NCCHPS

Northern California Chapter-Health Physics Society

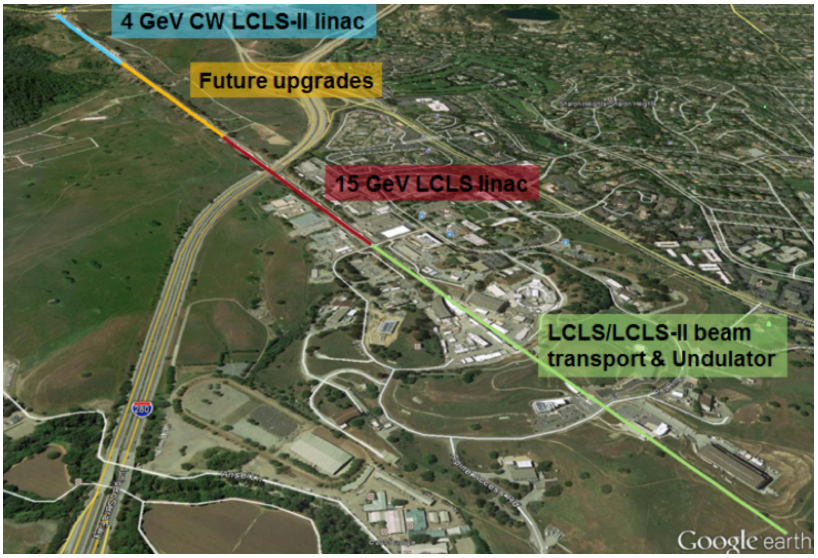
November 2014

The November NCCHPS Dinner Meeting

Thursday, November 20, 2014

Francesco's Restaurant, Oakland

6 pm Social - 7 pm Dinner - 8 pm Presentation



Radiological Protection For LCLS-II Project At SLAC National Accelerator Laboratory

SLAC National Accelerator Laboratory is home of the Linac Coherent Light Source (LCLS), the world's first hard X-ray laser. The LCLS, which began operation in April 2009, generates ultra-fast, ultra-bright pulses of X-ray laser light, which are providing new insights into the atomic world.

Design of another new linear accelerator at SLAC, LCLS-II, is proceeding rapidly. LCLS-II will be the second X-ray laser at the laboratory. The LCLS-II superconducting radiofrequency structure accelerator will be installed in the first third of the existing SLAC two-mile Linac tunnel. It will host two parallel undulator lines that will produce intense hard X-rays from high power electron beams operated at repetition rates of 1 MHz and above. LCLS-II will provide access to new regions of the X-ray spectrum and improved control over the X-ray beam. It will also accommodate a larger number of research scientists working simultaneously.

With this project SLAC re-enters the MW beam arena. In this talk, Dr. Mario Santana- Leitner will present the LCLS-II project and examples of innovative tools and solutions that have been developed to address the radiological protection aspects of this large project.

The Next NCCHPS Dinner Meeting (Continued)

About the Speaker: Dr. Mario Santana-Leitner

Dr. Mario Santana-Leitner is the lead radiation physicist in charge of design of radiation safety systems for the LCLS-II project at the SLAC National Accelerator Laboratory. Mario obtained his Ph.D. 'Cum Laude' in Nuclear Engineering from Technical Univ. of Catalonia in Spain after pursuing studies of both engineering and physics. In his thesis he developed RIBO, "A Monte Carlo code to optimize the release of radioactive ion beams from target units", which is used in the design of most of the modern Isotope Separation On-Line (ISOL) facilities world-wide. In 2000 he joined ISOLDE, CERN target and ion source group for the design of EURISOL, and in 2003 he worked for Pantechnik ECR ion source company by GANIL in France. In 2004 he returned to CERN to work in the FLUKA Monte Carlo Development team at the Emerging Energy Technologies group, for the collimation design of the Large Hadron Collider.

In 2006, Mario joined the Radiation Physics Group of SLAC, where he has participated in the design of LCLS and FACET accelerators. Mario leads the Monte Carlo team of SLAC Radiation Physics, which has a critical role in the design of the LCLS-II. Mario is member of the FLUKA collaboration and is regularly invited to teach at the advanced courses. He is a reviewer for RPD journal, has authored over 40 publications and receives numerous invitations to provide his advice and expertise in the design of accelerators, domestically and internationally.

