



2013 SUMMER NEWSLETTER

PRESIDENT'S CORNER

From Presidents Present (Tom Hansen), Past (Gary Kephart), and Elect (Jeff Chapman)

The East TN Chapter kicked off our summer with a tour of the Spallation Neutron Source (SNS) and the Graphite Reactor (June 18). The last quarter has been exceptional for ETCCHPS. The executive committee has been getting down to business, we've had several side-bar meetings around town, discussing and planning our future, what to do, and how to do it in order to make our local chapter of the HPS, the best in the country. From the transition of officers in February, these are the highlights: 1) Joint meeting with ANS (March 12), and the presentation by author, **Gwenyth Cravens**, who wrote *"Power to Save the World The Truth About Nuclear Energy;"* 2) presentation by Dave Allard (April 1) entitled "TENORM Experiences and Studies in Pennsylvania;" 3) April 13 public outreach "Radiation and You" teamed with ANS student chapter in Chattanooga; 4) presentation by HPS President Elect Darrell Fisher (May 22); 5) the planning and conduct of TURNER-II Symposium (May 22-23); 6) conduct of the CHP Preparation Course which ends June 22; and 6) Oak Ridge National Lab sponsored tour of SNS/GR.

We know, you're probably saying "Gee, it can't get any better than this!" Well, guess what: "IT CAN!" The executive committee is planning a number of events jointly with UTK in an effort to reinvigorate the HPS student chapter. We have our annual picnic coming up August 24. Finally, for the fall season, we are talking with Denise Kiernan, Senator Bob Corker, Congressman Chuck Fleischmann, Scott Hamilton (Olympic Ice-Skater and Board Member, Proton Therapy), and making arrangements with the UTK Baker Center and Gettysvue and Fox Den Country Clubs for possible meeting venues.

We want to thank all of you for helping forge our future, and also thank you for calling and talking about what it is you want to see the chapter do. Please keep the calls coming: Tom (865-228-1997), Gary (865-385-2282), or Jeff (865-924-4466). In the fall newsletter we'll include an acknowledgements section for everyone who has helped in the planning and execution of chapter events.

PROGRAM MEETINGS

APRIL 2013

On April 1, 2013, about twenty-five members attended the dinner meeting at Gondolier, Oak Ridge. Mr. David Allard, Pennsylvania Department of Environmental Protection, gave an overview of the Commonwealth of Pennsylvania's recent experiences and ongoing studies related to Technologically-Enhanced Naturally Occurring Radioactive Material (TENORM). It has been known for many years that Pennsylvania's geology is unique, with several areas having relatively high levels of natural uranium and thorium. In the 1950s a few areas of the state were evaluated for commercial uranium production. In the late 1970s scoping studies of radon in homes prompted the Bureau of Radiation Protection to begin planning for a larger state-wide radon study. However, that effort was side-tracked by the TMI Unit-2 accident in March of 1979. Around the same time (in 1980) the USGS performed the National Uranium Resource Evaluation (NURE) survey which provided further insight related to near-surface U/Th levels in the state. Other geochemical studies have examined U/Th concentrations in various rock formations. In December of 1984 very high levels of radon were discovered in a Reading Prong area home. This prompted a state and national effort to address the indoor radon issue. More recent studies by federal and state agencies have been performed on ground water and community drinking water supplies for the 30 µg/L uranium maximum contaminant level (MCL). The PA state solid waste radiation monitoring regulations implemented in 2001 also prompted an evaluation of sludges generated from the treatment of oil and gas (O&G) well processors of brine and produced waters. Modeling of TENORM for disposal in in PA's RCRA D landfills was performed at that time. The recent increase in volumes of TENORM waste and increased levels of radium-226 observed in the 'unconventional' gas shale well produced waste water has compelled BRP to fully re-examine all O&G operations and TENORM generation from cradle to grave for public and worker exposure and environmental impact. The presentation summarized past and ongoing TENORM studies in the Commonwealth.

