

University, Medical and Laboratory Health Physics

2006 Topical Meeting of:
Health Physics Society

(The Thirty-Ninth Midyear Topical Meeting of the Health Physics Society)

American Academy of Health Physics
Conference of Radiation Control Program Directors



Preliminary Program
January 22-25, 2006
DoubleTree Paradise Valley
Scottsdale, Arizona

Health Physics Society Committee Meetings

Saturday, January 21, 2006

FINANCE COMMITTEE

8:00 am - Noon

AAHP PART 2 PANEL

7:00 am - 6:00 pm

CONTINUING EDUCATION COMMITTEE

Noon - 5:00 pm

Sunday, January 22, 2006

AAHP PART 2 PANEL

7:00 am - 6:00 pm

AAHP EXECUTIVE COMMITTEE

8:00 am - 5:00 pm

HPS BOARD OF DIRECTORS

8:00 am - 5:00 pm

STANDARDS COMMITTEE

8:00 am - Noon

SYMPOSIA COMMITTEE

8:30 am - 4:00 pm

Monday, January 23, 2006

PUBLIC EDUCATION COMMITTEE

Noon-1:30 PM

HISTORYCOMMITTEE

Noon - 2:00 pm

STRATEGIC PLANNING COMMITTEE

1:00 - 2:00 pm

Tuesday, January 24, 2006

INTERNATIONAL RELATIONS COMMITTEE

10:00 am - Noon

**LAB ACCREDITATION POLICY
COMMITTEE & LAB ACCREDITATION
ASSESSMENT COMMITTEE**

10:00 am - 2:00 pm

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SCOTTSDALE, AZ

JOIN YOUR COLLEAGUES IN SCOTTSDALE FOR THE 2006 MIDYEAR TOPICAL MEETING.

The Valley of the Sun is the number-one destination of the Southwest with more than 300 days of sunshine a year. The average January temperature is a high of 65° and lows in the 40's. Enjoy warm days and cool nights, with an endless supply of things to do in and around the area.

Host Hotel - DoubleTree Paradise Valley

HPS has arranged a special rate at the DoubleTree Paradise Valley which is located just minutes from Old Town Scottsdale and just 12 miles from Phoenix Sky Harbor International Airport. A member of the Hilton Hotels Family of Brands, the resort is located near Scottsdale Fashion Square, the largest shopping center in the Southwest. Scottsdale is a premier golfing destination with nearly 200 courses in the metro area and is also home to other outdoor activities including hiking and biking.

All guestrooms offer the ambience of an upscale resort and amenities. Your luxurious guestroom will feature views of lush courtyard filled pools and fountains or exquisite desert vistas. Guestroom amenities include high-speed internet access, and large work areas. Premium rooms include Sweet Dream Beds with upgraded linen and pillows. The resort offers two large heated outdoor pools with Jacuzzi, health club facilities, kids play area, concierge, and a full-service restaurant and lounge. Enjoy the signature DoubleTree chocolate chip cookies served warm upon check-in.

Single/Double Rates: \$149.00. Please note that these rates do not include tax.

DoubleTree Paradise Valley

5401 N. Scottsdale Road
Scottsdale, AZ 85250
Phone: 877-445-6677

Reserve your room online at www.hps.org, or http://doubletree.hilton.com/en/dt/groups/private_groups/phxsjdt_hps/index.jhtml or call 877-445-6677. Reserve early to ensure a room at the group rate; the cutoff date is December 21, 2005. Once the block is sold out, rooms may not be available at the group rate.

CANCELLATION POLICY

All conference and tour cancellations must be in writing and must reach the HPS Office by December 21 to receive a refund. All refunds will be issued after the meeting and will be subject to a \$50 processing fee. Refunds will not be issued to no-shows.

TRANSPORTATION

HOW TO GET TO THE HPS MIDYEAR MEETING

All HPS sessions, courses and the exhibition will take place at the DoubleTree Paradise Valley in Scottsdale, AZ. Taxis from the Phoenix Sky Harbor Airport are approximately \$30 each way. 24-hour Super Shuttle service is available for about \$14 one way.

AVIS RENT-A-CAR – SPECIAL RATES

Avis Rent A Car has joined HPS to offer you special low car rental rates which apply beginning one week prior to and continuing one week after the dates of the meeting. All Avis rentals include automatic transmission, air conditioning, radio and unlimited mileage. Weekly rates require a five day minimum stay.

Call Avis at 1-800-331-1600 or online at www.avis.com Request the Avis Worldwide Discount #J953510 for special rates.

RECOMMENDED ON-YOUR-OWN EXCURSIONS

TOURS AND ATTRACTIONS

in the VALLEY OF THE SUN

All organized tours require advance reservations, and most require a major credit card to guarantee. Please contact the concierge for information, directions, and reservations.

CUSTOMIZED VAN TOURS

GRAND CANYON, daily COST: \$115 pp

Early departure between 7:00 and 8:00 am begins a fabulous day highlighting this most majestic of the world's wonders. The Cameron Trading Post on Navajo land is included. Approximately 13 hours.

