9th Annual Cardiovascular Magnetic Resonance Training Course
The Summit at the Arch

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9th Annual CMR Training Course
The Summit at the Arch
Monday - Friday
March 5 - 9, 2007
Eric P. Newman Education Center
Washington University Medical Center, St. Louis

CT and MR Hands-On Training at 1.5T and 3T available

Course Chairs
Samuel A. Wickline, MD, FACC
Edward T. Martin, MD, FACC
Mary P. Watkins, RT (MR) (R)

Presented By
Cardiovascular MR Laboratories (CMRL)
Washington University School of Medicine
Oklahoma Heart Foundation

Sponsored By
Washington University School of Medicine, Continuing Medical Education and the Oklahoma Heart Foundation
COURSE OBJECTIVES

This course is designed for cardiologists, radiologists, technologists, nurses and sonographers interested in obtaining knowledge of the principles of cardiovascular MR and its implementation in a clinical environment.

The intended result of this activity is increased knowledge, and with completion of the five-day lecture course including hands-on training, the attendee should be able to:

- Acquire a generalized knowledge of Cardiovascular MR imaging techniques.
- Utilize the techniques of CMR to evaluate congenital heart disease, coronary disease, and myocardium viability.
- Demonstrate familiarity with and ability to perform a basic cardiac MR function exam.
- Demonstrate familiarity with and ability to perform basic CT angiography.
- Employ the techniques of CMR for flow assessment in the aortic and mitral valves.
- Assess basic imaging protocols for most common referrals.

With completion of the three-day lecture course, the attendee should be able to:

- Acquire a generalized knowledge of Cardiovascular MR and CT imaging techniques.
- Utilize the techniques of CMR to evaluate congenital heart disease, coronary disease, and myocardium viability.
- Demonstrate familiarity with the implementation of a basic cardiac MR function exam.
- Assess basic imaging protocols for most common referrals.

ACCREDITATION

Washington University is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

CREDIT

AMA: Washington University designates this educational activity for a maximum of 29.5 (18.25 lectures only) AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

ASRT: The American Society of Radiologic Technologist designates this educational activity for a maximum of 30 hours (hands-on and lectures) and 19 hours (lectures only) in Category A CE credits (approval pending)

Disclosure Policy

It is the policy of Washington University School of Medicine, Continuing Medical Education, to ensure balance, independence, objectivity and scientific rigor in all its educational activities. All faculty participating in this activity are expected to disclose to the audience any financial interest or other relationship he/she has with the manufacturer(s) of any commercial product(s) discussed in an educational presentation.
GUEST FACULTY
Andrew Arai, MD, Investigator, Laboratory of Cardiac Energetics National Heart, Lung and Blood Insititute, National Institutes of Health, Bethesda, Maryland
David Bluemke, MD, PhD, MsB, Associate Professor of Radiology Clinical Director of MRI, Department of Radiology Johns Hopkins University Medical School, Baltimore, Maryland
Scott D. Flamm, MD, Director, MRI and Cardiovascular MRI Research St. Luke’s Episcopal Hospital home of the Texas Heart Institute Houston, Texas
Mark A. Fogel, MD, Associate Professor of Cardiology and of Radiology The University of Pennsylvania School of Medicine Director of Cardiac MRI, The Children’s Hospital of Philadelphia Philadelphia, Pennsylvania
George Gentchos, MD Departments of Medicine and Radiology University of Vermont, Burlington, Vermont
Edward T. Martin, MD, FACC, Clinical Associate Professor of Medicine University of Oklahoma College of Medicine Director of the MRI Center at Oklahoma Heart Institute, Tulsa, Oklahoma
Matthias Stuber, PhD, Associate Professor of Radiology Johns Hopkins University Medical School, Baltimore, Maryland

