July 9, 2015
7:30 AM   Continental Breakfast and Welcome  
8:00 AM   Session Begins

**Historical Review of Radiation Risk Estimates, Quantities and Units**  
*Jerrold T. Bushberg, Ph.D., UC Davis Health System*

**Methods for Internal and External Dose Calculations**  
*Mutty Sharfi, CHP, MJW Companies*

**Break**

**Uncertainties in Internal Dose Estimates**  
*R. Craig Yoder, Ph.D., Landauer, Inc.*

**Uncertainties in External Dose Estimates**  
*Richard Toohey, Ph.D., M.H. Chew and Associates*

**Lunch**

**Using Epidemiology to Develop Radiation Risk Models**  
*TBD*

**Applying Risk Estimates in Radiation Protection**  
*Richard Vetter, Ph.D., Mayo Clinic*

**Break**

**Current Radiobiological Issues in Determining Radiation Risks**  
*John Zimbrick, Ph.D., Colorado State University*

Dinner   Evening Program to be Announced

July 10, 2015
7:30 AM   Continental Breakfast  
8:00 AM   Session Begins

**Accounting for Uncertainty in Retrospective Dose Estimation to Support Epidemiological Investigations of Radiation Risk**  
*Steve Simon, Ph.D., National Cancer Institute*

**How Complex Uncertainties in Dose Estimation Can Influence Risk Estimates in Epidemiology**  
*F. Owen Hoffman, Ph.D., Oak Ridge Center for Risk Analysis*

**Break**

**Evaluation of Uncertainties in Risk and Probability of Causation using the NIOSH-I REP Computer Code**  
*David Kocher, Ph.D., Oak Ridge Center for Risk Analysis*

**Lunch**

**Estimation of Past, Present, and Future Cancer Risks Using the NCI RadRAT Computer Code**  
*A. Iulian Apostoaei, Ph.D., Oak Ridge Center for Risk Analysis*

**Probability of Causation and Application in Compensation Programs**  
*Stuart Hinnefeld, CHP, NIOSH*

**Break**

**Communication of Radiation Risks: How People Interpret Risk Estimates**  
*Ray Johnson, Radiation Safety Counseling Institute*

Accommodations - Please inform the hotel you are with the HPS PDS for the best rates:

**Purdue Memorial Union**, 765-494-8900; $99-$125 per night

**Holiday Inn Lafayette City Centre**, 765-420-1505; $120 per night

Purdue University Residence Hall, email ifschwei@purdue.edu for this option; $30 single room with common bath, $65 suite with private bath, all rooms air conditioned

**Hilton Garden Inn West Lafayette Wabash Landing**, 765-743-2100

**Four Points by Sheraton West Lafayette**, 765-463-5511, or 866-716-8133
### Health Physics Society’s 60th Annual Meeting

**12-16 July 2015 - Indianapolis, Indiana**

<table>
<thead>
<tr>
<th>Name for badge: (First)</th>
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<tr>
<td>Affiliation (for badge) (limit to 18 characters and spaces):</td>
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**If Registering-Companion Name:**  

**TOTAL FEES ENCLOSED $**

### PREREGISTRATION DEADLINE 9 JUNE 2015

#### PROFESSIONAL DEVELOPMENT SCHOOL REGISTRATION FEE 9-10 July 2015, Purdue University:

- PDS Registration (Sun. Reception, Mon. Lunch, Night Out)  
  - Preregistration Fees: $650.00  
  - On-Site Fees: $750.00  
- PDS Full-Time Student Registration (Sun. Reception, Mon. Lunch, Night Out)  
  - Preregistration Fees: $325.00  
  - On-Site Fees: $425.00

