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Associate Professor of Medicine Director, Interventional Cardiology Washington University School of Medicine Medical Director, Cardiac Cath Lab Barnes-Jewish Hospital St. Louis, Missouri







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#### **HEART RHYTHM DIRECTORS**

#### Phillip Cuculich, MD

Associate Professor of Medicine Washington University School of Medicine St. Louis, Missouri

#### Ralph J. Damiano, Jr., MD, FACC

Chief, Division of Cardiothoracic Surgery Co-Chair, Heart & Vascular Center Washington University School of Medicine St. Louis, Missouri

#### Mitchell N. Faddis, MD, PhD

Professor of Medicine Section Head, Cardiac Electrophysiology Washington University School of Medicine St. Louis, Missouri

#### Andrea Natale, MD, FACC, FHRS, FESC

Executive Medical Director Texas Cardiac Arrhythmia Institute at St. David's Medical Center Austin, Texas Amit P. Amin, MD, MSc Assistant Professor of Medicine

**Richard G. Bach, MD, FACC, FAHA, FSCAI** *Professor of Medicine* 

Medical Director, Cardiac Intensive Care Unit

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Professor of Pediatrics Interim Director, Division of Pediatric Cardiology

Alan Braverman, MD, FACC

Alumni Endowed Professor in Cardiovascular Diseases

David L. Brown, MD, FACC

Professor of Medicine

Daniel H. Cooper, MD

Assistant Professor of Medicine Director, Electrophysiology Fellowship

Aarti Dalal, DO

**Assistant Professor** 

Marci S. Damiano, RN, MSN

Clinical Nurse Coordinator Center for Valvular Heart Disease

Michael Daniel, MD

Interventional Cardiology Fellow

Marye J. Gleva, MD, FACC, FHRS

Professor of Medicine, Internal Medicine Electrophysiology Unit

Akinobu Itoh, MD, PhD

Surgical Director, Heart Transplant and Ventricular Assist Device Program

Puja Kachroo, MD

Assistant Professor of Surgery

Majesh Makan, MD, FACC, FASE

Professor of Medicine

Associate Director of Adult Echocardiography

Kartik Mani, MBBS, FSCAI

Assistant Professor, Internal Medicine - Cardiology

Hersh S. Maniar, MD

Associate Professor, Surgery and Medicine

**Spencer J. Melby, MD**Assistant Professor of Cardiothoracic Surgery

Samantha Miller, RN, BSN Cath Lab Manager

Amit Noheria, MBBS, SM

Assistant Professor of Medicine

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Cardiac ICU and Cardiac Cath Lab Clinical Pharmacy Specialist

J. Trevor Posenau, MD

Interventional Cardiology Fellow

Brandon Rahn, MHA

Manager, Quality & Clinical Outcomes

Clifford G. Robinson, MD

Associate Professor of Radiation Oncology Chief of Service, Stereotactic Body Radiation Therapy (SBRT) Director, Clinical Trials & Clinical Informatics

Marcos Rothstein, MD

Professor of Medicine, Nephrology

Pamela Samson, MD

Radiation Oncologist

Luis A. Sanchez, MD, FACS

Chief of Vascular Surgery Gregorio A. Sicard Distinguished Professor of Surgery and Radiology

Kathleen Schlafly, RN, BSN, CCRN

Registered Nurse

Richard B. Schuessler, PhD

Department of Surgery

Adam Shpigel, MD

Interventional Cardiology Fellow

Jennifer Silva, MD

Pediatric Cardiologist

Marc A. Sintek, MD

Assistant Professor of Medicine

Timothy W. Smith, DPhil, MD

Associate Professor of Medicine

# Invited Faculty

S. Hinan Ahmed, MD, FACC, FSCAI UT Health Science Center

San Antonio, Texas

Rasha Al-Lamee, MBBS, MRCP Imperial College Healthcare NHS Trust London, England

Alok Bachuwar, MD, FACC, FSCAI SSM Health Dean Medical Group Madison, Wisconsin

Sudeshna Banerjee, MD, FACC Sacred Heart Medical Center Oregon Heart & Vascular Institute Springfield, Oregon

Michael A. Brown, MD Missouri Heart Center Columbia, Missouri

Paramjit S. Chopra, MD Midwest Institute for Minimally Invasive Therapies Rush University Melrose Park, Illinois

