik Ohldag) also visited the senate offices for Hawaii and Nevada. To learn more about the advocacy efforts of the APS, visit their web site [<https://www.aps.org/policy/index.cfm>]. If any of you are interested in learning how to be an effective advocate for science at your local offices, please contact me [sparks@g.hmc.edu] or Dr. Greg Mack [mack@aps.org].

New and Old Members of the Far West Section Executive Committee

Every year through our election process we thank outgoing members and welcome the new of the chair line and the executive committee.

We thank the following members who ended their term on December 31, 2017:

Chair Line:

Peter Beiersdorfer, Lawrence Livermore National Laboratory. We thank Peter for his vision for the section. Especially, we thank him for his efforts in fundraising, the creation of the new FWS Physics Day, and for promoting the representation of physics education.

Executive Committee:

We thank the following members at large who end their three years term at the close of 2017: Adrian Hightower (Metropolitan Water District of Southern California and Caltech), John Price (California State University, Dominguez Hills). We thank them for their involvement in organizing the annual meetings and devoting time and competency to the benefit of the Far West Section!

We welcome the following members who started their term on January 1, 2018:

Chair Line: (01/2018 – 12/2021)

Alessandra Lanzara, University of California, Berkeley and Lawrence Berkeley National Laboratory.

Executive Committee: (01/2018 – 12/2020)

- Nina Abramzon, California Polytechnic University, Pomona.
- Roopali Kukreja, University of California, Davis.

Secretary/Treasurer: (01/2018 - 12/2020)

Alla Safronova, University of Nevada, Reno. Alla has served as secretary treasurer in 2015-2017 and we are grateful to have her continue her work for the section!

Student member: (01/2018 - 12/ 2018)

Noraim Nunez, California State University, Dominguez Hills

One novelty about the executive committee is the decision to elect *two* students for two-year periods with their election being staggered in time to allow for a better continuity of student involvement into the activities of the section.