



Saturday

Program subject to change until 12/16/2019.



105TH Scientific Assembly and Annual Meeting
December 1-6 | McCormick Place, Chicago





SPPH01

AAPM/RSNA Physics Tutorial Session 1

Saturday, Nov. 30 12:00PM - 2:00PM Room: E351

IN **PH**

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

Participants

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

Sub-Events

SPPH01A Nuts and Bolts of Informatics

Participants

J. Anthony Seibert, PhD, Sacramento, CA (*Presenter*) Advisory Board, Bayer AG
Thomas W. Loehfelm, MD, PhD, Atlanta, GA (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

jaseibert@ucdavis.edu

LEARNING OBJECTIVES

1) Describe essential informatics competencies expected in a radiology environment. 2) Understand the various standards, profiles and lexicons used in imaging informatics. 3) Highlight the role of HL7, DICOM standards and IHE profiles in workflow for acquisition and diagnosis.

SPPH01B Standards and System Integration

Participants

Nabile M. Safdar, MD, Milton, GA (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

nmsafda@emory.edu

LEARNING OBJECTIVES

1) To understand why standards are important in healthcare technology. 2) To review most commonly used standards currently in use. 3) To explore the most common methods for integrating clinical systems.

ABSTRACT

The use of standards like HL-7 and DICOM in healthcare information technology have become critical for understanding of the flow of data in patient care settings. In this session, key concepts regarding the use of these standards in today's practice will be reviewed.

SPPH01C Digital Radiography 2D Image Analysis

Participants

Adel A. Mustafa, PhD, New Haven, CT (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

adel.mustafa@yale.edu

LEARNING OBJECTIVES

1) Explain the importance of digital image processing. 2) Define the digital image quality metrics. 3) Identify the essential components of the image processing chain. 4) Differentiate between image processing and display processing. 5) Describe the different image processing methods and its effect on image quality. 6) Recommend troubleshooting image processing hints.

ABSTRACT

A major advantage of digital radiography is the availability of using image processing tools to help enhance the diagnostic quality of acquired images. Digital image processing requires subjecting the image raw data to a series of processes in order to render an image that resembles the 'look' of a screen-film radiograph. However, unlike screen-film radiographs, digitally obtained images can be manipulated using pre and postprocessing methods to enhance its diagnostic interpretation. Such methods include signal filtering and transformation, region of interest segmentation, image field mask enhancement, histogram equalization, anatomy extraction, scatter correction, noise reduction, grid removal and tone-scale generation and optimization. The purpose of this presentation is to discuss those methods and demonstrate its effect on image diagnostic quality. We will also suggest troubleshooting and processing hints applicable to digital images obtained using different digital radiography equipment from different manufacturers.



SPGW01

NIH Grantsmanship Workshop

Saturday, Nov. 30 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

SPGW01B Preparing an R01 Research Application

Participants

Maryellen L. Giger, PhD, Chicago, IL (*Presenter*) Advisor, Qlarity Imaging; 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

SPGW01C Preparing K Awards

Participants

Ruth C. Carlos, MD, MS, Ann Arbor, MI (*Presenter*) Editor, Journal of the American College of Radiology; Support, Harvey L. Neiman Health Policy Institute; In-kind support, Reed Elsevier;

SPGW01D Clinical Trials in Applications

Participants

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

SPGW01E Program Perspectives

Participants

Shumin Wang, PhD, Bethesda, MD (*Presenter*) Nothing to Disclose

LEARNING OBJECTIVES

1) To learn about NIBIB funding opportunities and grantmanship.

ABSTRACT

SPGW01F The Process of Review

Participants

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

SPGW01G Mock Study Section

Participants

Gayle E. Woloschak, PhD, Chicago, IL (*Presenter*) Nothing to Disclose
Ruth C. Carlos, MD, MS, Ann Arbor, MI (*Presenter*) Editor, Journal of the American College of Radiology; Support, Harvey L. Neiman Health Policy Institute; In-kind support, Reed Elsevier;
Maryellen L. Giger, PhD, Chicago, IL (*Presenter*) Advisor, Qlarity Imaging; 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
Elizabeth A. Krupinski, PhD, Atlanta, GA (*Presenter*) Nothing to Disclose
Michael W. Vannier, MD, Crete, IL (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

ekrupin@emory.edu

LEARNING OBJECTIVES

1) Understand how an NIH review session takes place.

ABSTRACT

NIH mock study section review process will be presented.

SPGW01H Questions to the Faculty

Participants

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

SPGW01I Summary

Participants

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

SPGW01J Adjourn

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SPPH02

AAPM/RSNA Physics Tutorial Session 2

Saturday, Nov. 30 2:15PM - 4:15PM Room: E351

AI **PH**

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

Participants

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

Sub-Events

SPPH02A Nuts and Bolts of Machine Learning and Artificial Intelligence

Participants

Katherine P. Andriole, PhD, Dedham, MA (*Presenter*) Research funded, NVIDIA Corporation; Research funded, General Electric Company; Research funded, Nuance Communications, Inc

For information about this presentation, contact:

kandriole@bwh.harvard.edu

SPPH02B AI in Healthcare: Advanced Topics

Participants

Luciano M. Prevedello, MD, MPH, Columbus, OH (*Presenter*) Nothing to Disclose
Paras Lakhani, MD, Media, PA (*Presenter*) Nothing to Disclose

For information about this presentation, contact:

paras.lakhani@jefferson.edu

LEARNING OBJECTIVES

1) Learn about various types of artificial intelligence, including generative adversarial networks (GANs). 2) Learn about their potential applicability towards healthcare, including in image processing/reconstruction, and improving image quality. 3) Discuss strengths and pitfalls of the above solutions. 4) Present use cases.

ABSTRACT

The goal of this session is to discuss advanced topics in Artificial Intelligence (AI) and its applicability to healthcare. The topics may include synthesis of images and image-to-image translation, denoising and improving image quality, and new paradigm of image reconstruction using AI, as well as AI approaches for analyzing text/EHR data. The presentation(s) will cover healthcare use cases, and discuss the strengths/pitfalls of some of the networks used for this type of work, including generative adversarial networks (GANs), and AI-based language models.

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