(Also ask us about other van trips that may take you driving along the Apache Trail in the Superstition Mountains, shopping in old Mexico, or visiting local museums!)

MORE FUN!

GRAND CANYON BY AIR, daily COST: VARIES

3 Hour aerial tours afford great close-up views of the Canyon from the air. The Deluxe Air Tour lasts approximately 8 hours and includes the sights from the air, as well as lunch and a guided bus tour along the South Rim of the Canyon. Tour can also be upgraded to include a helicopter over the Canyon, or rafting on the Colorado River.

HORSEBACK RIDING, daily COST VARIES

Saddle up and see the West!! From beginners to experienced riders, our featured ranches show a warm welcome as they guide you along desert and mountain trails. Some ranches offer meals as well as pick up at the resort for additional fees.

HOT AIR BALLOONING, daily COST: \$170

Experience a flight of fantasy with limitless panoramic views of mountains and our Valley with its dramatic desert terrain. Time in the air is approximately 1 hour; cost includes the traditional champagne toast with breakfast or hors d'oeuvres, and pick up at the hotel. Total duration is approximately 3.5 hours. (expectant mothers not allowed)

GUIDED RAFT TOURS, daily COST \$55

This half-day float down the Salt River departs mornings and afternoons from the Walgreen's parking lot, located at the corner of Thomas and Power Rds., Mesa. Approximately a 45 minute to 1 hour drive from the Doubletree. Desert Voyagers, 480-998-7238 (no pick up available at resort).

SAIL PLANES, daily COST: \$85 - \$125

Float on the desert thermals at the Turf Soaring School. Standard and acrobatic flights are available. Located at 8700 W. Carefree Hwy, Phoenix, 602-439-3621. Allow 45 minutes to 1 hour drive time from the Doubletree. (no pickup available at the resort).

BIKE RENTAL, daily COST VARIES

From street bikes to mountain bikes, Arizona Outback Adventures has a bike for you! Located at 16447 N. 91st St at the corner of Bahia & 91st. 480-945-2881. The bike shop is approximately a 15 -20 minute drive. Open 9:00am until 6:00pm. (no pickup at the resort).

How about a motorcycle? (Must have valid motorcycle license to rent, no pickup at resort).

Hacienda Harley, 15600 N. Hayden Rd, Scottsdale, 480-905-1903. About a 15 minute drive.

BANK ONE BALLPARK TOURS COST: adults, \$6,
7-12 Yrs, \$4, 4-6 Yrs, \$2

This retractable-roof, state-of-the-art facility is home to the 2001 World Champion AZ Diamondbacks. Tour times can vary on game days. Non-game day tours at 10:30am, noon, 1:30pm, 3:00pm. 401 E. Jefferson St, Phoenix. 602-462-6000. 30 minute drive.

MORE GOOD STUFF

and interesting places to visit

ARIZONA SCIENCE CENTER: 220-seat planetarium, I-Werks Theatre, 350 hands-on activities, continuous demonstrations. Daily 10am-5pm. 480-860-2700.

CANYON LAKE ON THE APACHE TRAIL: Drive the foothills of the Superstition Mountains and cruise the lake on Dolly Steamboat (call for times and prices). 480-827-9144

COSANTI: Environmental architect Paolo Soleri's home and wind-bell foundry. Daily, 9am-5pm. 6433 E. Doubletree Ranch Rd. 480-948-6154

DESERT BOTANICAL GARDEN: Living exhibit of over 10,000 desert plants. Self- and guided tours available daily 8am-8pm. 1201 N. Galvin Pkwy, 480-941-1225, 480-481-8134.

HEARD MUSEUM: World-renowned museum showcasing the history and art of the native tribes of the Southwest, daily 9:30am-5pm. 2301 N. Central Ave, 602-252-8840 or 8848.

PHOENIX ART MUSEUM: 18th Century French painting, Western, American, and Oriental art make up the permanent exhibits. Closed Mondays, open Tuesday through Sunday, 10am-5pm, except until 9pm on Thursdays and Fridays. 1625 N. Central Ave, 602-257-1222

PHOENIX ZOO: Rated among the Top 10 US zoos, features desert animals and a children's zoo. Daily 9am-5pm. 455 N. Galvin Pkwy., 602-273-1341.

PUEBLO GRANDE MUSEUM & CULTURAL PARK: Site of the ancient Hohokam ruins upon which Phoenix is built. Monday-Saturday, 9am-4:45pm, Sunday, 1pm-4:45pm. Free on Sunday. 4619 E. Washington St, 602-495-0901.

RAWHIDE WESTERN TOWN: Authentic replica of an 1800's Old West town with dusty streets, wooden boardwalks, museums, and shops and a haunted house. Pan for gold, watch a gun fight in the street, ride the stagecoach and train, and have steak in the Golden Belle. Ask your concierge about Sundown Desert Cookouts taking place in certain months. Monday-Thursday, 5pm-10pm, Friday-Sunday 11am-10pm. 23023 N. Scottsdale Rd, 480-502-5600.

