

FALL 2013 NEWSLETTER

Far West Section of the American Physical Society

Preview of the 2013 Annual Meeting

Department of Physics & Astronomy
Sonoma State University
Rohnert Park, California
November 1-2, 2013

2013 Annual Meeting
of the California-Nevada Section of the American Physical Society

November 1 - 2, 2013
Sonoma State University
Rohnert Park, CA

Plenary Talks:

Daniel Cox - UC Davis
"Proteins as Nanolegos"

Kam Moler - Stanford
"Scanning SQUID Studies of Quantum Materials"

Marjorie Shapiro - UC Berkeley
"The Higgs Boson: Status and Future Directions"

Bryant Hichwa - SSU
"Physics of Baroque Bassoons"

• Prizes for the best student talks
• Careers in Education and Public Outreach Panel
• Travel support and free lodging possible for students

Local Contact: Lynn Cominsky
lync@universe.sonoma.edu

Program Contact: Sergey Savrasov
savrasov@physics.ucdavis.edu

After Dinner Speaker:
Phil "The Bad Astronomer" Plait
"Death from the Skies"

Halloween
Welcome Reception
sponsored by SSU's
Society of Physics Students
Thursday October 31st
6 - 9pm

Registration Begins August 15:
<http://epo.sonoma.edu/aps>

SONOMA STATE UNIVERSITY
www.aps.org

The Department of Physics & Astronomy at Sonoma State University is pleased to host the 2013 annual meeting of the Far West (previously known as the California-Nevada) Section. Information can be found on the website of the conference <http://epo.sonoma.edu/aps>

The scientific program will include invited talks by

- **Daniel Cox (UC Davis):** *Proteins as Nanolegos*
- **Kam Moler (Stanford):** *Scanning SQUID Studies of Quantum Materials*
- **Marjorie Shapiro (UC Berkeley):** *The Higgs Boson: Status and Future Directions*
- **Bryant Hichwa (SSU):** *Physics of Baroque Bassoons.*

The after-dinner speaker will be Phil "Bad Astronomer" Plait: *Death from the Skies*

There will also be a panel discussion on:

Careers in Education and Public Outreach

If you arrive in Rohnert Park on Thursday night (Halloween), please join SSU's Society of Physics Students club at a Welcome Reception from 6 – 9 pm. There will also be a student "Lunch with the Experts" on Saturday where pre-registered students will receive a free lunch and talk with members of the Executive Committee as well as SSU faculty. **Awards** will also be given for **outstanding presentations** by undergraduates and graduate students!

We invite you and your students to attend this stimulating meeting and submit an abstract for the parallel oral sessions. **Registration is now open - abstract submission deadline is Friday September 27, 2013.**

Message by the Chair of the Section

Virginia Trimble (UC Irvine)

Dear Fellow Far Westerner:

Yes! The APS council has approved the name change, and the California/Nevada (CA-NV-HI) section is now the Far West Section. So, please ask yourself the following two questions:

1. *What can you do for your section?*
2. *What can your section do for you?*

Taking the last first, we admit we cannot get you a full professorship at Princeton, or even Harvard. But, if you can think of things the Section should know about or should be doing, please drop a note to the current chair (vtrimble@uci.edu) or the 2014 chair (Sergey Savrasov; savrasov@physics.ucdavis.edu). Messages to the current chair need to be in plain text email, suitable for a chair of very little brain.

As for the things I hope you will do for your section:

- 1) Register and come to the meeting, website <http://epo.sonoma.edu/aps/>, details, highlights of the program are shown on the first page of this newsletter.
- 2) Enter an abstract before the 27 Sept. deadline for a contributed talk -- we don't do posters.
- 3) Urge your classmates, professors, colleagues, students, or postdocs, as appropriate also to register, come, and speak.
- 4) Similarly urge those who are not Far West members to join, via an email to membership@aps.org, for those who are already APS members. Go to aps.org to join the main society, which is nearly free for students the first year
- 5) Think about volunteering for something
 - a) The November 1-2 meeting will need some session chairs, a few people to listen critically to student presentations and help select prize-winners.
 - b) As the months roll around, we will need nominations and volunteers for election of future chairs, members of the executive committee, and a student representative. Also a few people for the nominating committee - including someone who has not previously been involved in section governance - the program committee for the 2014 meeting in Reno, Nevada, and so forth.