#### MEETING REGISTRATION FEES 12-16 July 2015:

- HPS Member (Sun. Reception, Mon. Lunch, Tues. Awards Dinner)  
  - Preregistration Fees: $430.00  
  - On-Site Fees: $530.00  
- HPS 2015 Dues Renewal (Full, Associate)  
  - Preregistration Fees: $170.00  
  - On-Site Fees: $170.00  
- Non-Member* (Sun. Reception, Mon. Lunch, Tues. Awards Dinner)  
  - Preregistration Fees: $550.00  
  - On-Site Fees: $650.00  
- Emeritus Member (Sun. Reception, Mon. Lunch, Tues. Awards Dinner)  
  - Preregistration Fees: $215.00  
  - On-Site Fees: $265.00  
- One Day ONLY  
  - Preregistration Fees: $275.00  
  - On-Site Fees: $300.00  
- Student (Receptions)  
  - Preregistration Fees: $7.00  
  - On-Site Fees: $7.00  
- One Day ONLY Student  
  - Preregistration Fees: $40.00  
  - On-Site Fees: $40.00  
- Companion (Receptions, Breakfast, Mon. Lunch)  
  - Preregistration Fees: $110.00  
  - On-Site Fees: $110.00  
- Emeritus Companion (Receptions, Breakfast)  
  - Preregistration Fees: $55.00  
  - On-Site Fees: $55.00  
- HPS Member PEP Lecturer (Sun. Reception, Mon. Lunch, Tues. Awards Dinner)  
  - Preregistration Fees: $130.00  
  - On-Site Fees: $230.00  
- HPS Member CEL Lecturer (Sun. Reception, Mon. Lunch, Tues. Awards Dinner)  
  - Preregistration Fees: $280.00  
  - On-Site Fees: $380.00  
- Additional Tues. Awards Dinner Ticket(s) # of Tickets $67.00  
  - On-Site Fees: $67.00  
- AAHP Awards Lunch Ticket(s) (Tues.)  
  - Preregistration Fees: $10.00  
  - On-Site Fees: $10.00  
- AAHP Awards Lunch Ticket(s) (Tues.) Guest  
  - Preregistration Fees: $15.00  
  - On-Site Fees: $15.00

*Includes Complimentary Associate Membership for year 2015 - FIRST TIME MEMBERS ONLY

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### SOCIAL PROGRAM

- Cultural Trail Bike Tours (Sat 7/11, 5:30pm)  
  - Preregistration Fees: $95.00  
  - On-Site Fees: $105.00  
- Downtown Orientation Tour (Sun 7/12, 2:00-3:30pm)  
  - Preregistration Fees: $95.00  
  - On-Site Fees: $105.00  
- Active Indy Walking Tour, Monuments (Mon 7/13, 9:15-11:30am)  
  - Preregistration Fees: $65.00  
  - On-Site Fees: $75.00  
- Annual HPS 5K RUN/WALK (Tues 7/14, 6:30-8:30am)  
  - Preregistration Fees: $25.00  
  - On-Site Fees: $30.00

#### Run/Walk - Shirt Size: S M L XL XXL (XXL is available with Preregistration Only)  

- 60th Anniv. Dallara Indycar Factory, Motor Speedway (Tues 7/14, 8:45am-3:15pm)  
  - Preregistration Fees: $35.00  
  - On-Site Fees: $40.00  
  - # of Tickets X $75/adult  
  - # of Tickets X $80/adult

#### (XXL is available with Preregistration Only)

- Eiteljorg Museum of American Indians & Western Art (Wed 7/15, 10am-5pm)  
  - Preregistration Fees: $110.00  
  - On-Site Fees: $120.00  
  - # of Tickets X $10/adult  
  - # of Tickets X $15/adult

#### Pub Crawl (Wed, 7/15, 6:00pm)  

| Pub Crawl - Shirt Size: S M L XL XXL XXXL | (XXL and XXXL are available with Preregistration Only)  

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<th># of Tickets X $20</th>
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#### Night Out “Animals and all that Jazz” (Thurs 7/16, 5:00-9:00pm)  

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<th># of Tickets X $45/adult</th>
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### PAYMENT INFORMATION

- Government Requisitions are accepted for registration, however Purchase Orders are NOT accepted for PEP, AAHP, Social/Technical Tour Registration. HPS TAX ID # 04-6050367

- Check Payment: Health Physics Society, 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101

**Cardholder’s Information**  

- Card Number:  
  - Exp. Date:  
  - CV2:

**Cardholder Name:**  

**Signature:**  

**Email Address for receipt:**  

**Please see AAHP/PEP Registration form and Disabilities information on next page

**Registration Section Total** $  

**Social Program Total** $  

**AAHP/PEP Total (From Other Form)** $  

**TOTAL FEES ENCLOSED** $  

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If FAXing registration form, (703) 790-2672 please do not mail the original.
Please check the box to confirm you have read and understand the Cancellation/Substitution Policies

Cancellation/Substitution Policy: Substitutions of meeting participants may be made at any time without penalty. All conference and tour cancellations must be in writing and must reach the HPS Office by 9 June to receive a refund. All refunds will be issued after the meeting minus a 20% processing fee. Refunds will not be issued to no-shows.

