

NCCHPS

Northern California Chapter-Health Physics Society
November 2016 – January 2017

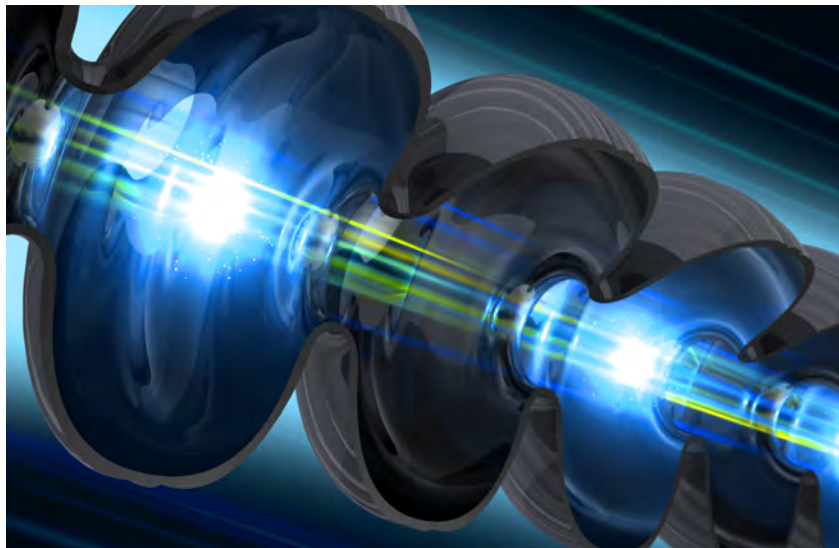


The NCCHPS November 2016 Dinner Meeting

Thursday, November 17, 2016

The Faculty Club, University of California Berkeley

6 pm Social / 7 pm Dinner / 8 pm Announcements and Technical Presentation



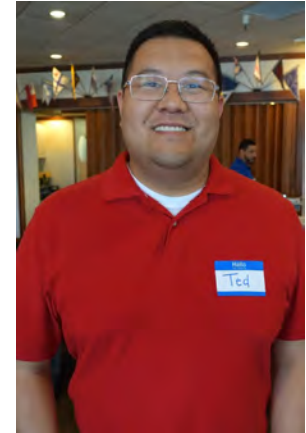
Ionizing Radiation from High-Intensity Optical Lasers

Technological advances allow an increasing number of facilities around the world to install multi-terawatt and petawatt optical lasers. Experimenters can focus these laser beams to high intensities ($>10^{17}$ W/cm²) onto targets to study matter at high pressures and temperatures. This interaction creates a plasma, and additional interaction of the laser pulse with the plasma can accelerate plasma electrons to tens and even hundreds of MeV. The "hot" electrons interact with the target material and the target chamber and generate bremsstrahlung, which can be an ionizing radiation hazard for personnel working on or near these laser facilities

The Radiation Protection group at SLAC has developed a dose yield model from a systematic study with plasma particle-in-cell (PIC) code and radiation transport code FLUKA to estimate the bremsstrahlung dose generated from high-intensity laser experiments. The development of this model and its use for hazard analysis and designing controls will be presented.

About the Speaker

*Ted Liang, Ph.D. Candidate,
Georgia Institute of Technology
SLAC National Accelerator Laboratory
2016 Recipient, Burton J. Moyer Memorial Fellowship*



I am characterizing the ionizing radiation generated from high-intensity laser-matter interactions as a function of laser-optics parameters. There is a large scientific community interested in studying matter in extreme conditions, such as those found abundantly in giant planets such as Jupiter. To create these states of matter, scientists use high-power lasers (tera- and petawatt) and focus them down to micrometers onto matter (very high laser intensity). This interaction (and secondary interactions) can generate a tremendous amount of ionizing radiation as a mixed field of electrons, photons, neutrons, etc.

Under supervision of Sayed Rokni at SLAC, my research is finding the relationship between the laser-optics parameters (such as laser intensity) and the dose from the ionizing radiation generated. This information will provide radiation protection programs working with these high-intensity laser facilities to better perform hazard analyses and develop radiological controls.

Radiation Emergency Volunteers (REV) Project

Greetings NCCHPS! I work for the California Dept. of Public Health in emergency preparedness. We just launched a new project to recruit health physicists and other radiation professionals to join the CA disaster healthcare volunteers program. The DHV program is essential to California's preparedness for all hazards.

Currently, there are very few radiation-related professionals in the program, we want to recruit a few more who would serve as technical Disaster Service Workers in the case of a large scale radiological emergency. For example, Radiation Emergency Volunteers could be deployed to assist local public health departments in the screening and decontamination of evacuees after a large radiological incident.

Please share this info with your members! If you'd like more information on this project, please let me know.