President's Message

The chapter is off to a great start this year. In particular, Jim Tarpinian our President-Elect, has lined up a solid technical program of interesting speakers. In November we look forward to hearing about the exciting new projects at SLAC. For our January meeting, we will be holding a joint meeting with our colleagues from the American Nuclear Society to hear about updates from Fukishima effects and monitoring data. In March, our chapter is honored to host a visit from the National HPS President. And plans for our Affiliate Night in May include an abbreviated technical presentation about progress at NIF including novel target ideas in the quest to push the fusion envelope. In short there are many good technical programs lined up and I encourage you to invite a colleague or fellow collaborator from your institute or social network to join us for an evening presentation.

The board is eager to find accommodating venues that promote healthy attendance and networking opportunities. If you have ideas or suggestions, please share them with Claire Vandevoorde or any board member. Many of our members carpool to the meetings, so don't be afraid to extend an offer to your friends and neighbors, especially the ones that must travel a bit further. Our next meeting at Francesco's is centrally located near the Oakland airport. I hope to see some new faces along with the familiar faces. Keep in mind, that just prior to hearing from our guest speaker, we always reserve a few minutes for members to share any job announcements, guest introductions or similar messages. Your Board continues to accept new membership applications. Think about the people you work or interact with and why not extend a friendly invitation to join. Kaitlin Engel has recently redesigned our membership application which can be found on our website.

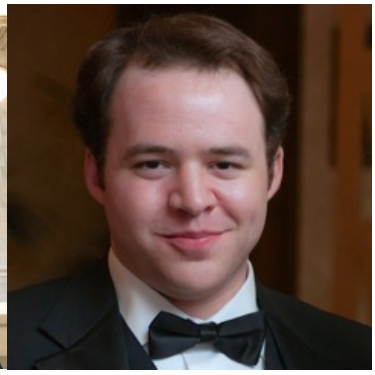
Finally, I wish to thank Melissa Mannion who has graciously agreed to serve a second term as our chapter Treasurer. At our last meeting, the board voted unanimously on her appointment in full accordance with our bylaws. Congratulations to Melissa – keep up the good work.

Cheers!

Greg Jones
NCCHPS President

2013-2014 B. Moyer Memorial Fellowship Recipient
Matt Riblett (Virginia Commonwealth University)





Matt Riblett is a 24-year-old Doctoral student in the Virginia Commonwealth University (VCU) School of Medicine's Radiation Oncology Department in Richmond, Virginia. He has been a national member of the Health Physics Society since 2012.

Matt's interests in the nuclear and radiological sciences started out in middle school, when, while learning about radioactivity and the structure of the atom, his father underwent radiation therapy following a cancer diagnosis. Out of an otherwise unfortunate occasion, Matt found himself interacting with the clinical staff and oncology team treating his father and gained an appreciation for the beneficial uses of radiation, as well as a fascination with the clinical hardware and nuclear instrumentation. Attending high school at Maggie L. Walker Governor's School for Government and International Studies, he was encouraged by his amazing physics and chemistry teachers, Harold Houghton and Joy Ross, to pursue his interests in the nuclear sciences — even giving him his first Geiger meter to experiment with at home.

Matt attended Rensselaer Polytechnic Institute in Troy, New York and graduated in 2012 with a B.S. in Nuclear Engineering. While an undergraduate, he found himself drawn again towards Health and Medical applications after taking Health Physics and Nuclear Instrumentation with the always-enthusiastic Dr. Peter Caracappa. For his senior design project, Matt worked with his team on the modeling and development of an active interrogation system for cargo shipping containers for (theoretical) implementation at the Port of Albany, focusing on the computational methods for radiation simulation and on the dose assessment for dock personnel, ship-side workers, and potential human trafficking victims.

Following graduation, Matt continued to work at RPI under the guidance of Dr. George Xu in the Radiation Measurement and Dosimetry Group. As part of his research activities, Matt developed tools for processing CT DICOM images and extracting elements of patient information for use in clinical dose tracking, before later focusing his efforts on accelerating Monte Carlo methods. The summer prior to entering VCU, Matt interned at Oak Ridge National Laboratory as a member of the Nuclear Engineering Science Laboratory Synthesis (NESLS) program. There, he worked under Dr. Seth Johnson and Dr. Thomas Evans honing his computational skills and developing GPU-based Monte Carlo methods for the Reactor and Nuclear Systems Division for use on OLCF's TITAN supercomputer.