Matthew J. Chung, MD Duke University Medical Center Durham, North Carolina

**Bryan D. Cogar, MD** INTEGRIS Cardiovascular Physicians Cardiology Clinic Oklahoma City, Oklahoma

**Edward Coverstone, MD**St. Anthony's Heart Specialty Associates
St. Louis, Missouri

David A. Cox, MD, FACC, MSCAI Brookwood Baptist Medical Center Birmingham, Alabama

**Tony J. DeMartini, MD** *Prairie Cardiovascular Consultants Downers Grove, Illinois* 

**Vivian Dimas, MD** University of Texas Southwestern Medical Center Dallas, Texas

**Eric J. Dippel, MD, FACC** Vascular Institute of the Midwest Davenport, Iowa

Stilianos Efstratiadis, MD, FACC, FSCAI Quincy Medical Group, Blessing Hospital Quincy, Illinois

Amr G. El-Shafei, MD Mercy Heart & Vascular Center Rogers, Arkansas

Tim A. Fischell, MD Borgess Heart Institute Michigan State University Kalamazoo, Michigan

Jason Fontana, PhD Medtronic San Francisco, California

**Corey G. Foster, MD** Imperial Health - Cardiovascular Specialists Lake Charles, Louisiana

**Sandeep Gautam, MD** University of Missouri Health Care Columbia, Missouri James A. Goldstein, MD, FACC, FSCAI Beaumont Health System Royal Oak, Michigan

Mark J. Goodwin, MD Edward-Elmhurst Health Cardiac Innovations & Structural Heart Center Advocate Medical Group Naperville, Illinois

James Aaron Grantham, MD Saint Luke's Hospital University of Missouri– Kansas City School of Medicine Saint Luke's Cardiovascular Consultants Kansas City, Missouri

James B. Hermiller, MD, MSCAI, FACC St. Vincent Heart Center Indianapolis, Indiana

Stuart T. Higano, MD Heart LifeLine Alliance Missouri Baptist Medical Center Wildwood, Missouri

Annapoorna S. Kini, MD, MRCP, FACC, FSCAl The Mount Sinai Hospital New York, New York

**Ethan C. Korngold, MD, FSCAI** Providence St Vincent Heart Clinic Portland, Oregon

Prakash Krishnan, MD, FACC, FSCAI The Mount Sinai Hospital New York, New York

**Paul M. Lavigne, MD** Sentara Cardiology Specialists Norfolk, Virginia

C. Huie Lin, MD, PhD, FACC, FSCAl Houston Methodist DeBakey Heart & Vascular Center Houston, Texas

Yves R. Louvard, MD Institut Cardiovasculaire Paris Sud (ICPS) Massy, France

**Brijeshwar S. Maini, MD, FACC**Charles E. Schmidt College of Medicine
Florida Atlantic University
Tenet Healthcare Corporation - Florida Region
Delray Beach, Florida

S. Jay Mathews, MD, MS, FACC Bradenton Cardiology Center Manatee Memorial Hospital Bradenton, Florida

**Prof. Ian Meredith, AM**Boston Scientific
Marlborough, Massachusetts

Adrian W. Messerli, MD, FACC UK Healthcare Lexington, Kentucky

**Jason Meyers, MD** *Iowa Heart Center Des Moines, Iowa* 

**Neville F. Mistry, MD** Sentara Cardiology Specialists Norfolk, Virginia

Jeffrey W. Moses, MD, FACC, FSCAI Columbia University College of Physicians and Surgeons NYP Hospital / Columbia University Medical Center New York, New York

Sukhjinder S. Nijjer, MD, PhD, MRCP Imperial College London Hammersmith Hospital London, England **Sean Pinney, MD, FACC** The Mount Sinai Hospital New York, New York

Srini P. Potluri, MD, FACC Baylor Scott and White Heart Hospital Plano Plano, Texas

Ramon Quesada, MD, FACC, FSCAI, FACP Miami Cardiac & Vascular Institute at Baptist Hospital Miami, Florida

**Praveen K. Rao, MD** Cardiology Consultants of Texas Dallas, Texas

**Arthur B. Reitman, MD, FACC** WellStar Health System Atlanta, Georgia

David G. Rizik, MD, FACC, MSCAI HonorHealth Heart Group Scottsdale, Arizona

Campbell D. Rogers, MD, FACC HeartFlow Portola Valley, California

**Robert D. Schaller, DO** Penn Heart and Vascular Center Philadelphia, Pennsylvania

Sayan Sen, MD National Heart & Lung Institute Hammersmith Hospital & Imperial College London London, England