More info here <https://www.healthcarevolunteers.ca.gov/>

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Thermo Fisher Scientific is continuing to advance instrumentation used in the measurement of radiation. These advancements are in the areas of personnel contamination, dosimetry, and hand-held survey instruments.

*The **iPCM-12** is a direct replacement for the PCM-2, however it expands the capabilities in areas of body coverage, background reduction using a unique proportional detector design, and a unique Rn-rejection algorithm.*

*The **Thermo-Harshaw TLD** products (readers and materials) are the state of the art for passive monitoring using TLD. The **EPN-Mk2** and **EPD-N2**(gamma neutron) are the active dosimeters of choice at virtually all DOE and DOD sites.*

*The **RadEye-“X”** series has already been selected by many DOE National Labs as a superior replacement for the older box-style analog meters, including our own E600. These labs are realizing not only the cost savings advantages of the RadEye-X, but also the simplicity and robustness that has been designed into a sophisticated digital meter that weighs approx 4 oz. and “talks” to all of your existing probes.*

Justin Kung
310-418-7281

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<http://www.thermoscientific.com/en/products/radiation-measurement-security.html>

News from Burton J. Moyer Memorial Fellowship Fund Committee

The Burton J. Moyer Memorial Fellowship Fund (BJMMFF) was established by NCCCHPS to provide financial support to a full-time graduate student in health physics. It has been continuously awarded since 1985, currently with HPS matching NCCCHPS \$5,000 annual contribution.

For the 2016/2017 Academic year Burton J. Moyer Memorial Fellowship was awarded to Taiee Ted Liang. We have received the following message from Ted Liang.

"I have received the letter and 1st installment. My studies this semester have been going well, and I just finished up mid-terms a little over a week ago. Thank you again for your support!"

Thanks!

Taiee Ted Liang"

Burton J. Moyer Memorial Fellowship Fund monies are invested into 7 Fidelity mutual funds and one money market account. As of October 14, 2016, the value of BJMMFF investments totals \$117,636. BJMMFF is governed by NCCCHPS Bylaws and these monies are separate from the NCCCHPS operational funds.

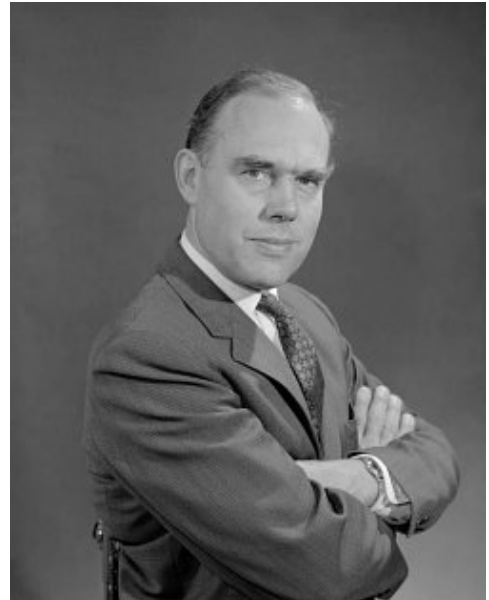
Burton J. Moyer Memorial Fellowship Fund DONATIONS:

The current market conditions threaten the long-term sustainability of the Burton J. Moyer Memorial Fellowship Fund; please consider a small donation (\$10-\$50 is OK) to BJMMFF, any donations are tax deductible.

Checks payable to NCCCHPS may be sent to our treasurer, with the notation "For the Moyer Fund" or you can contribute when you pay for your dinner meeting with one combined check. You may indicate if you wish your donation to remain anonymous.

Radoslav Radev

Chairperson, NCCCHPS Burton Moyer Fellowship Committee



President's Message

Dear NCCHPS members,

If you've been keeping up with [Health Physics News](#), you may have noticed the somewhat distressing recent articles about declining numbers of health physics students and graduates. I thought this might be a good time to share one of my geeky passions with you. Over the past few years, I've participated in several science outreach events in the local community and have found them truly enjoyable events.

In the Livermore area, these are mainly held between January and April and include school science fairs, Expanding Your Horizons workshops, DOE Science Bowl regional events, and the annual Science Teacher Workshop that NCCHPS jointly supports with the local ANS chapter and UC Berkeley. I know many of you have volunteered at these events in the past and have been the ones to inspire me to follow your example. I'll take this opportunity now to encourage the rest of our membership to do the same.

Sure, it's not a direct solution to the shrinking population of health physicists, but it's always fun to talk about what I do for a living and try to inspire the next wave of scientists. (Bonus, it gives me practice at explaining technical concepts to a non-technical audience.) I think my lifetime goal will be to get one little kid to say, "I'm going to be a *health physicist* when I grow up!" (I have big dreams.)