TALIESIN WEST: Western home and on-going architectural school founded by Frank Lloyd Wright in the 1920's. Most tours do not require advance reservations. Open daily, 9am-4ppm, 12621 N. Frank Lloyd Wright Blvd., 480-860-2700, or 480-860-8810.

GOLF CLUBS

For more information on Golf course and tee-times please contact the concierge desk at 480-947-5400 ext.3038 or 480-424-4038

Camelback Golf Club - 15 minute drive
McCormick Ranch Golf Club -15 minute drive
Phoenician Golf Club - 10 minute drive
Talking Stick Golf Club - 15 minute drive
Stonecreek Golf Club - 20 minute drive
TPC Golf Club - 25 minute drive
Kierland Golf Club - 25 minute drive
Desert Canyon Golf Club - 30 minute drive
Rancho Manana Golf Club - 30 minute drive
Wekopa Golf Club - 35 minute drive
Grayhawk Golf Club - 45 minute drive
Troon North Golf Club - 45 minute drive

Thursday, January 26

The Department of Homeland Security (DHS)

is offering a morning session on "Laboratory Accreditation"
for facilities doing or wanting to do radiation detection instrument testing.

Stay tuned for more information.

Registration Hours

Sunday, January 223:30-6:30 PM
Monday, January 23.....7:30 AM-3:00 PM
Tuesday, January 248:00 AM-3:00 PM
Wednesday, January 25.....8:00 AM-Noon

2006 Meeting Exhibitors

(as of 10/3/2005)

Registration Information

- Preregistration Deadline: December 21, 2005
- Registration fees for members and non-members include Welcome Reception, Exhibitor Reception and Proceedings
- Please make check payable to Health Physics Society
- Purchase orders are not accepted for PEP, AAHP or Tour Registration

Register now to reserve your place!

Register online at www.hps.org

OR:

Register by fax: Fax your completed form with credit card information to (703) 790-2672



OR BY MAIL:



Mail your completed form with payment to:
HPS Headquarters
1313 Dolley Madison Blvd., Suite 402
McLean, VA 22101

Mail completed registration form with check, purchase order or credit card information. You are considered registered when full payment or purchase order has been received.

Substitution/Cancellation Policy

Substitutions of meeting participants may be made at any time without penalty.

All cancellations are subject to a \$50 service charge. Cancellations must be in writing to the HPS Secretariat. Cancellation letters received by December 21 will be refunded total registration fees **minus** the \$50 service charge and will be refunded after the meeting. No refunds will be issued on cancellations received after December 21.

Exhibit Hours - Forum

Monday 5:00-6:30 PM Opening Reception
Tuesday 9:30 AM-5:00 PM
Tuesday Noon Lunch in Exhibit Hall
Wednesday 9:30 AM-Noon

AAHP/ABHP
AEA Technology QSA
Canberra
Chase Environmental
F&J
Fluke Biomedical
Gamma Products
Global Dosimetry
Hi-Q Environmental
Hopewell
International Isotopes
J.L. Shepherd & Assoc
Laboratory Impex
Landauer
Laser Professionals
Ludlum Measurements
MGP
ORAU
ORTEC
Protean Instrument
Radiation Safety Academy
Radiation Safety & Control Services
RSO Inc.
Soltec
Technical Associates
Teletrix
Thermo Eberline

To request a booth at the Midyear Topical Meeting, contact Sue Burk or Lori Strong at HPS Headquarters, (703) 790-1745, email: hps@BurkInc.com

Don't Forget This Date!

Meeting Preregistration Deadline: Wednesday, December 21, 2005
Hotel Reservation Deadline: Wednesday, December 21, 2005

Preliminary Technical Program

If a paper is going to be presented by other than the first author, the presenter's name is underlined>.

Monday, January 23

7:15-8:15 am

CEL 1

Population Monitoring. *C. Miller; Center for Disease Control*

8:30 am-12:15 pm

Pl: Plenary Session

Co-Chairs: *Kenneth Mossman and Ruth McBurney*

8:30 am

Welcome, Announcements, Introductions

Ken Mossman, Local Chair; Ruth McBurney, HPS President

8:40 am

Introduction and Welcome

Mary Manross, Mayor

8:45 am

PL.1

Security Enhancements for University, Medical and Academic Program Material Licensees Post 9/11

P. Lyons (G. William Morgan Lecturer); US Nuclear Regulatory Commission

9:30 am

P1.2

Future Directions in Medical Health Physics

R.J. Vetter; Mayo Clinic

10:15 am

BREAK

10:45 am

PL.3

Where are University Radiation Safety Programs Going?