MAY 2013

On the evening of May 22, 2013 about sixty members and guests attended the dinner-meeting held at Pollard Auditorium on the ORAU campus. This meeting was held in conjunction with the Second Annual Turner Symposium (more below). Dr. Darrell Fisher, President-Elect of the National Health Physics Society, was the guest speaker.

The meeting began with a catered meal, provided by Birdwell Catering. Following fellowship and the buffet meal, the audience was directed to the auditorium to hear Dr. Fisher's presentation.

Jeff Chapman began by making a few business announcements. Plans for the next program meeting on Tuesday, 18 June 2013, were announced: A tour of the Spallation Neutron Source and the Graphite Reactor. Efforts are underway to reinvigorate the UT Student Section of the ETCHPS.

Doctor Fisher began by providing a brief history of the HP profession. He included a plausible explanation for the birth of the term "Health Physics." Attributed to K.Z. Morgan, "health physics" was defined as a health problem assigned to physicists.

He then went into his goals and vision for the society. First and foremost, the HP Society is GOOD FOR YOU!

He listed as his goals (1) increasing membership, (2) keeping dues at their current level through a balanced budget, and (3) legislative and public outreach.

A Health Physics endowment has been created and approved by the IRS. Dr. Fisher mentioned naming the society in one's will as an avenue of giving.

Dr. Fisher also described the society's agenda for the coming year. This will include supporting academic programs (scholarships and fellowships, faculty awards, and curriculum development grants in health physics), development of radiation safety standards, and federal support for travel to attend annual and mid-year meetings.

CHAPTER ACTIVITIES

Upcoming Events

June 18, 2013: A member-guest tour will be conducted of the Spallation Neutron Source and the Graphite Reactor at Oak Ridge National Laboratory. Highlights from the tour will be posted in the next newsletter.

July 2013: no chapter meeting in July, since many members will be attending the Health Physics Society's 58th Annual Meeting in Madison, Wisconsin. Information on the meeting (dates, program, et cetera) can be found at the society web page, www.hps.org.

August 2013: The annual chapter **PICNIC** will be Saturday, **24 August**, at Carbide (Clark Center) park. Our 1st-Year councilmember has performed due diligence to verify that there is no UT football game scheduled for that day (there is, however, a NASCAR race that evening). Details will be posted to the website as we get closer to the date.

Sept-Oct-Nov 2013: A number of presenters have been identified for the fall dinner meetings. If you have any favorite ideas or suggestions please contact the President-Elect, Jeff Chapman at 865-924-4466. The "biggest" idea in the planning stages is a proposal for Denise Kiernan to give a lecture on her book "The Girls of Atomic City." The proposal is a joint meeting held in an auditorium at UTK, between ETCHPS, ANS, INMM, WIN, and the student organizations, in an attempt to get well over 100 people in attendance. As far as other venues are concerned, we have placeholders at Gettysvue Country Club and Fox Den Country Club. Again, if you have any recommendations for venues "you just love" please call Jeff. If the country club scene is a deterrent to you attending, please call Jeff and let him know.

December 2013: The grand finale of the year comes on Thursday, **5 December**. The annual **Vendor's Meeting** will be held once again at Rothchild's Catering in Knoxville. Details will be posted as the date nears.

2013 CHP Exam Prep Course

Beginning on Saturday, April 20th, 2013, the East Tennessee Chapter of the Health Physics Society again sponsored a preparation course for local radiation safety professionals interested in pursuing the Certified Health Physicist [CHP] credential. The course has been meeting 8 AM – 10 AM each Saturday

morning through June 22nd, 2013 at Roane State Community College. A diverse group of highly experienced and qualified Chapter members have volunteered to lead the sessions. The exam will be provided during the week of the National meeting in July, hosted locally by our colleagues at ORISE.

STUDENT SECTION, ETCHPS

Our President-Elect, in cooperation with the University of Tennessee, is attempting to revive a Student Section of the chapter. Professor Lawrence Heilbronn is the faculty member is the liaison with the UTK Nuclear Engineering department. John Stooksbury is a UTK student who has agreed to assist with this effort.