Moyer Memorial Fellowship Recipient - Matt Riblett (Cont)

His interests in policy and regulation drove Matt to become an active member of a number of professional societies, including the Health Physics Society, the American Nuclear Society, and the Federation of American Scientists, as well as to serve in the leadership of the local and student ANS sections. In the summer of 2014, Matt participated in the Washington D.C. Nuclear Engineering Student Delegation alongside 16 engineering and physics students from across the country to advocate on Capitol Hill for increased educational and research funding for the nuclear and radiological sciences.

Matt entered the VCU School of Medicine in the fall of 2013 pursuing a degree in Medical Physics. Currently, Matt is working with Dr. Geoffrey Hugo as part of the VCU Lung Cancer Response Team to advance new methods for localizing and treating lung cancer. His work to date has focused on improving the registration of in situ cone-beam and fan-beam CT images to compensate for respiratory motion, detrimental noise, and image artifacts, with the goal of being able to more effectively reduce the exposure of healthy tissues during treatment and minimize late-effect complications.

A Virginia native, Matt grew up traveling the I-95 corridor to visit with his family in Delaware and Pennsylvania. Surrounded by an extended family of engineers (Riblett, as in the Riblett airfoils), scientists, medical professionals, and entrepreneurs, his career choice is certainly no surprise. Today, Matt spends the larger portion of his time at school, however, when not in a classroom or a lab, Matt enjoys volunteering for US FIRST robotics competitions, vegetarian cooking and baking, spending time with family and friends, and playing with his three dogs. A lifelong environmentalist, he has recently taken up the construction of a Tumbleweed Tiny House as a weekend project.

> *As a student at the beginning of his career, I am so immensely honored to have received the Moyer Fellowship — an award that embodies the spirit of discovery and collaboration for the advancement of beneficial radiation applications — and it is my sincerest hope that both my research and personal contributions to the Health Physics community will be able to live up to the standard or excellence that my predecessors have set. I thank the Northern California Chapter of the Health Physics Society and the national Health Physics Society for their continued support of student researchers and aspiring health physics professionals.*
>
> Matt Riblett

News from NCCHPS Burton Moyer Fellowship Committee

The Burton J. Moyer Memorial Fellowship (BMMF) was established by the Northern California Chapter of the HPS in memory of the late UC Berkeley Professor Burton J. Moyer and to encourage his ideals in the study of the safe use of radiation for the benefit of all people. The Burton J. Moyer Memorial Fellowship was first awarded in 1985 and since then every year the Burton Moyer Fellowship Fund (BMFF) provides financial support to one full-time entering or continuing student enrolled in bona fide U.S. graduate program in health physics or a closely related field. In total 30 students benefitted from the Moyer Fund. Currently the award consists of a stipend of $9,000.

Annually NCCHPS provides $4,500 for the Burton Moyer Memorial Fellowship stipend. The HPS provides a matching fund to our chapter's contribution and a travel grant to the fellowship's recipient to attend the annual HPS meeting. The HPS provides the travel grant at the conclusion of the fellowship and honors the BMMF recipient at the HPS meeting awardee's dinner at the culmination of his/her fellowship. With this HPS practice, the 2014 Burton J. Moyer Memorial Fellowship Awardee Deepesh Poudel from Idaho State University will receive the travel grand to attend the 2015 HPS meeting and will be honored at the awardee's dinner in 2015. 2013 Burton J. Moyer Memorial Fellowship Awardee Matthew Riblett was honored in 2014 at the HPS meeting awardee's dinner. Matt Riblett was kind to share with us some professional and personal information in this issue.

NCCHPS Burton Moyer Fellowship Committee is comprised of a Committee Chair and two members who are tasked to manage the fund and its investments, to solicit donations and to participate in the selection process of the Burton Moyer Fellowship Award recipient. The HPS (through the Academic and Education Committee) has responsibility for screening and ranking the candidates. Our chapter has a permanent voice in selecting the final Burton Moyer Fellow. NCCHPS Burton Moyer Fellowship Committee reviews and ranks the top candidates as per the established criteria for the Burton Moyer Graduate Fellowship. Many chapter members have contributed their time, talent and money to the success of the Burton Moyer Fellowship award since its inception over 29 years ago.