J.P. Ring; Harvard University

11:30 am

P1.4

Future Directions in Applied Research for Industrial Uses of Lasers and Radioactive Materials

K.G.W. Inn; NIST

1:30 - 5:00 pm

Session 1: Medical Session

Co-Chairs: *TBD*

1:30 pm

1.1

Radiation Safety Considerations During I-125 Seed Localization of Non-palpable Breast Lesions

H.A. Walton, W. Pavlicek, P.J. Karstaedt, R.J. Gray; Mayo Clinic, Scottsdale

1:45 pm

1.2

Pathological Removal of Radioactive Seeds From Surgically Excised Tissue: Potential for Contamination

K.L. Classic, S.K. Carlson, Mayo Clinic, Rochester

2:00 pm

1.3

Patient Death, Cremation and/or Burial, Is Your Permanent Iodine-125 Prostate Brachytherapy Program Ready For It?

A.A. Germes; VA Medical Center San Francisco

2:15 pm

1.4

Balloon Brachytherapy for Brain Tumor – Experiences at University of Medicine and Dentistry of New Jersey (UMDNJ)

V.K. Lanka, L.C. Thelin, V.S. Reddy, A. Bishayee; University of Medicine and Dentistry of New Jersey

2:30 pm

1.5

Neutron Scattered Dose Equivalent to a Fetus From Proton Radiotherapy of the Mother

G.A. Sandison, G. Mesoloras, R.D. Stewart, J.B. Farr, W.C. Hsi; Purdue University, Midwest Proton Radiotherapy Institute

2:45 pm

1.6

The Roles of Medical Health Physicists in a Nuclear or Radiological Emergency

C.M. Miller, R.C. Whitcomb, Jr., A. Ansari, C. McCurley, A. Guinn, F. Tucker; Centers for Disease Control & Prevention

3:00 pm

1.7

Rapid Extraction of Plutonium from Urine by Pyrosulfate Fusion and PERALS Spectroscopy

R.L. Metzger, P.H. Pouquette, G.W. Klingler; Radiation Safety Engineering

3:15 pm

BREAK

3:45 pm

1.8

Automatic Health Care Laser Activation Indicator Design for a Large University Medical Center

B.E. Edwards; Duke University Medical Center

4:00 pm

1.9

Review of Cumulative Skin Dose Estimation for Multiphasic Interventional Examinations

R. Paden, M.B. Peter, W. Pavlicek, E. Huettl; Mayo Clinic

4:15 pm

1.10

Mammographic Breast Dose for Implant Patients

M.B. Peter, W. Pavlicek, R. Paden; Mayo Clinic, Scottsdale

4:30 pm

1.11

Comparison of Three NCRP 147 Computed Tomography Shielding Methodologies Within a Large University Hospital Setting

B.K. Sramek, M.A. Charlton, C.A. Shriver; University of Texas Health Science Center at San Antonio

4:45 pm

1.12

Patient Dose Savings in Body CT Using Automated Tube Current Modulation and Manual Technique Charts

W. Pavlicek, R. Paden, M.B. Peter; Mayo Clinic

5:00 - 6:30 pm

Exhibit Hall Opening Reception

Tuesday, January 24

7:15-8:15 am

CEL 2

Recent Advances in Radiotherapy. *T. Paul; Banner Good Samaritan Medical Center*

8:30 - 10:15 am

Session 2: Training & Education

Co-Chairs: TBD

8:30 am **2.1**
Educating Medical Staff About Responding to a Nuclear or Radiological Emergency
C. McCurley, C.W. Miller, F. Tucker, A. Guinn, E. Donnelly, M. Holcombe, A. Ansari; Centers for Disease Control and Prevention

8:45 am **2.2**
Just-in-Time Training for Hospital Clinicians Responding to a Mass Casualty Radiological Emergency
C. Miller, F. Tucker, C. McCurley, A. Ansari; Centers for Disease Control and Prevention

9:00 am **2.3**
Development of Geiger-Mueller Kits and Kearney Fallout Meters
J.A. Chapman, P.W. Frame, A.J. Boerner, E.W. Abelquist; ORAU

9:15 am **2.4**
How to Respond to Worker Concerns for Radiation Safety
R.H. Johnson; Radiation Safety Academy

9:30 am **2.5**
"Ask The Experts" Evolution: Becoming Your Resource
K. Classic, F. Baes, G. Roessler; HPS Associate Web Editor, HPS Web Master, HPS Web Editor

9:45 am **2.6**
Laser Safety Training Programs
J.E. Jones, Y.B. Jones; Laser-Professionals Inc.

10:00 am **2.7**
Re-vitalizing a Radiation Dosimetry Laboratory Class
T.E. Johnson, J.D. Zimbrick; Colorado State University

10:15 am **BREAK in EXHIBIT HALL**

10:45 am-12:15 pm

Session 3: Research Environment

Co-Chairs: TBD

10:45 am **3.1**
Use of Fixed Air Samplers to Identify Sources of Intakes
D. Wannigman, M. Lee; Los Alamos National Laboratory

11:00 am **3.2**
Air Flow Control
E.D. Lesses, T. Voss; Los Alamos National Laboratories

11:15 am **3.3**
Is 5 Gauss Low Enough? Static Magnetic Field Safety in the Research Environment
M.J. Dorman, C. Smock, V.P. Williams; Wyeth Research, Johnson & Johnson, Merck Research Laboratories