Looking forward to seeing you at the meeting at Sonoma State.

Virginia Trimble

2013 Chair, Far West Section of the American Physical Society.

2012 Annual Meeting at Cal Poly San Luis Obispo (November 2-3) - Summary of Activities

Lynn Cominsky, Sonoma State University

The 2012 Fall meeting of the California-Nevada Section was held at Cal Poly San Luis Obispo, and hosted by the Department of Physics. The meeting was well attended with over 165 registrants, about half of whom were students. The program featured four exciting plenary talks presented by Barbara Jones (IBM Almaden), Chetan Nayak (UC Santa Barbara and Microsoft Research Station Q), Pete Schwartz (Cal Poly SLO) and Steven Barwick (UC Irvine). The talks covered research in magnetic spins, quantum materials, sustainability in Guatemala and high energy neutrinos. The lively and humorous after dinner talk was presented by Cal Poly SLO physics alumnus and KCBS-TV science reporter Brian Hackney.

The general scientific program consisted of more than 100 presentations sorted in 10 different parallel sessions, including Education talks for the first time featuring participants in project STAR (Science Teachers as Researchers). Many excellent talks by students and young scientists were given during meeting. These contributed presentations were so good so that the committee had a hard time to choose award winners among the students.

Last year's "Lunch with the Experts" was so popular with attending students, that it was held on Saturday this year, to allow the APS-CAL section board members to attend. Getting to know members of the Section "up close and personal" was a great networking opportunity for all.

The program on the second day traditionally features a career panel. This year's panel was on Careers in AeroSpace and featured two physicists from SpaceX (Dr. Sam Waldman and Dakota Decker), Dr. Markus Aschwanden from Lockheed Martin, Dr. Rolf Danner from Northrup-Grumman and Cal Poly's own Dr. Jodi Christiansen, formerly a consultant at Northrup. It was especially exciting that the career panelists could stay for the Experts lunch, and the interest in SpaceX was quite overwhelming!

During the business meeting, the vote to place the 'name change' issue on the ballot was approved. This is an official by-laws change for the section name to become "Far West."

The next meeting of the Section will be November 1-2, 2013, at Sonoma State University. We look forward to seeing you all there!

The conference website <http://physics.calpoly.edu/aps-ca/> offers further details on the 2012 meeting.

Award Winners at the 2012 Annual Meeting

Undergraduate Awards: Steven Chu Award (Best Research)

First place:

- Ritankar Das (UC Berkeley) *Thermodynamic description of cellulose chain collapse using coarse grain modeling*

Second place:

- Dana Hipolite (Cal Poly SLO) *Field Control of the Surface Electroclinic Effect in Liquid Crystal Displays I*

Graduate Student awards

Kennedy Reed Award (Best Theoretical Research)

- Michael Maroun (UC Riverside) *A Metric on the Space of Quantum Fields*

Margaret Burbidge Award (Best Experimental Research)

First place:

- Omar Moreno (Santa Cruz Institute for Particle Physics) *The Heavy Photon Search Experiment: Searching for Dark Photons at Jefferson Lab*

Second place: (tie)

- Andrea Rodarte (UC Merced) *Ordering Quantum Dot Clusters via Nematic Liquid Crystal Defects* and
- Kathleen Krueger (Cal Poly SLO) for *Improving the Efficiency of Homologous Gene Replacement by Disrupting the NHEJ Pathway for Gene KusA in the Oleaginous Fungus Mortierella alpina*

Postdoctoral Award: **Luis Alvarez Award** (Best Experimental Research)

- Paul Davis (UC Berkeley) *X-ray scattering measurements of ionization in shock-compressed deuterium*

Congratulations to all!

Meetings & Decisions of the Executive Committee, March 2013

Lynn Cominsky, Sonoma State University

The Executive Committee met at the site of the next CA-APS meeting at Sonoma State University in Rohnert Park on March 2, 2013, hosted by Executive Committee Past Chair Lynn Cominsky.

Most of the Executive Committee meeting was spent discussing the plans for this year's annual meeting, Nov. 1-2, 2013 at Sonoma State. We also toured some of the facilities that were under consideration for the various venues. Abstracts for the meeting will be due no later than September 27, 2013. Lynn Cominsky will be the chair of the Local Organizing Committee (as well as serving as Past Chair of the Section).

