

Making Cancer History®

# Department of Imaging Physics Computed Tomography Hands-On Workshop for Physicists

January 23-25, 2015 Houston, TX Class limited to 36 attendees.

**Tuition:** \$1500

16 Hours (3 days): 9.0 hours of Classroom Lectures; 7.0 hours of Laboratories

Registration will begin at 1:00 PM on Friday, and classes will finish at 12:15 PM on Sunday.

Course Directors: John Rong, PhD and S. Cheenu Kappadath, PhD

Other Instructors: Dianna Cody, PhD, Dustin Gress, MS, Sastry Vedam, PhD, and Lifeng Yu, PhD

**Course Description**: This course will provide the practicing medical physicist with an overview of CT physics, QC/QA, and ACR CT accreditation process. With increasing concerns regarding radiation dose, CT dose reduction strategies will be discussed. The lectures and labs are designed to convey information on physics, testing, and accreditation in routine clinical practice. Participants will also have opportunity to learn about dual-energy imaging, iterative reconstruction techniques, and gain experience on CT simulator for Radiation treatment planning. The labs will be conducted on 6 different modern CT scanners including a GE dual-energy 64-channel unit, a Siemens dual-energy 128-channel unit and a Philips 64-channel unit.

**Course Objectives:** Upon completion of the workshop activities, a participant will have gained necessary knowledge to: measure radiation dose for CT scanners, perform physics tests for ACR CT accreditation, utilize scanner features for CT dose reduction, identify typical CT image artifacts, become familiar to the physics testing for CT QC/QA, and understand the process of CT for radiation treatment Planning.

### **LECTURE TOPICS:**

Overview of CT
CT Dose
ACR CT Accreditation Program
CT for Radiation Treatment Planning
Emerging CT Technologies
CT QC & QA
CT Image Artifacts

LAB 1: ACR CT Accreditation – Phantom Images

ACR phantom scans Image analysis Preparation of images and data forms

#### LAB 2: ACR CT Accreditation - Dose

ACR CT dose measurements Limitations of CTDI method Other techniques for CT dose measurements

#### LAB 3: Factors Affecting CT Image Quality Scan parameters Post-processing parameters

Detector/data channel configurations

#### LAB 4: CT Dose Reduction Techniques

Factors affecting dose modulation Effect of kVp, detector configuration, and reconstructions Special techniques and dose-saving features

#### LAB 5: Applications of Dual Energy CT

Preset GSI protocol options Non-GSI HD mode for Hi-Resolution Imaging Other Features of Spectral Imaging

#### LAB 6: CT for Radiation Treatment Planning

CT number to electron density conversion/calibration 3D CT virtual simulation for radiotherapy planning

THIS PROGRAM WOULD BE APPROPRIATE FOR MEDICAL PHYSICISTS WHO SUPPORT MULTI\_SLICE CT IN A CLINICAL ENVIRONMENT. TECHNICALLY-ORIENTED TECHNOLOGISTS AND RADIOLOGISTS MAY ALSO FIND THIS INFORMATION AND EXPERIENCE BENEFICIAL TO THEIR CLINICAL PRACTICES OR CAREER DEVELOPMENT.

# **COURSE DIRECTORS**

John Rong, PhD, is an Associate Professor of Imaging Physics in the Department of Imaging Physics at The University of Texas MD Anderson Cancer Center. He has extensive clinical experience in CT physics.

**S. Cheenu Kappadath, PhD**, is an Associate Professor in the Department of Imaging Physics at The University of Texas MD Anderson Cancer Center. He has extensive clinical experience in CT physics.

# **CONTINUING EDUCATION CREDITS**

Application has been submitted to the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP) requesting up to sixteen (16) MPCEC credits for full participation in the course.

# **SPECIAL NEEDS**

Individuals needing auxiliary aids or services as identified in the Americans with Disabilities Act should contact us.

# **CANCELLATION POLICY**

The University of Texas MD Anderson Cancer Center reserves the right to cancel any course no less than one week prior to the course. Should circumstances make this necessary; fees will be refunded in full.

If registration must be cancelled by the applicant, notice must be received at least 21 days prior to the commencement of the course. Tuition will be refunded (less a \$100 handling fee). Later cancellation will incur retention of 50% of the tuition unless the applicant's place can be filled from a waiting list. In this case, the full tuition will be refunded (less the \$100 handling fee). Once the course commences there will be no refund.

# **\*\*\*\* APPLICATIONS AND QUESTIONS**

Applications and questions should be directed to the Short Course Coordinator at the address, telephone, fax, or e-mail below:

Attention: Elizabeth Kindred

Short Course Coordinator The University of Texas MD Anderson Cancer Center Dept. of Imaging Physics - Unit 1472 1400 Pressler Street Houston, Texas 77030

Phone: (713) 563-2548 Fax: (713) 563-2480 E-mail: eckindre@mdanderson.org

Information regarding local accommodations and transportation will be sent upon receipt of the application and course fee.

The class size is limited to the first 36 applicants.

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Application Form (return to Short Course Coordinator at the address above)

# MD Anderson CT Hands-On Workshop for Physicists

January 23-25, 2015

Name	Institution	
Position		
City, State, Zip		
E-Mail Address	Fax Number	
Educational Background (List degree, yea	ır, field, and school)	
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