AAHP Courses: Saturday, 7/11 - 8:00 AM - 5:00 PM
☐ AAHP1 Cavity Ionization in Theory and Experiment (Lucas) $275
☐ AAHP2 The US Regulatory Basis for Radiological Effluent Monitoring (Key) $275
☐ AAHP3 Nuclear Science and Technology at the WIPP (Hayes) $275

PROFESSIONAL ENRICHMENT PROGRAM
Special PEP Session: All Day Sunday, 7/12
☐ HAZWOPER Refresher, 8:00 AM-5:00 PM $360

Sunday, 7/12 8:00-10:00 AM
1-A Accelerator Physics for ES&H Professionals Part 1 (Cossairt)
1-B Basic Science Supports a Dose Rate Effectiveness Factor Greater than One (Brooks)
1-C Non-Ionizing Radiation: An Overview of Biological Effects and Exposure Limits (Edwards)
1-D So Now You’re the RSO: Elements of an Effective Radiation Safety Program (Morgan)
1-E Significance and Use of Revised ANSI N323AB for Portable Instrument Calibration (Walker)
1-F Introduction to Nuclear and Cyber Security for the Health Physicist (Harris)
1-G The Basics of Risk Mgmt & Insurance and Fire & Life Safety for Rad Safety Professionals (Emery, Gutierrez) $275

Sunday, 7/12 10:30 AM-12:30 PM
2-A Accelerator Physics for ES&H Professionals Part 2 (Cossairt)
2-B Practical Demonstrations for the Classroom (Cole)
2-C Laser Safety for Health Physicists (Edwards)
2-D CAP88 PC Version 4 Advanced Topics (Wood, Stuenkel, Rosnick)
2-E Environmental HP: Primer, Regulations, Data Mgmt and Exploration of “Sticky” Issues (Miller, Whicker)
2-F Physical Protection for Nuclear and Radiological Security (Walker)
2-G Security 101 and the Basics of Biological & Chem Safety for Radiation Safety Prof (Emery, Gutierrez)

Sunday, 7/12 2:00-4:00 PM
3-A Radiological Emer Response using Hotspot HP Codes & RadResponder (Buddemeier, Crawford, Palmer)
3-C Performing ANSI Z136-Based Laser Hazard Calculations (Edwards)
3-D Safety at the Convergence of Nanotechnology and Radiation-Related Activities (Hoover)
3-E Environmental HP: Primer, Regulations, Data Mgmt and Exploration of “Sticky” Issues (Miller, Whicker)
3-F Terrorist Threat and Consequence Mgmt in Radiological Security (Marianno)
3-G Measuring and Displaying Radiation Protection Program Metrics that Matter to Mgmt (Emery, Gutierrez)

Monday, 7/13 12:15-2:15 PM
M-1 Where did this Come from? Lessons Learned from Bioassay Investigations (Carbaugh)
M-2 Medical Laser Safety Program - What Health Physicists Need to Know (Elder)
M-3 Gamma Spectroscopy for the Health Physicist (Pan)
M-4 Truth, Trust, and Plain Language (Lazo, Classic)
M-5 Radiation Safety’s Role in Mitigating the “Insider Threat” Risk (Emery, Gutierrez)

Tuesday, 7/14 12:15-2:15 PM
T-1 Monte Carlo Basics for Radiation Transport (Hertel)
T-2 Transportation Regulations and Radiation Safety (Brown)
T-3 Use of an Excel®-Based Probabilistic Tool for Dose Reconstructions, and Schedule Analysis (Darois)
T-4 Use of Instrument Simulators for Radiation Safety Training (Straccia, Torres, Morton)
T-5 Developing a Laser Safety Program - Where does a Health Physicist Begin and... (Harvey)

Wednesday, 7/15 12:15-2:15 PM
W-1 Alpha Spectroscopy for the Health Physicist (Pan)
W-2 Overview of NRC Regs in 10 CFR Part 37, Physical Protection of Category 1 & Category 2... (Ragland)
W-3 Preparing for the Joint Commission - What the RSO Should Know (Elder)
W-4 How to Measure and Interpret Beta Exposure Rates (Voss)
W-5 Verifiction and Validation of Radiological Data (Rucker)

Thursday, 7/16 12:15-2:15 PM
Th-1 Designs for Solar Powered Radiation Monitoring Systems (Voss)
Th-2 Understanding Ionizing Radiation Carcinogenesis (Raabe)
Th-3 Randomness and Understanding of Stochastic Risk Assessments (Johnson)
Th-4 Health Physics Challenges in Proton Therapy (Mohaupt)
Th-5 Evaluating Radiation Skin Dose from Laboratory Contamination Events (Sturchio, Underwood)

AAHP Total $_____
PEP Total $_____
AAHP/PEP Total $_____
(Transfer these totals to previous page)