Robert L. Shapiro, MD, FACC Mary Greeley Medical Center PMG Research of McFarland Clinic Ames, Iowa

Samin K. Sharma, MD, FACC, FSCAI The Mount Sinai Hospital New York, New York

**Nishtha Sodhi, MD** St. Anthony's Heart Specialty Associates St. Louis, Missouri

Anthony J. Spaedy, MD, FACC Missouri Heart Center Columbia, Missouri

Jeffrey M. Sparling, MD, FACC, FSCAI INTEGRIS Heart Hospital Oklahoma City, Oklahoma

**Anish J. Thomas, MD, FACC, FSCAI** SSM Heart and Vascular St. Louis, Missouri

Thomas M. Tu, MD, FACC, FSCAI Baptist Health Louisville Louisville, Kentucky

**Wendy Tzou, MD** University of Colorado School of Medicine Aurora, Colorado

Steven J. Yakubov, MD, FACC, FSCAI OhioHealth Research Institute Riverside Methodist Hospital Columbus, Ohio

**Michael Yeung, MD** UNC at Chapel Hill Chapel Hill, North Carolina

# Symposium Information

#### SYMPOSIUM OVERVIEW

The Advanced Revascularization-Chapter XII (ARCH) **Symposium** held in St. Louis is the nation's premier interventional cardiology course specifically designed for the busy practicing physician and trainees. ARCH 2019 will focus on evidence-based data, newer technological advances, case-based discussions, tips and tricks in complex cases, innovative therapeutic strategies that will enable physicians to treat their patients with high-risk and complex coronary, peripheral vascular and structural anatomy. Attendees will learn from experts on the use of novel techniques and interventional tools, new CTO techniques, hemodynamic support during high-risk Coronary, Peripheral and Structural Interventions and decompensated heart failure, structural heart disease interventions and novel intravascular coronary anatomy/physiology techniques. In addition, use of newer adjunctive imaging modalities to optimize Coronary, Peripheral and Structural Interventions outcomes will be presented. Participants will observe live cases and hear from International experts who will present their data and share their expertise. With a strong emphasis on participant-faculty interactions, attendees will learn the latest advances in interventional cardiology.

#### **OBJECTIVES**

The objectives of the 2019 ARCH Symposium are presentations and discussions of current knowledge and practice of cardiac and peripheral percutaneous therapy. The intended result of this activity is increased knowledge, competence, performance and skill and enhanced patient care.

#### At the end of this CME activity participants should be able to:

- Discuss interventional approaches to end stage heart failure patients.
- Evaluate the development of new technology-imaging modalities, IVUS, OCT, MRA and CT angiography.
- Interpret the pivotal coronary disease management trials of the past year and how they can be applied to bedside patient management in 2019.
- Explain techniques to improve mapping accuracy and ablation success for arrhythmias such as ventricular tachycardia and atrial fibrillation.
- Summarize new cutting-edge developments in noninvasive cardiac ablation, virtual reality in the EP lab, and painless defibrillation to improve the patient and physician EP experience.
- Discuss interventional dilemmas / controversial cases of the day: instructive, unique and interesting cases by faculty members concentrating on procedural strategy and solutions to complications.

- Explain practical techniques relating to highly stenosed lesions and the use of percutaneous left ventricular assist devices (LVAD).
- Discuss the relative role of trans-catheter and surgical therapies for advanced structural heart disease, both valvular and non-valvular and atrial fibrillation.

#### **TARGET AUDIENCE**

This course has been designed to meet the educational needs of Interventional and General Cardiologists, Electrophysiologist, Internists, Cardiothoracic Surgeons, General Surgeons, Primary Care Physicians, and Neurologists plus Nurses, Nurse Practitioners and Ancillary staff.

#### **ACCREDITATION**



#### **Physician Continuing Education**

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of *CMEsolutions* and Gaffney Events. The *CMEsolutions* is accredited by the ACCME to provide continuing medical education for physicians. The *CMEsolutions* designates this live conference for a maximum of 31 *AMA PRA Category 1 Credit(s)*<sup>TM</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

#### **Nursing Continuing Education**

This activity has been submitted to the Continuing Nursing Education Group, for approval to award nursing contact hours. The Continuing Nursing Education Group is accredited as an approver of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

#### **Continuing Education For Other Healthcare Providers**

The American Nurse Credentialing Center (ANCC), American Academy of Nurse Practitioners (AANP) and American Academy of Physician Assistants (AAPA) accepts certificates of attendance for educational activities certified for *AMA PRA Category 1 Credit(s)*™ from organizations accredited by the ACCME.