11:30 am **3.4**
Radiation Safety Management at a Biotech Facility with High Level Requirements
R. Goriparthi; Genentech

11:45 am **3.5**
Radiation Safety and Security at 3M's Broad Scope Research Facilities
D.J. McGrane, M.W. Hinz; 3M

12:00 pm **3.6**
Can One Prevent Misuse By Insiders?
N. Jacob; Brown University

12:15 - 1:30 pm

Lunch in Exhibit Hall

1:30 - 2:30 pm

Session 4: Waste Disposal Issues

Co-Chairs: TBD

1:30 pm **4.1**
Handling, Measuring and Packaging a 200 GBq Co-60 Pipe Source: An Operational Overview
P.J. McDermott; Rutgers University

2:00 pm **4.2**
Conversion of a Primary Experimental Area at the Los Alamos Neutron Science Center (LANSCE)
M. Duran, J. Eddleman, R. Garcia; Los Alamos National Laboratory

2:15 pm **4.3**
Saving Real Money and Increasing Safety: Short-lived Radioactive Waste Management at an Academic Medical Institution in the Big Apple
M. Williamson, L. Dauer, B. Quinn; Memorial Sloan-Kettering Cancer Center

2:30 pm **BREAK in EXHIBIT HALL**

3:00 - 5:00 pm

Session 5: Management, Administration & Regulatory Considerations

Co-Chairs: TBD

3:00 pm **5.1**
Perspectives on the First Decade of the Integrated Materials Performance Evaluation Program (IMPEP)
A.D. White, K.N. Schneider; US Nuclear Regulatory Commission

3:15 pm	5.2	4:15 pm	5.6
CRCPD's Suggested State Regulations Cover All Aspects of Radiation Protection and Control <i>D. McBaugh; CRCPD & Washington State Dept of Health</i>		Self-Audit Program for NRC Inspection <i>T.L. Kellogg, K.G. Bharathan; University of Vermont</i>	
3:30 pm	5.3	4:30 pm	5.7
Trying to Make an Inspector's Duties Easier <i>J.G. Yusko; Pennsylvania Department of Environmental Protection</i>		Importance of the Radiation Safety Officer <i>F.J. Bradley; HP Consultant</i>	
3:45 pm	5.4	4:45 pm	5.8
A Dysfunctional Radiation Safety Program <i>A. Fellman; Radiation Safety Academy, Inc.</i>		A Compliant Hiring Procedure for a University Radiation Safety Officer (RSO) <i>M.E. McCarthy; University Massachusetts/Amherst</i>	
4:00 pm	5.5		
Management Lessons from Radiation Accidents <i>A. Brodsky; SAIC & Georgetown University</i>			

Join us!
The 51st Annual
Health Physics Society Meeting
June 25-29, 2006
in
Providence, Rhode Island

Wednesday, January 25

8:30 - 9:45 am

Session 6: Medical 2

Co-Chairs: TBD

- 8:30 am** **6.1**
A Monte Carlo Shielding Model for PET/CT Clinics
R.L. Metzger, K.A. Van Riper; Radiation Safety Engineering, Inc
- 9:00 am** **6.2**
Management of Large I-131 Doses for Pediatric Patients: 18 mCi/kg MIBG
M. Williamson, L. Dauer, C. Horan; Memorial Sloan-Kettering Cancer Center
- 9:15 am** **6.3**
One Hospital's Experience Implementing a Radioactive Waste Segregation Education Program for Nuclear Medicine Treatment Patients
M.H. Mozzor, M.D. High; New York Medical College
- 9:30 am** **6.4**
Pancake G-M Detectors in a Technetium-99m World
S.A. Fitch; New Mexico Radiation Control Bureau
- 9:45 am** **BREAK in EXHIBIT HALL**

10:15 - 11:45 am

Session 7: Management, Administration & Regulatory Considerations 2

Co-Chairs: TBD

- 10:15 am** **7.1**
Misadventures in Diagnostic and Therapeutic Radiation Medicine
R.E. Dansereau, J. Krishnamoorthy; NYS Department of Health
- 10:30 am** **7.2**
Licensing Evaluation for Broad Scope Medical Facilities
D. Gilley; Florida Department of Health
- 7.3** **CANCELLED**
- 10:45 am** **7.4**
The Texas Policy on Nurses Injecting Radiopharmaceuticals
P.H. Myers, R.E. McBurney; Texas Department of State Health Services
- 11:00 am** **7.5**
Radiopharmacy Regulatory Program Changes in North Carolina
J.D. Albright, W.L. Cox, A. Sykes-Cook; North Carolina Radioactive Materials Branch, North Carolina Board of Pharmacy

- 11:15 am** **7.6**
Inspection of Radio-Laboratories
B.L. Hamrick; California Department of Health Services

- 11:30 am** **7.7**
Personnel Monitoring for Electron Microscopes and Challenges With State Regulations
D. Hrabinski, M. Aldrich; Rutgers, The State University of New Jersey