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE ACTIVITY FACULTY
Shelton Caruthers, PhD, MR Clinical Scientist, Philips Medical Systems Associate Director of Cardiovascular Magnetic Resonance Laboratories
Lynn Coulter, RN, Project Manager Cardiovascular Magnetic Resonance Laboratories
Tamara Donahue, RN, BSN, Clinical Research Coordinator Cardiovascular Magnetic Resonance Laboratories
Sandor Kovacs, PhD, MD, Associate Professor of Medicine Adjunct Associate Professor of Physics
Gregory Lanza, PhD, MD, Assistant Professor of Medicine Assistant Professor Bio-Medical Engineering
Bruce Lindsay, MD, Associate Professor of Medicine Director of Clinical Electrophysiology
Kamilla McGhee, BS, Research Assistant Cardiovascular Magnetic Resonance Laboratories
Mary P. Watkins, RT (MR) (R), Cardiovascular MR Technologist Cardiovascular Magnetic Resonance Laboratories
Samuel A. Wickline, MD, FACC, Professor of Medicine Co-Director of the Cardiovascular Division
Todd Williams, RT (MR) (R), Cardiovascular MR Technologist Cardiovascular Magnetic Resonance Laboratories
Patrick Winter, PhD, Research Instructor in Medicine Cardiovascular Magnetic Resonance Laboratories
MONDAY, MARCH 5
Eric P. Newman Education Center (EPNEC), 320 S. Euclid Ave.
LECTURE SERIES I
12:15pm  Registration & Refreshments
12:45pm  Welcome & Introductions
1:00pm  Basic Physics of CMR I - Patrick Winter, PhD
1:45pm  Cardiovascular Anatomy and Pathology - Samuel A. Wickline, MD, FACC
2:15pm  CMR Patient Safety & MRI ECG Applications - Todd Williams, RT (MR) (R)
2:45pm  Refreshment Break
3:00pm  CMR Basic Function Protocol & Image Analysis
        Mary P. Watkins, RT (MR) (R)
3:30pm  Valves & Flow - Samuel A. Wickline, MD, FACC
4:15pm  MRA of the Peripheral Vasculature, Aorta and Pulmonary
        Edward T. Martin, MD, FACC
5:00pm  Welcome Reception & Marketplace Exhibition
7:00pm  Adjourn

TUESDAY, MARCH 6
Eric P. Newman Education Center (EPNEC), 320 S. Euclid Ave.
LECTURE SERIES II
7:30am  Continental Breakfast
8:00am  Basic Physics of CMR II - Shelton Caruthers, PhD
8:45am  Diastolic Function - Sandor Kovacs, PhD, MD
9:30am  Basics of CT Coronary Angiography - George Gentchos, MD
10:00am Refreshment Break
10:15am Setting Up a Clinical CMR Practice - Edward T. Martin, MD, FACC
10:45am Interventional MRI - Bruce Lindsay, MD
11:30am CMR Technology - Software & Hardware
12:00pm Luncheon & Marketplace
2:00pm  Pediatric/Congenital CMR - Mark Fogel, MD
2:45pm  Cardiomyopathies and RVD - David Bluemke, MD, PhD
3:15pm  Refreshment Break
3:30pm  MR Coronary Imaging - Matthias Stuber, PhD
4:15pm  Case Studies
5:00pm  Adjourn

WEDNESDAY, MARCH 7
Eric P. Newman Education Center (EPNEC) 320 S. Euclid Ave.
LECTURE SERIES III
7:30am  Continental Breakfast
8:00am  Myocardial Perfusion and Viability - Scott D. Flamm, MD
8:45am  3T CMR Applications: Pitfalls & Solutions - Matthias Stuber, PhD
9:30am  Application of CMR in Acute Chest Pain - Andrew Arai, MD
10:15am Refreshment Break
10:30am Multi-slice CT: Non-Coronary Applications - David Bluemke, MD, PhD
11:15am Personalized Medicine and MRI - Gregory Lanza, PhD, MD
11:45am Closing Comments
12:00pm  Luncheon (to be provided)
WEDNESDAY, MARCH 7 (Continued)
CORTEX Building, 4320 Forest Park
HANDS-ON LABS SECTION I
1:00pm Group I: Demonstration of ECG/VCG Setup and CMR Function Video
   Group II: Basic CMR Functional Study
   Group III: Basic Cardiac CT Scanning
3:00 Refreshment Break
3:15 Group II: Demonstration of ECG/VCG Setup and CMR Function Video
   Group III: Basic CMR Functional Study
   Group I: Basic Cardiac CT Scanning
5:15 Adjourn

THURSDAY, MARCH 8
CORTEX Building, 4320 Forest Park
HANDS-ON LABS SECTION II
7:30am Continental Breakfast
8:00 Group III: Demonstration of ECG/VCG Setup and CMR Function Video
   Group I: Basic CMR Functional Study
   Group II: Basic Cardiac CT Scanning
10:00 Refreshment Break
10:15 Group I: CMR Scanning Exercises 1.5T
   Group II: CMR Scanning Exercises 3T
   Group III: CCT Scanning Exercises
12:15pm Luncheon (to be provided)
1:30 Group II: CMR Scanning Exercises 1.5T
   Group III: CMR Scanning Exercises 3T
   Group I: CCT Scanning Exercises
3:30 Refreshment Break
3:45 Group III: CMR Scanning Exercises 1.5T
   Group I: CMR Scanning Exercises 3T
   Group II: CCT Scanning Exercises
5:45 Adjourn

FRIDAY, MARCH 9
CORTEX Building, 4320 Forest Park
HANDS-ON LABS SECTION III
8:00am Continental Breakfast
8:30 Group I: CMR Scanning Exercises 1.5T
   Group II: CMR Scanning Exercises 3T
   Group III: Image Analysis/Reading Case Studies
9:45 Break
9:50 Group II: CMR Scanning Exercises 1.5T
   Group III: CMR Scanning Exercises 3T
   Group I: Image Analysis/Reading Case Studies
11:05 Break
11:10 Group III: CMR Scanning Exercises 1.5T
   Group I: CMR Scanning Exercises 3T
   Group II: Image Analysis/Reading Case Studies
12:15pm Closing Remarks
GENERAL INFORMATION

Location: Eric P. Newman Education Center (EPNEC) 320 S. Euclid Ave., St. Louis, Missouri 63110. Since meeting room temperatures are difficult to regulate to everyone's appeal, bringing a jacket or sweater is recommended.