Other decisions were to staff the following committees:

- 1) Abstract Sorting committee – chaired by Kendall Mallory
- 2) Program committee – chaired by Sergey Savrasov
- 3) Nominating Committee – chaired by Doug Singleton with help from Lynn Cominsky

Finally, it was decided that the 2014 meeting would be held at the University of Nevada, Reno, organized by Peter Winkler, currently a Member at Large of the Executive Committee. The meeting will probably take place in mid-November, a little later than this year due to conflicts with other APS meetings.

2012 Election News

Doug Singleton, Cal State University Fresno

The results of the 2013 CA-NV APS section are in and the first piece of news is that, as a result of the election there is no longer a CA-NV section! The section will be renamed the Far West Section and is comprised of APS members mainly residing in California, Nevada and Hawaii. The new officers of this new section are:

Vice Chair: **Dr. Peter Beiersdorfer** of Lawrence Livermore National Laboratory was elected to the chair's line. Dr. Beiersdorfer's research area is Plasma Physics. He did his Ph.D. work at Princeton University. His research interests include plasma diagnostics for fusion and astrophysics, atomic structure and QED. He is currently a research scientist at LLNL as well as holding adjunct or affiliate positions at Auburn, UC Berkeley and University Nevada at Reno.

Members at Large: **Dr. Jerome Buerki** of California State University Sacramento and **Dr. Matthew Thompson** of Tri Alpha Energy, Inc. were elected to the position of member at large. Dr. Buerki works in the area of condensed matter physics and nano-physics. He obtained his Ph.D. from University of Fribourg, Switzerland and has held research positions at University of Arizona, Harvard University and Albert-Ludwigs-University, Freiburg, Germany. Dr. Thompson got his Ph.D. from UCLA. He held two post-doctoral positions at UCLA and LLNL. In his current position at Tri Alpha Energy, Inc. he does plasma physics research.

Student Representative: **Mr. Jackson Williams** of UC Davis was elected to the position of student representative for the Far West Section. Mr. Jackson is a graduate student at Davis and LLNL where he is doing research on fundamental aspects of intense laser plasma interaction related to positron-electron pair creation.

The Section Needs a New Outfit – Your Ideas are Welcome!

Hendrik Ohldag, SLAC National Accelerator Laboratory

The APS council approved the inclusion of Hawaii in the section and you approved to change the name of the section from “California-Nevada” to “Far West” during the last election. Now it is time to also change the way the section appears – that means we need a new logo to be featured on our webpage and official announcement. The old one is shown on the right depicting the states of California and Nevada as well as the APS physics logo. So let your creativity take charge and come up with a new idea that describes best the name of our section “Far West”. Anything goes, simply submit your suggestions and ideas via email to Hendrik Ohldag at hohldag@stanford.edu by October 18.



The executive committee plans to reveal the new logo during the next annual meeting at Sonoma State. Should your suggestions be chosen we will waive the registration cost for you to attend the next meeting at the University of Nevada, Reno.

Annual APS Congressional Visit Day

Hendrik Ohldag, SLAC National Accelerator Laboratory

The annual APS Congressional Visit Day (CVD) took place on February 21, 2012. Katja Lindenberg (UCSD), Maria Longobardi (UCB, now Univ. Geneva), Randall Knight (Cal Poly SLO) and Hendrik Ohldag (SLAC) represented the Far West section. The Congressional Visit Day is organized by the Washington office of the APS to bring together members of Congress with members of the APS. Our group met with the offices of Rep. Darrell Issa (R-CA 49th), Rep. Jackie Speier (D-CA 14th), Rep. Lois Capps (D-CA 24th), Sen. Barbara Boxer (D-CA), Sen. Dianne Feinstein (D-CA) and Sen. Harry Reid (D-NV), who is also the majority leader of the U.S. Senate.