1:30 - 3:00 pm

Session 8: Training & Education 2

Co-Chairs: TBD

- 1:30 pm** **8.1**
Yearly Radiation Safety Training in the Medical and Research Environment
K.M. Knight-Wiegert, R.Y. Yoss; Medical College of Wisconsin and Froedtert Hospital in Milwaukee, Wisconsin
- 1:45 pm** **8.2**
Why Provide Radiation Safety Awareness Training for Ancillary Personnel?
R.H. Johnson; Radiation Safety Academy
- 2:00 pm** **8.3**
Incorporating Internet and Digital Training Modalities – Considerations for a Broad Scope Licensee
M. Aldrich, D. Hrabinski; Rutgers, The State University of New Jersey
- 2:15 pm** **8.4**
Mobile Learning Pedagogy in Health Physics
E.J. Waller; University of Ontario Institute of Technology
- 2:30 pm** **8.5**
Designing, Implementing, and Conducting a Web-based Radiation Safety Course for a Large Biomedical Research Institution
J.A. Watson, M.A. Charlton, C.A. Shriver; Texas A&M University, University of Texas
- 2:45 pm** **8.6**
A Computer-Based Introductory Radiation Safety Course
T.H. Mohaupt, K. Morris; Wright State University

American Academy of Health Physics

Saturday, January 21, 2006 - 8 AM-5 PM

AAHP 1 Medical Internal Dose Assessment

Michael G. Stabin; Vanderbilt University

Internal dose calculations for medical applications are heavily model based. Input data come from experiments involving animals or human subjects. This course will describe, in detail and with practical examples, the process of developing radiation dose estimates for these applications. The focus will be on calculating dose to human subjects using therapeutic agents, but discussion will also cover general dose calculations for diagnostic agents as well as recent interest in calculating dose to some animal species. Existing state of the art models and techniques will be described and demonstrated using realistic input data (animal data, human image data, and other sources). An overview of important literature and software resources will be given; the MIRD and RADAR calculational systems will be described in detail. The development and solution of integrated kinetic models to describe systemic uptake and retention will be explained and demonstrated by various examples. Principles of study design for human and animal studies and current trends towards three dimensional and more patient specific model approaches will be discussed. Finally, the contents of a new AAPM/HPS standard on fetal dosimetry will be explained; this standard prescribes methods for calculating the dose to the fetus at all stages of pregnancy in diagnostic radiology, nuclear medicine, radiation therapy, and for radiation workers.

AAHP 2 Health Effects of Ionizing Radiation in the Context of Radiological and Nuclear Terrorism

Daniel Strom; Pacific Northwest National Laboratory

Topics to be covered include:

- Protracted irradiation
- Irradiation by intakes of radionuclides
- Irradiation by dermal contamination ("ontakes"), and
- Irradiation by highly radioactive shrapnel in wounds

The course will focus on health effects not only from high dose-rate and high dose radiation, but on health effects from all irradiation scenarios that may result from terrorism. This includes inhalation of radionuclides, ingestion of radionuclides, direct irradiation from contaminated surfaces, direct irradiation from point sources, and dermal irradiation. All of these will be discussed, along with combinations of the above. The discussion will also consider the effects of initial nuclear radiation (INR) from a nuclear detonation, fallout from a nuclear detonation, and also from aged fission products.

Epidemiology, radiobiology, and the impact of medical and radiation protection interventions on health effects will be addressed.

- For epidemiology, evidence will be presented for protracted irradiation as well as acute irradiation.
- For radiobiology, evidence will be presented as well as speculation for protracted irradiation as well as acute irradiation.
- For medical intervention, evidence will be presented of diagnosis and treatment intended to both limit dose and limit health effects, from both acute and protracted irradiation.
- For radiation protection, methods would be presented for mitigating the effects.

NOTE FOR CHPs

The American Academy of Health Physics has approved the following meeting-related activities for Continuing Education Credits for CHPs:

- Meeting attendance is granted 2 CECs per half day of attendance, up to 12 CECs;
- AAHP 8 hour courses are granted 16 CECs each;
- HPS 2 hour PEP courses are granted 4 CECs each;
- HPS 1 hour CELs are granted 2 CECs each.

Professional Enrichment Program

Sunday, January 22, 2006

8:00 - 10:00 am

PEP 1-A Basics of Fire & Life Safety and Risk Management & Insurance, Part 1

R. Emery; University of Texas at Houston, Radiation Safety Division

It is currently quite rare for universities and hospitals to maintain stand-alone radiation safety programs. Resource constraints and the complexities of modern and patient care have served as a catalyst for the creation of comprehensive environmental health & safety (EH&S) programs, which include among other health and safety aspects, radiation safety programs. Unfortunately, many of these consultations were not accompanied by formal staff training efforts to instill an understanding of the areas now aligned with the radiation safety function. This is unfortunate because, with a basic understanding of the other safety programs, the radiation safety staff can provide improved customer service and address many simple issues before they become major problems. This unique professional enrichment program series is designed to address this shortcoming by providing an overview of a number of key aspects of EH&S programs, from the perspective of practicing radiation safety professionals who now are involved in a broader set of health and safety issues. The PEP series will consist of three 2 hour segments:

- Part 1 will address the "Basics of Fire & Life Safety and Risk Management & Insurance for hospitals and universities. Included in the fire & life safety segment will be a discussion of the basic elements of the life safety code and the fire detection and suppression systems. The requirements for means of egress will be discussed. The risk management & insurance portion will address the risks if retained risks (those which are not covered by insurance) and transferred risks (those covered by a financial vehicle).