#### **DISCLOSURE OF CONFLICTS OF INTEREST**

CMEsolutions requires everyone in a position to control the content of this activity to disclose any real or apparent conflict of interest they may have as related to the content of this activity. All identified conflicts of interest are thoroughly vetted by CMEsolutions for fair balance, scientific objectivity of studies mentioned in the materials or used as the basis for content, and appropriateness of patient care recommendations.

# HEART RHYTHM SYMPOSIUM AGENDA

**TUESDAY, APRIL 9, 2019** 

7:30 am REGISTRATION / CONTINENTAL BREAKFAST

6th Floor Foyer

8:00 am WELCOME AND INTRODUCTION

Phillip S. Cuculich, MD

SESSION I | APPROACHES TO ABLATING VENTRICULAR TACHYCARDIA

Moderator: Phillip S. Cuculich, MD

Panelists: Mitchell N. Faddis, MD, PhD; Andrea Natale, MD;

Praveen K. Rao, MD; Wendy Tzou, MD

8:05 am LIVE CASE 1

Transmitted from Barnes-Jewish Hospital at

Washington University, St. Louis, MO

**Operator:** Daniel H. Cooper, MD

8:30 am VT Ablation 101:

**Being Prepared for the Battle** 

Praveen K. Rao, MD

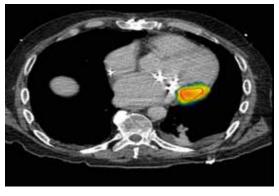
8:50 am Clinical Trials for Catheter Ablation

in Patients with VT Marye J. Gleva, MD

9:10 am Live Case 1 Status and Update on Progress

Panel





9:30 am Tools of the Trade:

**Current Mapping Techniques** Timothy W. Smith, DPhil, MD

9:50 am What is the Substrate?

Nonischemic vs. Ischemic Cardiomyopathy

Amit Noheria, MBBS, SM

10:10 am BREAK / VISIT EXHIBITS

10:30 am KEYNOTE ADDRESS

Innovation in Ventricular Tachycardia

Ablation: Better Methods /

**Techniques for Successful Ablation** 

Wendy Tzou, MD

11:00 am How to Perform Scar

**Homogenization for VT** *Andrea Natale, MD* 

11:20 am Noninvasive Ventricular Tachycardia

Mapping

Phillip S. Cuculich, MD

11:40 am Live Case 1 Status and Update on Progress

Panel

12:00 pm LUNCH / VISIT EXHIBITS

SESSION II | ADVANCES IN MANAGEMENT OF CARDIAC DEVICES

Moderator: Marye J. Gleva, MD

**Panelists:** Aarti Dalal, DO; Sandeep Gautam, MD;

Jason Meyers, MD; Amit Noheria, MBBS, SM;

Robert D. Schaller, DO

1:00 pm His-Bundle Pacing: How to Do it Well

Speaker TBD

1:20 pm Implanting Leadless Pacemakers

Timothy W. Smith, DPhil, MD

1:40 pm Embracing and Adopting New Device

**Technologies** *Jason Meyers, MD* 

2:00 pm Unique Challenges in Managing Devices in

Adults With Congenital Heart Disease
Aarti Dalal, DO; Marye J. Gleva, MD

2:20 pm Managing Leads:

**Exotic Implant and Extraction Cases** 

Robert D. Schaller, DO

2:40 pm CASE DISCUSSION

Practical Lessons and Tips on How to Identify and Treat the Five Worst Complications

Panel

3:20 pm BREAK / VISIT EXHIBITS

### **TUESDAY, APRIL 9, 2019**

SESSION III | TODAY'S IDEAS THAT WILL SHAPE THE WAY WE PRACTICE EP TOMORROW

Moderator: Jennifer Silva, MD

Panelists: Mitchell N. Faddis, MD, PhD; Andrea Natale, MD;