HEALTH PHYSICS NEWSLETTER

Our chapter activities are now in print for the entire society to read. One article (Public Outreach / Radiation & You) has already been published in the June 2013 issue of the [Health Physics Newsletter](#). Another article chronicling the Second Memorial Turner Symposium is due in print in the near future. We are reprinting both of these articles here, in this ETCHPS newsletter.

PUBLIC OUTREACH EXPERIENCES OF THE EAST TENNESSEE CHAPTER By Henry Lynn, USNRC

For over 100 years, ionizing radiation has been beneficial to human beings for medical diagnosis and therapy, scientific research and generating electrical power. To help alleviate the prevalent, yet irrational fear of radiation, the members of the East Tennessee Chapter of the Health Physics Society (ETC-HPS) have twice presented free public seminars entitled "Radiation and You;" the first in Oak Ridge, Tennessee in 2012 and more recently in Chattanooga earlier this spring. The purpose of these seminars was to provide reliable and useful information to the public to assist in the understanding of ionizing radiation and to promote the awareness and understanding of nuclear science and technology. Each seminar included short presentations on topics including radiation basics, natural radioactivity, uses and regulation of radioactive material, and in Chattanooga, a personal testimony on medical applications: "Radiation Saved My Life." Following the presentations, industry professionals were on-hand to answer questions on related topics, and attendees were invited to view multiple demonstrations and displays. These included "seeing" radiation in a cloud chamber and handling radiation detection instruments to monitor naturally radioactive items such as lantern mantles, Vaseline glass, KCl salt and fiesta ware.



Speakers at the 2013 **Radiation and You** seminar at Chattanooga State Community College included: Henry Lynn, Elizabeth Gillenwalters, Thomas Rucker, Jennifer Bergeron, Dick Toohey, Alex Woods, and Roger Halsey.

FROM JAMES BOGARD, TURNER MEMORIAL SYMPOSIUM COMMITTEE

The Second James E. Turner Memorial Symposium on Radiological Physics and Dosimetry

East Tennessee Chapter Health Physics Society
Oak Ridge, Tennessee
May 22-23, 2013

The Second James E. Turner Memorial Symposium of the East Tennessee Chapter of the Health Physics Society (ETCHPS) was held May 22-23, 2013, in Oak Ridge, Tennessee. The Symposium honors the legacy of James E. (Jim) Turner, his contributions to the field of dosimetry and microdosimetry and his lifelong emphasis on providing a strong radiological physics foundation to young health physics professionals and students. Forty-five attendees heard presentations over two half-day sessions by health physicists faculty and students from Bloomsburg University, Clemson University, Francis Marion University, Georgia Institute of Technology

The University of Florida – Gainesville and The University of Tennessee – Knoxville.

The plenary address, *Health Physics and Global Nuclear Security*, was given by **Howard L. Hall**, Director of the UT Institute for Nuclear Security; Professor and Governor's Chair in Nuclear Security in the Department of Nuclear Engineering and the Bredesen Center for Interdisciplinary Research and Graduate Education (CIRE); and Senior Fellow and Director of Global Security Programs at The Howard H. Baker Jr. Center for Public Policy, The University of Tennessee. Prof. Hall's presentation discussed the need for professionals with many of the same skills as health physicists to anticipate, characterize, and implement countermeasures against nuclear terrorism.

The plenary address was followed by presentations from the University of Tennessee's Dr. Larry Miller, as well as multiple contributions from UT students Matthew Urffer and Andrew Mabe. Some of this UT research was in collaboration with South Carolina State University, effectively including a seventh academic institution in the symposium agenda. After a break sponsored by Dade Moeller, the final presentation of the Wednesday afternoon session was given by Clemson University graduate student Matthew Millard.

The May meeting of the East Tennessee Chapter of the Health Physics Society was also held in Pollard Auditorium as the conclusion of the Wednesday symposium session. A catered dinner was followed by a presentation from HPS President Elect Darrell Fisher.

