By Jeff Lince

On Tuesday, November 10th, 2015 the SCCAVS sponsored a pizza dinner at CalTech’s Joint Center for Artificial Photosynthesis (JCAP) followed by presentation and tour. JCAP’s mission is to create the scientific foundation for a scalable technology that converts carbon dioxide, water, and sunlight into renewable transportation fuels.

Established by the U.S. Department of Energy in 2010 as an Energy Innovation Hub, JCAP is the nation’s largest research program dedicated to the advancement of artificial solar-fuels generation science and technology. The program’s first phase focused on solar 

H \textsubscript{2} generation, which was completed in September 2015. JCAP has begun a 5-year renewal phase with a new research focus on solar carbon dioxide reduction to fuels.

Led by the California Institute of Technology, JCAP has an integral partnership with the Lawrence Berkeley National Laboratory. Additionally, JCAP draws on the expertise and capabilities of key collaborators from the University of California campuses at Irvine (UCI) and San Diego (UCSD), and the SLAC National Accelerator Laboratory.

Our distinguished speakers were Dr. Xenia Amashukeli, Deputy Director, Dr. John Gregoire, Research Thrust Coordinator, and Dr. Manuel Soriaga, Principal Investigator and Visiting Associate in Chemistry at the California Institute of Technology.

JCAP is developing processes that cost-effectively convert sunlight into burnable fuel. It is one of DOE’s largest programs, with a renewal budget of $75M for five years. JCAP has produced full-system hydrogen-generating solar-fuel prototypes that meet all of the requirements set out in its original 5-year goal.

The lectures described JCAP’s achievements in materials science and implementation technologies. We then had a personal tour guided by Dr.’s Gregoire and Soriaga to visit their laboratories and see the equipment that produced these remarkable results.

JCAP has invested in state-of-the-art instrumentation and the development of unique experimental capabilities. The researchers have access to various spectrometers, microscopy set-ups, photoelectrochemical screening and analysis systems, product separation and analysis instrumentation, surface characterization X-ray equipment, surface science experimentation, high-throughput synthesis and characterization pipeline, thin-film fabrication and characterization equipment, and prototype testing set-ups.

They demonstrated that this is indeed a potentially large application for surface, interfaces and thin films that should be of interest to everyone connected to the AVS and related technology communities.

For more information visit: http://solarfuelshub.org/about/
Science Educator’s Workshop Held at AVS 62
By Corinne D'Ambrosio

Each year, AVS has conducted a two-day in-service workshop on low-pressure experiments and modeling for middle and high school science teachers from the United States and Canada since 1990. The SCCAVS sponsors a number of local teachers each year to attend the workshop from schools here in Southern California. The last workshop was held from October 19-20th at the San Jose Convention Center in San Jose, CA during the AVS 62nd International Symposium & Equipment Exhibition.

This past Fall the Southern California Chapter of the AVS chose two teachers to attend the SEW at San Jose. The first was Mariah Fontijn of Culver City High School. She teaches AP Chemistry and Chemistry Honors to grades 10-12. The second teacher chosen was Roger Wynn of Mountain Empire High School in Pine Valley. He teaches Earth Sciences and Chemistry to grades 9-12.

Roger described the AVS as a “great conference” and expressed his appreciation for the opportunity to learn about low pressure technology. Mariah said that she learned a great deal at the SEW and it inspired her to continue in STEM education. The teachers also had the opportunity to speak with exhibitors during a guided tour of the exhibit floor at AVS 62, and then took a field trip to tour Intel’s headquarters nearby in Santa Clara (See pics below and on page 4).

If you know of a teacher in Southern California that would be a good candidate for next year’s Science Educator’s Workshop, please encourage them to apply online at http://www.avs.org/Education-Outreach/Science-Educators-Workshop

Mariah Fontijn of Culver City High School learning about vacuum pumping (Middle center)

Roger Wynn conducting a low pressure experiment at SEW (second from right)
Chapter Activities

CalTech/JCAP Field Trip (Cont’d from page 1)

By Jeff Lince

We’re on the web!
www.sccavs.org

Upcoming Events

NCCAVS 37th Annual Equipment Exhibition
Holiday Inn
San Jose
February 24, 2016
11AM-7PM

www.nccavs.org

ICMCTF ‘16
Town & Country Hotel
San Diego, CA
April 25-29, 2016

http://www2.avs.org/conferences/icmctf/

AVS
Science and Technology
of Materials, Interfaces, and Processing

Southern California Chapter
SEW participants at AVS 62 in San Jose tour Intel to learn about vacuum technology’s role in semiconductor chip manufacturing

Learn more about the Science Educator’s Workshop by watching this video on YouTube:

https://youtu.be/gLO8niCM0a4

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Chapter Activities

OPEN MEETING January 26, 2016

YOU'RE INVITED! The Southern California Chapter of the American Vacuum Society conducts monthly or bi-monthly meetings (depending on scheduling) in order to plan events of interest to the vacuum technology community. Our next meeting will be held at 6pm on Tuesday, January 26, 2016 at Renato’s Italian Restaurant in Westminster, CA. This first meeting of the New Year is OPEN to both AVS members and non-members alike, in an effort to brainstorm and learn more about the community we serve. Planning committee members are from industry, academia, government, and equipment sales and marketing.

Attending our monthly executive board meeting provides an opportunity both to contribute to and make new connections with the Southern California technical community. Our discussions focus on developing activities such as speaker meetings, technical workshops, science fairs, newsletter, field trips and the annual symposium and equipment exhibition.

The Southern California Chapter of AVS (SCCAVS) is dedicated to serving the Southern California technical community through technical symposia, educational outreach, and other programs that provide topical information to members and non-members in our region. Our areas of interest include vacuum science and vacuum-related technologies, including surface and thin film science, nanotechnology, the understanding of materials properties, and the development of new materials. RSVP REQUIRED to chair@sccavs.org by January 15, 2016.

Renato’s is located at:
15383 Brookhurst Street
Westminster, CA 92683
(714) 839-5755
www.renatoscatering.com
The SCCAVS 2015 Equipment Exhibition, Short Course Program, and Student Poster Session was held at the Holiday Inn Buena Park on Tuesday, September 29th (short courses from the 28th-30th). The Exhibition drew over 30 exhibitors, and hosted attendees from academia, industry, and national labs. LACO Technologies presented a free workshop on Helium Leak Detection, and three days of short courses covering Applied Vacuum Technology, Sputter Deposition, Partial Pressure Analysis, Vacuum System Design, and Atomic Layer Deposition were large draws for students from all over the Western United States. See page 7 for information on the 2016 program.
**ADVERTISING OPPORTUNITY**

SCCAVS eNewsletter advertisements are for one-year, published quarterly. Pricing is as follows:

- **$199** - Business Card Sized Ad (3 ½” W x 2”H)
- **$375** - Quarter Page Ad (4 ¼” W x 5 ½” H)
- **$525** - Half Page Ad (8 ½” W x 5 ½” H)

We are offering a link on our website for advertisers for an additional $50 to be posted to the www.sccavs.org website. This term will also be for a year. We are not offering this as a stand-alone advertisement, but as a value-added option along with your print ad.

All advertisements should be submitted to chair@sccavs.org in .tif, .gif, or .png. Files in .pdf format usually also work. They should be scalable to the dimensions above. Advertisements are in full-color. Payments can be made by check mailed to:

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