Richard B. Schuessler, PhD; Wendy Tzou, MD

3:40 pm The History of EP: Innovative Ideas and

Bright People: Stories of Development and Testing of RF-Based Catheter Ablation

Richard B. Schuessler, PhD

4:00 pm The Future of EP: Innovative Ideas and

**Bright People: Computer Modeling and Cardiac Imaging to Personalize Ablation Strategies** 

Phillip S. Cuculich, MD

4:20 pm LIVE CASE 2

**Noninvasive Cardiac Radioablation** 

Transmitted from Siteman Cancer Center

at Barnes-Jewish Hospital at

Washington University, St. Louis, MO

Mapper: Phillip S. Cuculich, MD

Ablators: Pamela Samson, MD; Clifford G. Robinson, MD

5:00 pm Augmented Reality in the EP Lab

Jennifer Silva, MD

5:20 pm Painless Defibrillation

Daniel H. Cooper, MD

5:40 pm Panel Discussion

6:00 pm CONCLUDING REMARKS

Phillip S. Cuculich, MD

### WEDNESDAY, APRIL 10, 2019

7:30 am REGISTRATION / CONTINENTAL BREAKFAST

6th Floor Foyer

8:00 am WELCOME AND FOLLOW UP ON PATIENTS

FROM PREVIOUS DAY Phillip S. Cuculich, MD

8:15 am KEYNOTE ADDRESS

**Innovation in AF Ablation:** 

**Better Methods / Techniques for** 

**Successful Ablation** *Andrea Natale. MD* 

SESSION IV | APPROACHES TO ABLATING ATRIAL FIBRILLATION

Moderator: Phillip S. Cuculich, MD

**Panelists:** Ralph J. Damiano, Jr., MD; Sandeep Gautam, MD; Marye J. Gleva, MD; Jason Meyers, MD; Andrea Natale, MD

8:45 am LIVE CASE 3

Transmitted from Barnes-Jewish Hospital at

Washington University, St. Louis, MO

**Operator:** Mitchell N. Faddis, MD, PhD

9:10 am Performing High-Quality Pulmonary

Vein Isolation (PVI): Burn? Freeze?

Jason Meyers, MD

9:30 am Persistent AF: PVI Plus What?

Lessons from Surgical Maze Experience

Ralph J. Damiano, Jr., MD

9:50 am Live Case 3 Status and Update on Progress

Panel

10:00 am CABANA: What Did We Learn?

How Can We Do Better?

Marye J. Gleva, MD

10:20 am Practical Education: Tricks and Tools to

Facilitate AF Ablation Sandeep Gautam, MD

10:40 am Live Case 3 Status and Panel Discussion

Panel

10:50 am BREAK / VISIT EXHIBITS

SESSION V | EP CASE DISCUSSION WITH NEW

**SOLUTIONS TO OLD PROBLEMS Moderator:** Daniel H. Cooper, MD

Panelists: Sandeep Gautam, MD; Robert Schaller, DO;

Wendy Tzou, MD

11:00 am Fellows Presentations

12:05 pm Q&A

Panel

12:15 pm COURSE CONCLUSION

Phillip S. Cuculich, MD Ralph J. Damiano, Jr., MD Mitchell N. Faddis, MD, PhD

Andrea Natale, MD



# **FELLOWS COURSE\***

WEDNESDAY, APRIL 10, 2019

#### **DIRECTOR**

George S. Chrysant, MD, FACC, FSCAI

#### **COURSE OVERVIEW**

The Fellows Course has been designed to provide conference attendees with an update in the evaluation and management of several chronic diseases treated by healthcare providers in the outpatient setting. Physicians in practice need education about these new developments, new drugs and how to use them to better treat chronic diseases and their complications, and to do so in a safe and high quality manner. Further, as the healthcare system evolves, healthcare providers need to better understand the context in which they are practicing.

#### **TARGET AUDIENCE**

The 2019 Fellows Course has been designed to meet the educational needs of Internists, Family Practitioners, Nurse Practitioners, Physician Assistants, Clinical Pharmacists, Medical Students, Residents, and Fellows.