The Thursday morning session, after a continental breakfast, included Brian Lee from Georgia Institute of Technology, Bloomsburg University student Jarrad Barnhart, and David Borrego from the University of Florida. Canberra Industries sponsored the mid-morning break, after which Elliott Stepusin also from the University of Florida presented his doctoral research. The final presentations of the morning session described the development of health physics related applications for mobile devices at Francis Marion University. Dr. Derek Jokisch presented for student Joseph Connor, who was ill. Pratik Patel followed and Dr. Jokisch concluded the Thursday morning session with all participants enjoying specially discounted downloads of the Francis-Marion developed health physics smart phone applications.

The symposium concluded with an Awards Luncheon sponsored by Oak Ridge Associated Universities (ORAU) and ETC-HPS and hosting the Chapter's Charter members. Awards for Best Student



David Borrego, Receiving symposium's Best Student Presentation award from Jim Bogard, Technical Program Chair and colleague of the late Dr. Turner

Presentation included a plaque and copies of James E. Turner's widely used textbook, **Atoms, Radiation, and Radiation Protection**, and the recently released **Statistical Methods in Radiological Physics** (co-authored by Dr. Turner).

The award for Best Student Presentation was made to David Borrego for *Developments to a Rapid In-Clinic Peak Skin and Organ Dose Algorithm for Improved Patient Risk Management During High-Dose Fluoroscopically Guided Interventions*. Mr. Borrego obtained his Master's degree from the University of Florida with a focus in medical physics and is a National Cancer Institute pre-doctoral fellow.



Brian Lee, Outstanding Student Presentation Award Winner from Georgia Tech

The Outstanding Student Presenter was Brian Lee (*A New Radiobiological Model Based on Monte Carlo Particle Track Structure*), a Ph.D. candidate in Medical Physics from The Georgia Institute of Technology's Nuclear and Radiological Engineering Department, who received a plaque and a copy of **Statistical Methods in Radiological Physics**. Brian is currently pursuing a doctoral degree from Georgia Tech. His research involves radiobiological modeling and nano-dosimetry using the GEANT4-DNA toolkit.

The Distinguished Student Presenter Award went to Elliott Stepusin for his presentation, *Impacts of Anthropomorphic Patient-Phantom Matching on Organ Dose in Computed Tomography Exams with and without Tube Current Modulation*. Elliott is pursuing his Ph.D. in biomedical engineering, with an emphasis in medical physics, from the University of Florida. He also received a plaque and a copy of **Atoms, Radiation, and Radiation Protection**.



Elliott Stepusin, Distinguished Student Presenter Award Winner

The Awards Committee made up of Dr. Turner's students, colleagues, and contemporaries, agreed that the student presentations were all excellent and of a quality beyond expectations. The Chapter is gratified by the response to the Second Memorial James E. Turner Symposium and has started planning for the Third in 2014.

Sponsors of the Second James E. Turner Memorial Symposium included: Canberra Industries, Dade Moeller, Restoration Services Incorporated, Landauer, the HPS Society Support Committee and Oak Ridge Associated Universities. Additionally, Wiley-VCH provided copies of James E. Turner's books **Atoms, Radiation, and Radiation Protection** and **Statistical Methods in**

Radiological Physics as awards. The Symposium has applied for continuing education credits from the American Academy of Health Physics.



LEFT-TO-RIGHT AND FRONT-TO-BACK:

Brad Graves, Myra Long, Eric Abelquist, Tammie Cagle, Mike Souleyrette, Amy Evans, Ken Veinot, Darrell Fisher, Roger Cloutier, Brian Lee, Chris Wang, Pratik Patel, Derek Jokisch, Elliott Stepusin, David Borrego, Tim DeVol, Jarrad Barnhart, Matthew Millard, Abu Ahmed, Elizabeth Gillenwalters, John Frazier, Jerry Hunt, Gloria Mei, Jeff Chapman, Matthew Urffer, Linda Hodges, Larry Miller, Alex Boerner, Joe Eddlemon, Gary Kephart, Jim Bogard