If an event you support is in need of volunteers, please let me know so I can pass it on to our distribution list and tweet about it. I would love for more NCCHPS members to get out into the community and support science education.

This is the last newsletter of this calendar year, so here's a quick look at our upcoming events:

November 4 is our joint meeting with the San Francisco Bay Area Chapter of the AAPM in Walnut Creek. The agenda features lunch, four technical presentations (approved for 4 CECs by the AAHP), and an evening wine and cheese reception. Pre-register now on [our website!](#)

November 17 is our usual Thursday evening dinner meeting and will be at The Faculty Club on the UC Berkeley campus. Ted Liang, this year's Moyer Fellowship recipient, will be giving a technical presentation on his Ph.D. research at SLAC. If you missed the last newsletter (September 2016), take a look at pages 6-7 to learn more about Ted and his research.

January 19 will be our joint meeting with the Northern California Section of the ANS. The venue and technical presentation are yet to be finalized, so keep watching our website or Twitter ([@ncchps](#)) for the latest information.

See you soon!

Lydia Tai

Extra bonus: great nerdy shirt for volunteering at the regional Science Bowl!



2016 CANBERRA Bay Area Seminar

CANBERRA is pleased to announce a special event. Please join us at our Bay Area User's Seminar to be held on Thursday, November 3, 2016 from 9:00AM to 4:00PM at the Hyatt House Pleasanton, 4545 Chabot Drive, Pleasanton, CA. 94588.

This seminar will be conducted by CANBERRA Product Managers covering the latest in CANBERRA products and technology from our Germanium Detector, Alpha Spectroscopy, Alpha/Beta, Gamma Spectroscopy, and Services product lines.

There is no fee for participation in this workshop. CANBERRA will provide lunch, snacks, and drinks.

<http://www.canberra.com/events/seminars/Bay-area-2016/>



<p><i>Upcoming NCCHPS Meetings...</i></p> <p>November 17, 2016 Ted Liang 2016-2017 Moyer Fellow</p> <p>January 19, 2017 Joint meeting with ANS NorCal</p> <p>March 16, 2017 HPS President Elect Eric Abelquist</p> <p>May 18, 2017 Affiliates Night</p> <p>Mailing Address: NCCHPS 4435 First Street #141 Livermore, CA 94550</p> <p>Email: ncchps@gmail.com</p> <p>Website: http://hpschapters.org/ncchps/</p> <p>Newsletter Editor: Warren TenBrook warren@tenbrook.org (925) 423-1470</p> <p>Affiliate Liason: Nelson Chiu ncchpsaffiliatecontact@gmail.com (414) 559-5586</p>	<p><u>The Next NCCHPS Meeting!</u></p> <p>Thursday, November 17, 2016 6:00 – 7:00 pm no-host meet & greet 7:00 – 8:00 pm dinner 8:00 pm announcements and presentation.</p> <p>The Faculty Club, Seaborg Room Minor Lane, University of California, Berkeley, CA 94720 (510) 540-5678</p> <p>IMPORTANT: The Faculty Club is located on the UC Berkeley campus and has no physical street address or single parking area. Please visit the website for information on transportation and parking.</p> <p>Buffet Starter:</p> <ul style="list-style-type: none"> • Caesar Salad • Caprese Salad <p>Buffet Entree:</p> <ul style="list-style-type: none"> • Linguine pasta with marinara and meatballs • Cheese stuffed ravioli with creamy pesto (vegetarian) <p>Dessert: Plain and chocolate-nut biscotti</p> <p>Only online registrations accepted. Register by 10 pm November 6, 2016 at: http://hpschapters.org/ncchps/docs/pages/meetings.html</p> <p>NCCHPS members \$30 (\$35 @ door) NCCHPS guests \$35 Students \$10 Non-members \$40</p> <p>Contact Member-at-Large Paul Swearingen ONLY if you encounter difficulties using the form: swearingen.paul@gene.com</p> <p>Please note that in order to avoid unnecessary costs to the Chapter, you may be charged for no-shows. Cancellations may not be made after the RSVP deadline.</p>	<p><u>2016-2017</u> <u>NCCHPS</u> <u>Board Members:</u></p> <p>President Lydia Tai Tai4@lbl.gov (925) 422-0475</p> <p>President-Elect Ibrahim Ozcan iozcan@lbl.gov (510) 495-2842</p> <p>Past President Greg Jones jones88@lbl.gov (925) 423-9875</p> <p>Secretary Maranda Cimeno mcimeno@slac.stanford.edu (650) 926-7978</p> <p>Treasurer Chad Hopponen hopyyinh@gmail.com (925) 422-7128</p> <p>Member-at-Large Paul Swearingen swearingen.paul@gene.com (650) 255-3088 (work)</p> <p>Member-at-Large Craig Maxwell Craig.maxwell56@outlook.com (415) 264-2983</p>
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