The current market value of the Moyer Fund is $114,776 as of October 20th, 2014. Burton Moyer Fellowship Fund money is invested into 7 Fidelity mutual funds and one money market account. The latter is used for disbursement of the NCCHPS annual cash contribution ($4,500) to the Burton Moyer Fellowship Award independent of the market swings.

DONATIONS: A larger number of individual donors even with a 'small' contribution would indicate that our chapter as a whole continues to support graduate study and education in health physics. The cost of college education continues to rise faster than the market appreciation of BMFF investments. We may need to consider increasing NCCHPS contribution to $5,000 annually. Checks payable to NCCHPS may be sent to our treasurer, with the notation "For the Moyer Fund" or you can contribute when you pay for your dinner meeting. You may indicate if you wish your donation to remain anonymous.

Consider a small donation ($10-20 is OK) for the Moyer Fund - Thanks for your generosity!

NCCHPS Burton Moyer Fellowship Committee

NCCHPS Member Dr. Radoslav Radev Receives International IEC 1906 Award for His Work on Developing International Standards for Radiation Protection Instruments.

Radoslav Radev was presented the International Electrotechnical Commission (IEC) "1906 Award" at an official ceremony on October 2, 2014 during the US National Committee Council meeting in the Nation's capital.

IEC "1906 Award" was created by IEC Executive Committee and commemorates the IEC year of foundation (1906) and honors IEC experts around the world whose work was fundamental to the IEC. The "1906 Award" recognizes Dr. Radev's exceptional achievements which contributed in a significant way to advancing the work of the Commission.

Radoslav has served as an expert to the Technical Committee "Nuclear Instrumentation" and its SubCommittee "Radiation Protection Instrumentation" for over 13 years. He was recognized for his exceptional contributions to the development of several international standards for radiation protection instruments and for instrumentation for border control of illicit trafficking of radioactive and special nuclear material. He was recognized also for being the Project Leader for the major revision of IEC 61005 "Neutron Ambient Dose Equivalent (Rate) Meters" standard published in 2014.

Founded in 1906 and based in Geneva, Switzerland, IEC is the world's leading organization that develops and publishes international standards for all electrical, electronic and related technologies. These are known collectively as "electrotechnology". Some 174 TCs and SCs and about 700 Project Teams carry out the work of IEC. Over 10,000 experts from industry, commerce, government, test and research labs and academia participate in IEC standardization work. The IEC experts come from all around the world and represent the entire range of electrotechnical interests in their country, companies, industry associations, governmental and regulatory bodies.

Radoslav considers his international award also as recognition for the expertise and professionalism of all HPS members and particularly for the rich professional and educational activities of our Northern California Chapter of HPS.

Presenting the IEC 1906 Award to Dr. Radoslav Radev are (left to right):

-Frans Vreeswijk (IEC General Secretary and CEO),
-Radoslav Radev (LLNL),
-Phil Piqueira (US National Committee for IEC President),
-Jim Matthews (IEC Vice President and IEC Standardization Management Board Chair)

Upcoming NCCHPS Meetings…

November 20, 2014
SLAC LCLS-II Project

January 22, 2015
NCCHPS/ANS
Joint Meeting
Dr. Kai Vetter
RadWatch Project

March 19, 2015
Nancy Kirner,
HPS President-Elect

May 15, 2015
Affiliate Night
Ken Kasper
LLNL NIF
Radiological Operations

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The Next NCCHPS Meeting!

Thursday, 20 November 2014
6 pm social, 7 pm dinner, 8 pm presentation
Francesco's restaurant
8520 Pardee Dr, Oakland, CA 94621
(510) 569-0653
www.francescosrestaurant.com/

The menu is:
Choice of entrees:
- breast of chicken picata
- grilled fillet of tilapia
- eggplant parmigiana

Entrees will be served with a Caesar salad and vanilla ice cream for dessert.

Registration deadline:
Thursday, 13 November 2014.

http://hpschapters.org/ncchps/dinner.php3

Cost: (add $1 surcharge for credit card)
NCCHPS members $30 ($35 @ door)
NCCHPS guests $35
Students $10
Non-members $40

***Cancellations are not accepted after the RSVP deadline.*Only online registrations will be accepted.**

Contact cvandevoorde@illumina.com ONLY if you encounter problems with the online registration.

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