#### **AGENDA**

1:00 pm REGISTRATION

6th Floor Foyer

1:30 pm WELCOME AND INTRODUCTION

Mississippi Room, 8th Floor George S. Chrysant, MD

1:35 pm INTRODUCTORY LECTURE

Navigating Through Your Interventional Fellowship Year: Words of Wisdom

James B. Hermiller, MD

**SESSION I | BASICS:** 

**ACCESS, EQUIPMENT & CASE SELECTION** 

Moderators: David A. Cox, MD and James B. Hermiller, MD

2:00 pm Case Selection / Guidelines

David A. Cox, MD

2:15 pm Radial Access

Amit P. Amin, MD

2:30 pm Femoral Access

Howard I. Kurz, MD

2:45 pm Interventional Tool Kit

(Guide Wires / Balloons, etc.)

George S. Chrysant, MD

3:00 pm What Stent to Use

Jasvindar Singh, MD

3:15 pm Q&A

SESSION II | APPROACHING LESION SUBSETS:

**CASE-BASED REVIEW** 

Moderators: George S. Chrysant, MD; Yves R. Louvard, MD

3:20 pm Left Main Lesions

Matthew Chung, MD

3:35 pm Bifurcation Lesions

Yves R. Louvard, MD

3:50 pm Ostial / Vein Graft: Lesions

Corey G. Foster, MD

4:05 pm STEMI

S. Jay Mathews, MD

4:20 pm In-Stent Restenosis

Marc A. Sintek, MD

4:35 pm Q&A

4:40 pm BREAK / VISIT EXHIBITS

**SESSION III | FELLOWS CASE COMPETITION** 

Moderators: George S. Chrysant, MD; David A. Cox, MD;

James B. Hermiller, MD; David G. Rizik, MD

5:00 pm Fellows Case Presentations

6:20 pm Fellows Case Competition Award

6:35 pm FELLOWS COURSE CONCLUSION

David G. Rizik, MD

## **ARCH EVENING SYMPOSIUM\***

Everyone is invited to attend!

WEDNESDAY, APRIL 10, 2019

### **IMAGING / PHYSIOLOGY**

Supported by Philips Image Guided Therapy Devices

6:30 pm REGISTRATION / BUFFET DINNER

Ballroom A/B, 6th Floor Foyer

7:30 pm KEYNOTE ADDRESS

**Current Update in Imaging and Physiology** 

David G. Rizik, MD

8:00 pm New Tools in 2018

(FFR CT Angiography / Perfusion)

George S. Chrysant, MD

8:15 pm IFR / IVUS / OCT Co- Registration

Sukhjinder Nijjer, MD

8:30 pm Case Examples

Michael Daniel, MD; J. Trevor Posenau, MD;

Adam Shpigel, MD

9:00 pm Adjourn

Jasvindar Singh, MD

\*Not accredited for CME or CE credit.

# ARCH PRE-COURSE AGENDA

## THURSDAY, APRIL 11, 2019

7:30 am REGISTRATION / CONTINENTAL BREAKFAST

6th Floor Foyer

8:00 am WELCOME AND INTRODUCTION

Jasvindar Singh, MD

8:05 am KEYNOTE SPEAKER

Evolution of Physician, Nurses, Technicians Role in Cath Lab

Craig M. Walker, MD

SESSION I | ALLIED HEALTH PROFESSIONALS SESSION

**Moderators:** George S. Chrysant, MD; Marci Damiano, RN, MSN **Panelists:** Adrian W. Messerli, MD; Samantha Miller, RN, BSN; Craig M. Walker, MD

8:30 am Pharmacology in the Cath Lab

Hannah E. Pope, PharmD, BCPS, MHA; Kathleen Schlafly, RN, BSN, CCRN

8:45 am Approach to Complex PCI

Tim A. Fischell, MD

9:00 am Hypotension in the Cath Lab:

Causes and Treatment
Adrian W. Messerli, MD

9:15 am Radiation Safety in the Cath Lab

James A. Goldstein, MD

9:30 am Improving Quality Metrics

Amit P. Amin. MD: Brandon Rahn, MHA

9:45 am BREAK / VISIT EXHIBITS

**SESSION II | ACS / SHOCK** 

Moderator: John M. Lasala, MD, PhD

**Panelists:** James B. Hermiller, MD; Stuart T. Higano, MD;

Yves R. Louvard, MD; S. Jay Mathews, MD

10:00 am Case Presentation

Edward Coverstone, MD

10:15 am Role of Thrombectomy in STEMI

S. Jay Mathews, MD

10:30 am Culprit vs. Non-Culprit in Acute

**Coronary Syndrome** Alok Bachuwar, MD 10:45 am Role of Hemodynamic Support:

Basics and Case Selection

John M. Lasala, MD, PhD

11:00 am Impella vs. Intra-Aortic Balloon Pump

David A. Cox, MD

11:15 am Role of ECMO in Cardiogenic Shock

Akinobu Itoh, MD, PhD

11:30 am Best / Worst Cases After Fellowship

• Neville F. Mistry, MD

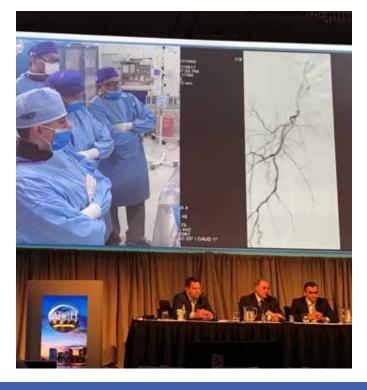
• Nishtha Sodhi, MD

• Paul M. Lavigne, MD

11:50 am Q&A

12:00 pm LUNCH / VISIT EXHIBITS





# GENERAL SESSION I AGENDA

### THURSDAY, APRIL 11, 2019

12:30 pm REGISTRATION

6th Floor Foyer

1:00 pm WELCOME AND INTRODUCTION

John M. Lasala, MD, PhD; Jasvindar Singh, MD

1:05 pm KEYNOTE SPEAKER

Structural Heart Disease: A Peek into the Future

Ian Meredith, AM

1:50 pm LIVE CASE 1

**Left Atrial Appendage Closure** 

Transmitted from Delray Medical Center,

Delray Beach, FL

**Operator:** Brijeshwar S. Maini, MD **Moderators:** Ralph J. Damiano, Jr., MD;

John M. Lasala, MD, PhD

**Panelists:** *Ian Meredith, AM; Amit Noheria, MD;* 

Steven J. Yakubov, MD

2:35 pm LIVE CASE 2 | TAVR

Transmitted from Barnes-Jewish Hospital,

St. Louis, MO

**Operators:** Puja Kachroo, MD; Marc A. Sintek, MD;

Alan Zajarias, MD

Moderators: Ralph J. Damiano, Jr., MD;

Ramon Quesada, MD

**Panelists:** *James B. Hermiller, MD;* 

John M. Lasala, MD, PhD; David G. Rizik, MD;

Steven J. Yakubov, MD

3:10 pm BREAK / VISIT EXHIBITS

#### AFTERNOON BREAKOUT SESSIONS

(Please select one to attend)

#### Breakout I | Ballroom A/B, 6th Floor

SURGERY, INTERVENTIONAL CARDIOLOGY, ELECTROPHYSIOLOGY: TAVR / LAA CLOSURE Moderators: John M. Lasala, MD, PhD; Jeffrey M. Sparling, MD Panelists: James B. Hermiller, MD; Spencer J. Melby, MD;

David G. Rizik, MD

3:25 pm LAA Closure: Patient Selection:

**Imaging and Anti-Thrombotic Therapy** 

Steven J. Yakubov, MD

3:40 pm Management of CAD and Aortic Stenosis:

**Current Thought on the Low-Risk Patient** 

Marc A. Sintek, MD

3:55 pm TAVR in Bicuspid Aortic Valve

Alan Zajarias, MD

4:10 pm Minimalist TAVR: Then and Now

Spencer J. Melby, MD

4:25 pm Alternative Access Selection for the

**Non-Transfemoral TAVR Patient** 

Hersh S. Maniar, MD

4:40 pm Embolic Protection in TAVR: Hope or Hype

Jeffrey M. Sparling, MD

4:55 pm Q&A / CLOSING REMARKS

#### Breakout II | Laclede Room, 6th Floor

PERIPHERAL SESSION I | OBL / ASC BOOTCAMP Moderators: Eric J. Dippel, MD; Craig M. Walker, MD Panelists: Paramjit S. Chopra, MD; George S. Chrysant, MD

3:25 pm Why Open an OBL /

ASC and Should it be Dual Entity

Craig M. Walker, MD

3:45 pm How to Start OBL / ASC: Soup to Nuts

Eric J. Dippel, MD

4:05 pm What Regulatory Changes Have

Occurred in 2019 and What Does

the Future Hold

Paramjit S. Chopra, MD

4:25 pm PCI in the OBL / ASC Setting: Is It Safe?