- Part 2 will examine the "Basics of Biological & Chemical Safety and Institutional Security". During the session, the classification of infectious agents and the various assigned biosafety levels will be discussed. Various aspects of chemical exposures, exposure limits, monitoring and control strategies will be presented. The basics of security as they apply to hospital and university settings will also be presented, along with the various strategies employed to improve security controls.

- Part 3 will focus on "Understanding the Unique Needs of Faculty and 50 Things any University or Hospital Safety Staff Person Should Know". The part portion of the session will describe the challenges faculty face and how to operate safety programs that are in line with these under-

lying needs and desires. The session will conclude with a discussion of the 50 basic things considered necessary for any institutional safety person to know about their program and their organization. These 50 items cover a breath of topics, are both objective and subjective in nature, and are sure to result in a provocative discussion amongst participants.

Each PEP segment is designed so that participants can take any session individually, although the maximum educational benefit will be derived from the participation in all three sessions. The particular topics included in the PEP series have been consistently identified as extraordinarily useful to participants in the highly successful week-long "University of Texas EH&S Academy." Ample time will be allotted for questions answers and discussion, and each segment will be supplemented with key reference information.

PEP 1-B A View into the Future of Radiation Detection

M. Cox; Consultant

Based on forty years of experience in the applications, business, research and developments, and servicing of all types of radiation detection instruments, the author will share his views of needed new radiation detection technology, some new instruments, and some related new standards. Until recently radiation detection technology and instruments were relatively stable, coping with almost universally mature markets and applications, while badly needing a new stimulus or driver. The Department of Homeland Security provided the hungry industry with just such a literally and proverbially needed "kick in the pants." New applications areas include borders, seaports, airports and other similar strategic locations along with new detection requirements were precisely what the radiation detection instrument manufacturers needed to invest in new technology and new instrumentation. Concurrently new radiation detection instrument standards have been and continue in development to support the trend toward new, faster, more user friendly and more intelligent instruments. The new standards are being developed by both the American National Standards Institute (ANSI) Homeland Security Instrumentation (HSI) and Radiation Protection Instrumentation (RPI) groups. The international effort to develop parallel new instrument standards is led by the International Electrotechnical Commission (IEC) Technical Committee TC45, Subcommittee (SC) 45B. This is an interactive presentation requiring audience participation and comment.

PEP 1-C Shielding Design for PET and PET/CT Clinics

B. Metzger; Radiation Safety Engineering, Inc.

The number of Positron Emission Tomography (PET) centers has been growing rapidly. Many of the new facilities have been retrofitted into existing imaging centers and hospitals. Space in the facilities is often cramped, resulting in the hot lab, patient quiet rooms, and the scanners frequently being placed in close proximity to uncontrolled areas where non-occupational dose limits apply. Shielding design is difficult due to the mobile nature of the source (dosed patient).

In this PEP, the function and typical layouts for PET or PET/CT clinics will be discussed and the shielding design issues associated with these layouts will be reviewed. The AAPM guide for shielding design of PET clinics will be reviewed in detail and examples of typical shielding calculations will be presented using both point kernel and Monte Carlo methods. Finally, advanced MCNP and Mercurad shielding design methods for layered floor and ceiling shielding will be shown.

10:30 am - 12:30 pm

PEP 2-A Basics of Biological & Chemical Safety and Institutional Security, Part 2

R. Emery; University of Texas at Houston, Radiation Safety Division

See information under PEP 1-A

PEP 2-B QA/QC in Diagnostic Imaging

W. Pavlicek; Mayo Clinic, Scottsdale

This presentation will touch upon several recent developments in QA in diagnostic radiology, focusing on the implications for patient exposure from x-ray examinations. Topics include the effect of increased use of direct and indirect digital detectors, the new FDA regulations for fluoroscopy (collimation, use of last image hold, filtration, etc.), and use of Reference Dose levels for common radiographic examinations and computed tomography. These changes result in user selectable trade-offs between image quality and radiation dose. There is also an increasing awareness of the impact from medical sources of population exposure as well as a JCAHO directed national goal of addressing age-specific criteria for all medical care. In this regard, quality assurance has an expanded role in not only the performance and monitoring of x-ray equipment, but also in providing support for documentation of the prescription of patient dose.

