Saturday

104th Scientific Assembly and Annual Meeting
November 25–30 | McCormick Place, Chicago

RSNA® 2018
TOMORROW'S RADIOLOGY TODAY

SPPH01

AAPM/RSNA Physics Tutorial Session 1

Saturday, Nov. 24 12:00PM - 2:00PM Room: E351

`BQ` `GI` `MR` `NM` `PH`

AMA PRA Category 1 Credits ™: 2.00
ARRT Category A+ Credits: 2.25

`FDA` Discussions may include off-label uses.

Participants
Thaddeus A. Wilson, PhD, Madison, WI (*Moderator*) Nothing to Disclose

Sub-Events

SPPH01A PET/CT Introduction and Clinical Applications

Participants
Osama R. Mawlawi, PhD, Houston, TX (*Presenter*) Research Grant, General Electric Company; Research Grant, Siemens AG

For information about this presentation, contact:

omawlawi@mdanderson.org

LEARNING OBJECTIVES

1) Describe the latest advances in hardware and software for PET/CT imaging. 2) Explain how these advances affect PET image quality and quantification. 3) Describe novel PET/CT clinical applications using new radiopharmaceuticals. 4) Discuss future developments and clinical applications of PET/CT imaging.

SPPH01B PET/MR Introduction and Clinical Applications

Participants
Robert A. Pooley, PhD, Jacksonville, FL (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

pooley.robert@mayo.edu

LEARNING OBJECTIVES

1) Describe reasons for combining PET and MR into a single scanner. 2) Explain how PET instrumentation can affect MR, and how MR instrumentation can affect PET. 3) Identify PETMR protocol acquisition strategies. 4) Describe clinical applications of PETMR.

SPPH01C Quantitative SPECT

Participants
Benjamin M. Tsui, PhD, Baltimore, MD (*Presenter*) Researcher, Koninklijke Philips NV; License agreement, General Electric Company;

For information about this presentation, contact:

btsui1@jhmi.edu

LEARNING OBJECTIVES

1) Define quantitation and quantitative SPECT. 2) List and describe the image degrading factors of SPECT. 3) Describe methods to compensate for the SPECT image degrading factors. 4) Assess quality and quantitative accuracy improvements of quantitative SPECT images. 5) Apply quantitative SPECT to clinical practices.

ABSTRACT

Recent development and application of quantitative SPECT have provided significantly improved image quality and quantitative accuracy that aid in clinical diagnosis and treatment of diseases. In this educational course, we will define quantitation, quantitative SPECT and its goals. The image degrading factors of SPECT will be listed and described. Methods that compensates for the image degradation factors will be presented and explained. Examples of improvements in image quality and quantitative accuracy in various clinical applications will be presented.

Active Handout:Benjamin M. Tsui

http://abstract.rsna.org/uploads/2018/18000347/RSNA-QuantitatveSPECT HandoutSPPH01C.pdf

SPGW01

NIH Grantsmanship Workshop

Saturday, Nov. 24 1:00PM - 5:00PM Room: E253AB

RS

AMA PRA Category 1 Credits ™: 4.00
ARRT Category A+ Credit: 0

Participants

Gayle E. Woloschak, PhD, Chicago, IL (*Moderator*) Nothing to Disclose

LEARNING OBJECTIVES

1) Gain greater understanding of the NIH grants process: a. Understand the process for preparing a research or training grant application. b. Learn the elements of a competitive grant application. 2) Gain insight into the new features of the NIH review process. 3) View the review process in action through a mock study section.

Sub-Events

SPGW01A   Welcome and Introductory Remarks

Participants
Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

SPGW01B   Preparing an R01 Research Application

Participants
Maryellen L. Giger, PhD, Chicago, IL (*Presenter*) Stockholder, Hologic, Inc; Shareholder, Quantitative Insights, Inc; Shareholder, QView Medical, Inc; Co-founder, Quantitative Insights, Inc; Royalties, Hologic, Inc; Royalties, General Electric Company; Royalties, MEDIAN Technologies; Royalties, Riverain Technologies, LLC; Royalties, Mitsubishi Corporation; Royalties, Canon Medical Systems Corporation

For information about this presentation, contact:

m-giger@uchicago.edu

LEARNING OBJECTIVES

View Learning Objectives under main course title.

