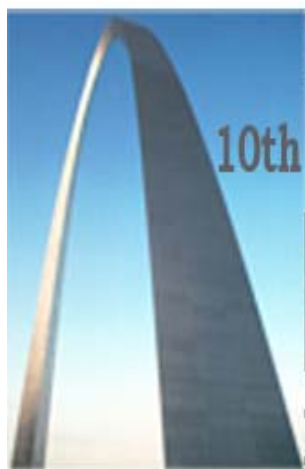




Washington University in St. Louis

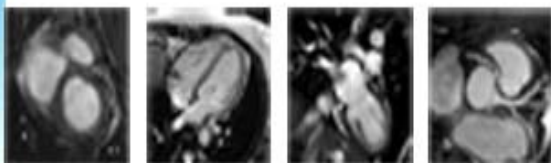
SCHOOL OF MEDICINE

and  
**Oklahoma Heart Foundation**



# Summit at the Arch

10th Annual CMR Training Course



**March 4-7, 2008**

**Tuesday - Friday**

**Eric P. Newman Education Center**

**Washington University Medical Center, St. Louis**

**Longest-continuously operating CARDIAC MR Symposium**

**1.5T and 3T CMR  
Hands-On Training  
Plus CT Imaging**

**Course Chairs**

Samuel A. Wickline, MD, FACC

Edward T. Martin, MD, FACC

Mary P. Watkins, RT (MR)

**Jointly Sponsored By**

**Washington University School of Medicine Continuing Medical Education  
and the Oklahoma Heart Foundation**

**Tel. 314-362-6891 Fax 314-362-1087 To register visit our websites at  
<http://cme.wustl.edu> or <http://ctrain.wustl.edu>**

## 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 two-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 and ability to perform a basic cardiac MR function exam.
- Assess basic imaging protocols for most common referrals.

Additionally, with completion of the four-day lecture course including hands-on training, the attendee should be able to:

- Demonstrate familiarity with and ability to perform basic CT angiography.
- Employ the techniques of CMR for flow assessment in the aortic and mitral valves.

## ACCREDITATION

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Washington University School of Medicine, Continuing Medical Education and the Oklahoma Heart Foundation, Inc. Washington University is accredited by the ACCME to provide continuing medical education for physicians.

## CREDIT

**AMA:** Washington University designates this educational activity for a maximum of **29** (14 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 approval is pending. The 2007 Course was ASRT approved for a maximum of 25.5 CE credits.

## 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 Institute, 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

**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

**Reza Razavi, MD** Professor of Paediatric Cardiovascular Science  
Head of Division of Imaging Sciences  
King's College London, University of London, England

**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  
Adjunct Instructor of Biomedical Engineering

**Lynn Coulter, RN**, Project Manager  
Cardiovascular Magnetic Resonance Laboratories

**Tamara Donahue, RN, BSN**, Cardiovascular Research Nurse Coordinator  
Cardiovascular Magnetic Resonance Laboratories

**Sandor Kovacs, PhD, MD**, Professor of Medicine  
Adjunct Professor of Physics

**Gregory Lanza, PhD, MD**, Associate Professor of Medicine and Bio-Medical  
Engineering

**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, Physics, Biomedical Engineering, and Cell Biology and Physiology  
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

## TUESDAY, MARCH 4 - LECTURE SERIES I

**Eric P. Newman Education Center (EPNEC), 320 S. Euclid Ave.**

- 7:30am *Registration & Continental Breakfast*
- 8:00 **Welcome & Introduction**
- 8:15 **Basic Physics of CMR I** - Shelton Caruthers, PhD
- 9:00 **CMR Patient Safety - Recent Update** - Todd Williams, RT (MR) (R)
- 9:30 **CMR Basic Anatomy & Function Protocol**  
Mary P. Watkins, RT (MR) (R)
- 10:00 *Refreshment Break*
- 10:15 **Valves & Flow** - Samuel A. Wickline, MD, FACC
- 11:00 **MRA of the Peripheral Vasculature, Aorta & Pulmonary**  
Edward T. Martin, MD, FACC
- 11:45 *Luncheon (to be provided)*
- 1:00pm **MR Coronary Imaging** - Matthias Stuber, PhD
- 1:45 **Cardiomyopathies and RVD** - David Bluemke, MD, PhD, MsB
- 2:15 **Diastolic Function** - Sandor Kovacs, PhD, MD
- 3:00 *Refreshment Break*
- 3:15 **Personalized Medicine and MRI** - Gregory Lanza, PhD, MD
- 4:00 **Case Studies** - Faculty
- 5:00 *Welcome Reception & Marketplace Exhibition*
- 7:00 *Adjourn*

## WEDNESDAY, MARCH 5 - LECTURE SERIES II

**Eric P. Newman Education Center (EPNEC), 320 S. Euclid Ave.**

- 7:30am *Continental Breakfast*
- 8:00 **Basic Physics of CMR II** - Patrick Winter, PhD
- 8:45 **Setting Up a Clinical CMR Practice** - Edward T. Martin, MD, FACC
- 9:15 **Pediatric/Congenital CMR** - Mark A. Fogel, MD
- 10:00 *Refreshment Break*
- 10:15 **3T CMR Applications: Pitfalls & Solutions** - Matthias Stuber, PhD
- 11:00 **Myocardial Perfusion and Viability** - Scott D. Flamm, MD
- 11:45 **CMR Technology - Software & Hardware**
- 12:15pm *Luncheon & Marketplace*
- 2:00 **Interventional MRI** - Reza Rezavi, M.D.
- 2:45 **Application of CMR in Acute Chest Pain** - Andrew Arai, MD
- 3:30 *Refreshment Break*
- 3:45 **MR or CT, Which One Should I Select? Compare and Contrast**  
David Bluemke, MD, PhD, MsB
- 4:45 **Case Studies**
- 5:30 *Adjourn*