Parking: Courtesy parking is available for paid registrants at The North Garage or the Metro Garage (map will be sent with acknowledgment). Bring your parking ticket to the registration desk for validation. Validation for other medical center parking garages is not available.

Accommodations: Make your reservations directly with a hotel and indicate that you are attending a Washington University seminar for special rates.

- The Parkway Hotel [on the medical center campus]
  (314) 256-7777 toll free (866) 314-7700 www.theparkwayhotel.com
  4550 Forest Park Blvd., St. Louis, MO 63110
  Rates: $109 Standard/$124 Executive Level/$149 Concierge Level (+tax)

- Chase Park Plaza [5 blocks from the medical center campus]
  (314) 633-3000 or toll free (877) 587-2427
  212-232 N. Kingshighway Blvd., St. Louis, MO 63108
  Rate: $155 One Bedroom Suite (+tax)

- Drury Inn at Union Station www.drury.com [Accessible via MetroLink]
  (314) 231-3900, 201 S. 20th St., St. Louis, MO 63103
  Rate: $96 standard room (+tax)

Please Note: Washington University is not responsible for airline or hotel reservations. Please confirm seminar registration acceptance prior to purchase of non-refundable or penalty airline tickets.

Transportation/MetroLink: The Central West End MetroLink Station is conveniently located at the medical center on Euclid Avenue, ½ block south of EPNEC. The MetroLink trip from the airport to the medical center takes approximately 20 minutes and costs $2.00 - $3.00 each way. Taxis are available at the airport and will cost approximately $35 to the medical center.

Registration/Payment Policy: Your full payment in advance completes your registration and ensures your enrollment in this course. If you have not received an acknowledgment within two weeks of your registration submission, please call the CME office. Opportunities for on-site registration are limited and may be unavailable. To inquire about the availability to register on-site, please contact the CME office.

Cancellations: Registration fee less $100 full course/$50 lectures only administrative charge is refundable if cancellation is received in writing by February 26, 2007.

Special Needs: Continuing Medical Education at Washington University School of Medicine fully complies with the legal requirements of the Americans with Disabilities Act rules and regulations thereof. If any participant of this meeting is in need of accommodations, please do not hesitate to submit written requests at least one month prior to seminar date. Assisted listening devices available on loan.

For Further Seminar Information:
Washington University School of Medicine, Continuing Medical Education
Websites: cme.wustl.edu OR cmrl.wustl.edu/education/
Email: cme@wustl.edu 314-362-6891 800-325-9862 Fax 314-362-1087
Day of Seminar Only Telephone Number: (314) 747-6338

Minimum and Maximum Enrollments Have Been Established.
**ADVANCE REGISTRATION**

9th Annual CMR Training Course  
March 5 - 9, 2007

To ensure proper spelling of your name, please print clearly. The information provided will appear as written on the attendance roster. If you wish not to be listed on the attendance roster, check here: ☐

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<thead>
<tr>
<th>First Name</th>
<th>Initial</th>
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Office Telephone Number

Fax

Specialty

If you wish to receive CME announcements online, indicate your email address.

Physicians Only: Medical School Graduate of

☐ Washington Univ  ☐ Other (Indicate) __________________ Year ______

**REGISTRATION FEES:**

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<tr>
<td>Full Course: Lectures &amp; Hands-On</td>
<td>$1,750</td>
<td>$1,925</td>
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<tr>
<td>Physician Lectures Only</td>
<td>$ 475</td>
<td>$ 525</td>
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<tr>
<td>Allied Health Lectures Only</td>
<td>$ 250</td>
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Your full payment in advance completes your registration and ensures your enrollment in this course. Fees include enrollment, continuing education credits, educational materials, continental breakfasts, refreshment breaks, luncheons and Medical Center parking.

**THREE CONVENIENT WAYS TO REGISTER!**

☐ **MAIL** this completed form with your check payable to Washington University. CME/WUSM, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110

☐ **FAX** this completed form with credit card information to: Fax (314) 362-1087  
  ☐ MasterCard  ☐ Visa  ☐ Discover

  Name on Card ____________________________

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  Exp. Date ________ Signature________________________

☐ **PHONE** your registration to: (800) 325-9862 or (314) 362-6891  
(Please have your credit card information ready.)