SPGW01C   Preparing K Awards

Participants
Ruth C. Carlos, MD, MS, Ann Arbor, MI (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

Honored Educators

Presenters or authors on this event have been recognized as RSNA Honored Educators for participating in multiple qualifying educational activities. Honored Educators are invested in furthering the profession of radiology by delivering high-quality educational content in their field of study. Learn how you can become an honored educator by visiting the website at: https://www.rsna.org/Honored-Educator-Award/ Ruth C. Carlos, MD, MS - 2015 Honored EducatorRuth C. Carlos, MD, MS - 2018 Honored Educator

SPGW01D   Clinical Trials in Applications

Participants
Michael W. Vannier, MD, Crete, IL (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

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SPGW01E Program Perspectives

Participants
Manana Sukhareva, PhD, Bethesda, MD (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

ABSTRACT

SPGW01F The Process of Review

Participants
Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

SPGW01G Mock Study Section

Participants
Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose
Maryellen L. Giger, PhD, Chicago, IL (*Presenter*) Stockholder, Hologic, Inc; Shareholder, Quantitative Insights, Inc; Shareholder, QView Medical, Inc; Co-founder, Quantitative Insights, Inc; Royalties, Hologic, Inc; Royalties, General Electric Company; Royalties, MEDIAN Technologies; Royalties, Riverain Technologies, LLC; Royalties, Mitsubishi Corporation; Royalties, Canon Medical Systems Corporation
Ruth C. Carlos, MD, MS, Ann Arbor, MI (*Presenter*) Nothing to Disclose
Michael W. Vannier, MD, Crete, IL (*Presenter*) Nothing to Disclose
Elizabeth A. Krupinski, PhD, Atlanta, GA (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

ekrupin@emory.edu

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LEARNING OBJECTIVES

1) Understand how an NIH review session takes place.

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SPGW01H Questions to the Faculty

Participants
Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

SPGW01I Summary

Participants
Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

View Learning Objectives under main course title.

SPGW01J Adjourn

SPPH02

AAPM/RSNA Physics Tutorial Session 2

Saturday, Nov. 24 2:15PM - 4:15PM Room: E351

NM **PH**

AMA PRA Category 1 Credits ™: 2.00
ARRT Category A+ Credits: 2.25

FDA Discussions may include off-label uses.

Participants
Thaddeus A. Wilson, PhD, Madison, WI (*Moderator*) Nothing to Disclose

Sub-Events

SPPH02A   The Nuts and Bolts of Dosimetry in Nuclear Medicine and its Application

Participants
Michael G. Stabin, PhD, Nashville, TN (*Presenter*) Software, Vanderbilt University

LEARNING OBJECTIVES

1) Understand current models and methods used in radiation dosimetry for radiopharmaceuticals. 2) Understand methods for new drug approval with the FDA. 3) Understand current experience with radiopharmaceuticals used in therapy: types of compounds, clinical experience, biological effects.

SPPH02B   Theranostics Introduction and Applications

Participants
Hossein Jadvar, MD, PhD, Pasadena, CA (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

jadvar@med.usc.edu

LEARNING OBJECTIVES

1) Define theranostisc. 2) Review the history and current clinical applications of theranostics. 3) Describe potential outlook for theranostics in the era of precision medicine.

ABSTRACT

Advances in the understanding of cancer biology, developments in diagnostic technologies, and expansion of therapeutic options have all contributed to the concept of personalized cancer care. Theranostics is the systematic integration of targeted diagnostics and therapeutics. The theranostic platform includes an imaging component that 'sees' the lesions followed by administration of the companion therapy agent that 'treats' the same lesions. This strategy leads to enhanced therapy efficacy, manageable adverse events, improved patient outcome, and lower overall costs. In this lecture, I review the the concept, history, recent developments, current challenges, and outlook for radiotheranostics (use of radionuclides in theranostics) in the management of patients with cancer (Jadvar H et al. Radiotheranostics in Cancer Diagnosis and Management. Radiology 2018; 286:388-400).