The CVD is an excellent opportunity to familiarize members of Congress with the situation and challenges of students, scientists and educators in their home districts and states. With sequestration and continuing resolution on the horizon at the beginning of the year our task appeared to be particular daunting. Having participated in such events in the past it is my experience that while the majority of lawmakers understands the important role that science and science education plays for the US and the economy, they are hesitant to prioritize the necessary funding in a budget situation like this. It is therefore critical that they hear from you how much of your work depends on federal funding and how your work affects your local community and your state. During our visits we pointed out that the impact of science at universities, national

laboratories and industry laboratories does not only affect the US economy on a large scale but that many of these institutions play a critical role in the local economies and communities as employer or via outreach programs by, e.g., providing education programs to local schools. Many of these programs depend on funds provided by the federal government through their funding agencies

There are many ways to interact with members of Congress. You can write them a letter, call their office or simply visit their office. Are you an educator? Take your students to the local office of a member of Congress and let them meet their staff, describe to them how much your work depends on federal funding and why federal science funding is important.



Katja Lindenberg (UC San Diego), Randall Knight (Cal Poly San Luis Obispo), Maria Longobardi (Univ. Geneva, former UC Berkeley) and Hendrik Ohldag (SLAC National Accelerator Laboratory) in the office of Rep. Lois Capps (D-CA 24th).

The 2013 Leadership Convocation and the California-Nevada section

Hendrik Ohldag (SLAC) and Sergey Savrasov (UC Davis)

The 2013 APS Leadership Convocation was held on February 22/23 at the American Center for Physics in College Park, Maryland. The goal of the convocation is to bring members of the regional sections (e.g. Far West, New York etc.) and scientific divisions/groups (e.g. polymers, condensed matter, magnetism) together. There was certainly plenty of opportunity over the course of two days for members from different sections or divisions to interact with each other and share their experiences. A number of sessions were dedicated to provide us with tools and information that allow the executive committees to communicate efficiently. Different divisions of the APS administration shared their expertise with us and offered help. For example, the APS offers support with IT services to announce meetings and address the membership – like distributing this newsletter. They can also help with the organization of section meetings and with the related finances. During these sessions it was very interesting for us to see how different sections operate and what kind of activities they offer. Our section received a lot of attention for our extensive meetings and the way we reach out to students at different levels within the section. The Far West section is not only one of the largest sections it also has one of the largest section meetings within the APS.

The second part of the program was dedicated to reports from the APS executive board about last years' activities and future goals. Editor in Chief Gene Sprouse gave a particularly interesting report. APS journals are now publishing about 100,000 articles over a five-year span, which are submitted by a truly international community, spanning over five continents. The publication of

the APS journals is still achieved in a cost effective manner, thanks to the support of an huge international community of referees who provides APS with the expertise that is needed to keep the APS journals well respected.

Of particular interest was the fact that the APS is in the process of developing a strategic plan in which they laid out four distinct goals for the future.

- 1.) To serve the members, through improved communications, increased membership and improved international outreach.
- 2.) To serve the physics community, through dissemination of physics, advocacy and forming strategic alliances as well as providing education and achieving diversity in their membership.
- 3.) To serve society, by providing physics information and participating in the formulation of public policy as well public outreach and STEM education
- 4.) To increase organizational excellence, by achieving and securing financial stability and developing a unified organization “One APS”

While these goals are formulated in quite a generic fashion so far, the next step is to develop more details to lay out a “To Do” list for the future. If you have any suggestions or questions in this regard please do not hesitate to contact any member of the executive committee so that we can forward your idea or bring you in contact with the right person.

Miscellaneous

Committees of the CA-NV Section

Executive Committee: Current members of the Executive Committee and their respective terms of office are listed on the following link:

<http://www.aps.org/units/cal/governance/officers/index.cfm>

Program Committee: Sergey Savrasov (Chair), Virginia Trimble and Lynn Cominsky

Abstract Sorting Committee: Kendall Mallory (Chair), Peter Winkler, Virginia Trimble, Nan Phinney, Peter Beiersdorfer, Sergey Savrasov

Nominating Committee: Douglas Singleton and Lynn Cominsky (Co-Chairs), Virginia Trimble

Newsletter: Hendrik Ohldag (Editor), Lynn Cominsky

Website of the APS CA-NV Section

Our website <http://www.aps.org/units/cal/> contains regularly updated resources for students, including scholarships, career opportunities, summer research programs. Please let us know (hohldag@stanford.edu) of any resource or institution not listed on the website and we will add it!

Future Section Meetings

Fall 2013 Meeting at Sonoma State University on November 1-2.

The Fall 2014 Meeting will be held at the University of Nevada, Reno. Exact dates will be announced later.