## THURSDAY, MARCH 6 - HANDS-ON LABS SESSION I

### CORTEX Building, 4320 Forest Park

- 7:30am *Continental Breakfast*
- 8:00 Group I: Presentation & Demonstration of ECG/VCG Setup + Basic Functional  
Group II: Basic CMR Functional Study  
Group III: Basic Cardiac CT Scanning
- 10:00 *Refreshment Break*
- 10:15 Group II: Presentation & Demonstration of ECG/VCG Setup + Basic Functional  
Group III: Basic CMR Functional Study  
Group I: Basic Cardiac CT Scanning
- 12:15pm *Luncheon (to be provided)*
- 1:30 Group III: Presentation & Demonstration of ECG/VCG Setup + Basic Functional  
Group I: Basic CMR Functional Study  
Group II: Basic Cardiac CT Scanning
- 3:30 *Refreshment Break*
- 3:45 Group I: CMR Scanning Exercises 1.5T  
Group II: CMR Scanning Exercises 3T  
Group III: CCT Scanning Exercises
- 5:45 *Adjourn*

## FRIDAY, MARCH 7 - HANDS-ON LABS SESSION II

### CORTEX Building, 4320 Forest Park

- 7:30am *Continental Breakfast*
- 8:00 Group II: CMR Scanning Exercises 1.5T  
Group III: CMR Scanning Exercises 3T  
Group I: CCT Scanning Exercises
- 9:30 *Refreshment Break*
- 9:45 Group III: CMR Scanning Exercises 1.5T  
Group I: CMR Scanning Exercises 3T  
Group II: CCT Scanning Exercises
- 11:15 *Luncheon (to be provided)*
- 12:30pm Group I: CMR Scanning Exercises 1.5T  
Group II: CMR Scanning Exercises 3T  
Group III: Image Analysis/reading Case Studies
- 1:30 *Refreshment Break*
- 1:45 Group II: CMR Scanning Exercises 1.5T  
Group III: CMR Scanning Exercises 3T  
Group I: Image Analysis/Reading Case Studies
- 2:45 *Refreshment Break*
- 3:00 Group III: CMR Scanning Exercises 1.5T  
Group I: CMR Scanning Exercises 3T  
Group II: Image Analysis/Reading Case Studies
- 5:00 *Adjourn*

# 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 (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](http://www.theparkwayhotel.com)  
4550 Forest Park Blvd., St. Louis, MO 63110  
Rates: \$119 Standard \$129 Executive Level
- **Chase Park Plaza** [5 blocks from the medical center campus]  
(314) 633-3000 toll free (877) 587-2427 [www.chaseparkplaza.com](http://www.chaseparkplaza.com)  
212-232 N. Kingshighway Blvd., St. Louis, MO 63108  
Rate: \$162 One Bedroom Suite (+tax)
- **Drury Inn at Union Station** [Accessible via MetroLink]  
(314) 231-3900 [www.druryhotels.com/properties/unionstation.cfm](http://www.druryhotels.com/properties/unionstation.cfm)  
201 S. 20th St., St. Louis, MO 63103  
Rate: \$106 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 19, 2008.

**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/cardiology](http://cme.wustl.edu/cardiology) OR [ctrain.wustl.edu](http://ctrain.wustl.edu)

Email: [cme@wustl.edu](mailto: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

## 10<sup>th</sup> Annual CMR Training Course

### March 4 - 7, 2008

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:

\_\_\_\_\_  
First Name                      Initial                      Last Name                      Degree

\_\_\_\_\_  
Address

\_\_\_\_\_  
City/ State/ Zip

\_\_\_\_\_  
Office Telephone Number                      Fax

\_\_\_\_\_  
Specialty

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

\_\_\_\_\_  
Medical School Graduate of:  Washington University  Other    Year \_\_\_\_\_

### REGISTRATION FEES:

	By Feb 19	After Feb 19
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<input type="checkbox"/> Full Course: Lectures & Hands-On	\$1,950	\$2,150
<input type="checkbox"/> Physician Lectures Only	\$ 525	\$ 575
<input type="checkbox"/> Allied Health Lectures Only	\$ 350	\$ 375
<input type="checkbox"/> Fellows Lectures Only	\$ 350	\$ 375

20% Discount for groups of 3 or more (lecture portion only) until 2/14.

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, Medical Center parking and admission to the Reception/Market Place Exhibition.

### CONVENIENT WAYS TO REGISTER!

**Online \*\*NEW\*\*** Secure online registration available at <http://cme.wustl.edu>.  
Click on the course name.

**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 \_\_\_\_\_

Card # \_\_\_\_\_

Exp. Date \_\_\_\_\_ Signature \_\_\_\_\_

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