PEP 2-C Neutrons - Sources, Detection, and Safety

J. Chapman; Oak Ridge Associated Universities

In 1932, James Chadwick published a seminal paper in the Proc. Roy. Society titled "The Existence of a Neutron." 73 years later we rely on a number of detection processes to provide neutron dosimetry for personnel, to

confirm operational shielding design requirements, and to measure special nuclear materials (SNM). This PEP session will focus on the fundamentals of neutron detection and an overview of devices used to detect SNM. The following topics will be covered: fast neutron detectors; thermal neutron detectors; neutron moderation and absorption; passive neutron counting with SNAP detectors; passive neutron coincidence and multiplicity counting; active neutron interrogation; and portal monitors.

2:00 - 4:00 pm

PEP 3-A Understanding the Unique Needs of Faculty and 50 Things any University or Hospital Safety Staff Person Should Know, Part 3

R. Emery; University of Texas at Houston, Radiation Safety Division

See information under PEP 1-A.

PEP 3-B Tritium - Benign Uses for the Only Radioactive Isotope of Hydrogen

*D. Wells; RAD*Ware, Inc.*

If you're not part of the STAR (Safety and Tritium Applied Research) program at INEEL (Idaho National Engineering and Environmental Laboratory) or one of several other DOE (Department of Energy) programs involved in research and development for the fusion community, what would you do with several thousand Curies of Tritium? You could 'bag' an elk or a mule deer in Colorado or find an exit in a dark theatre. In the quieter, non-research community, tritium illuminates the targeting devices on personal weapons, helps us find our way out in dark environments, and other similar uses. While most of these uses are well known, the ramifications of working with multiple Curies of tritium are not necessarily well understood, especially by those doing the day-to-day handling. As with most organizations that handle radioactive materials, a knowledgeable RSO (Radiation Safety Officer) is the key to a good Radiation Protection program. What happens to such a program when inadequate attention has been provided for the programmatic health physics aspects? Proper controls are required for a safe operational environment for all personnel. In examining one such program, we look at the procedures required, the level of training, how to make individuals aware of the reality of radiation safety and their part in it, and the necessity of bioassay when dealing with tritium.

PEP 3-C Artifacts in Screen Film Mammography

R. Wong; Radiation Safety Engineering

Screen-film is still the predominant modality for mammography today. Although the modality is mature, the creation of unwanted artifacts is still a problem and is of major concern. This talk will show and discuss examples of the major artifacts, their causes and their cures. The artifacts discussed will include those made by the mam-

mography unit, those found with screens and film, and those made by the film processor.

References: Identifying and Correcting Processing Artifacts, JH Widmer, RF Lillie, S. Jaskulski, and AG Haus, Technical and Scientific Monograph No 4. Eastman Kodak Co. and Mammography Quality Control Manual, 1999 edition, American College of Radiology.

**Health Physics Society Midyear Topical Meeting – Registration Form
January 22-25, 2006 Scottsdale, Arizona**

Name for badge: (Last) _____(First) _____(Nickname) _____
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Preregistration Deadline: December 21

REGISTRATION FEES: (Mark Appropriate Boxes)	Preregistration	On-Site Fees
<input type="checkbox"/> HPS/CRCPCD Member (Receptions and Proceedings)	\$340.00	\$415.00
<input type="checkbox"/> Non-Member* (Receptions and Proceedings)	\$410.00	\$485.00
<input type="checkbox"/> Student (Receptions and Proceedings)	\$ 60.00	\$ 60.00
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TECHNICAL TOURS:

- St. Joseph's Hospital Gamma Knife (Wed am, 1/25) # of Tickets ____ X \$15 # of Tickets ____ X \$20 _____
 ALCOR Technical Tour (Wed pm, 1/25) # of Tickets ____ X \$15 # of Tickets ____ X \$20 _____

AAHP (Saturday, January 21) AND PEP (Sunday, January 22) COURSES:

- Course 1 – Medical Internal Dose Assessment. *Michael G. Stabin* \$200.00
 Course 2 – Health Effects of Ionizing Radiation in the Context ...*Daniel Strom* \$200.00

8:00–10:00 AM (3 concurrent courses)

- 1-A Basics of Fire & Life Safety and Risk Management & Insurance, Part 1 (*R. Emery*)
 1-B A View into the Future of Radiation Detection (*M. Cox*)
 1-C Shielding Design for PET and PET/CT Clinics (*B. Metzger*)

10:30 AM–12:30 PM

- 2-A Basics of Biological & Chemical Safety and Institutional Security, Part 2 (*R. Emery*)
 2-B QA/QC in Diagnostic Imaging (*W. Pavlicek*)
 2-C Neutrons - Sources, Detection, and Safety (*J. Chapman*)

2:00–4:00 PM

- 3-A Understanding the Unique Needs of Faculty and 50 Things..., Part 3 (*R. Emery*)
 3-B Tritium - Benign Uses for the Only Radioactive Isotope of Hydrogen (*D. Wells*)
 3-C Artifacts in Screen Film Mammography (*R. Wong*)

8:00–10:00 AM ____/____ = \$60.00 1st 2nd <input type="checkbox"/> Yes, stand by
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