Ethan C. Korngold, MD

4:45 pm Q&A / CLOSING REMARKS

#### \*Breakout III | Mississippi Room, 8th Floor

**ROTATIONAL ATHERECTOMY** 

\*ROTABLATOR SYSTEM DIDACTIC CERTIFICATION COURSE

Supported by Boston Scientific

**Moderators:** Arthur B. Reitman, MD; Jasvindar Singh, MD

#### 3:30 pm - 5:00 pm DIDACTIC SESSIONS

- Welcome and Introduction Arthur B. Reitman, MD
- Disposables and Hardware TBA
- Clinical Results Arthur B. Reitman, MD
- Indications and Case Selection Tim A. Fischell, MD
- Technique Howard I. Kurz, MD
- Management of Complications John M. Lasala, MD, PhD
- O&A / CLOSING REMARKS

Note: After completing this session, a "Wet Heart Hands-on Training and Final Assessment" will be scheduled for Friday.

5:00 pm WELCOME WINE & CHEESE RECEPTION

Ballroom Foyer, 6th Floor

# GENERAL SESSION II AGENDA

**FRIDAY, APRIL 12, 2019** 

7:30 am REGISTRATION / CONTINENTAL BREAKFAST

6th Floor Foyer

8:00 am WELCOME AND INTRODUCTION

Jasvindar Singh, MD

8:05 am KEYNOTE SPEAKER

Current Status and Future of Interventional Cardiology Jeffrey W. Moses, MD

**SESSION I | CORONARY I** 

Moderator: John M. Lasala, MD, PhD

Panelists: David A. Cox, MD; James B. Hermiller, MD;

Yves R. Louvard, MD; Jeffrey W. Moses, MD

8:50 am Top Ten Coronary and Structural

**Trials of 2018**David G. Rizik, MD

9:10 am Top Five Peripheral Trials of 2018

Craig M. Walker, MD

9:35 am LIVE CASE 3

**Complex Physiology and Imaging** 

Transmitted from Imperial College,

London, England

**Operators:** Rasha Al-Lamee, MD; Sayan Sen, MD

**Moderators:** George S. Chrysant, MD;

Sukhjinder Nijjer, MD, PhD

**Panelists:** Richard G. Bach, MD; Stuart T. Higano, MD;

C. Huie Lin, MD, PhD; Marc A. Sintek, MD

10:15 am BREAK / VISIT EXHIBITS



10:30 am LIVE CASE 4 | Complex Coronary

Transmitted from Barnes-Jewish Hospital,

St. Louis, MO

**Operators:** Howard I. Kurz, MD; David G. Rizik, MD;

Jasvindar Singh, MD

Moderators: David A. Cox, MD; Jeffrey W. Moses, MD

Panelists: James B. Hermiller, MD; Yves R. Louvard, MD;

Kartik Mani, MBBS; Arthur B. Reitman, MD

**SESSION II | CORONARY II** 

Moderator: James B. Hermiller, MD

Panelists: Richard G. Bach, MD; Jeffrey W. Moses, MD;

Arthur B. Reitman, MD; David G. Rizik, MD

11:15 am DES (Drug Eluting Stents) Update

and New Trials
Jeffrey W. Moses, MD

11:30 am Update on Dual Antiplatelet Therapy

James B. Hermiller, MD

11:45 am Update on Left Main and Bifurcation

Treatment

Yves R. Louvard, MD

12:00 pm Q&A

12:10 pm LUNCH / VISIT EXHIBITS

1:15 pm LIVE CASE 5 | Complex Coronary

Transmitted from The Mount Sinai Hospital,

New York, NY

**Operators:** Annapoorna S. Kini, MD; Samin K. Sharma, MD

Moderators: David G. Rizik MD; Jasvindar Singh, MD

**Panelists:** David A. Cox, MD;

James Aaron Grantham, MD;

John M. Lasala, MD, PhD; Michael Yeung, MD

2:00 pm LIVE CASE 6 | Complex Peripheral

Transmitted from The Mount Sinai Hospital,

New York, NY

**Operator:** Prakash Krishnan, MD

**Moderators:** George S. Chrysant, MD; Anish J. Thomas, MD **Panelists:** Paramiit S. Chopra, MD; Kartik Mani, MBBS;

Luis A. Sanchez, MD; Jeffrey M. Sparling, MD

**SESSION III | HYPERTENSION:** 

**CURRENT GUIDELINES AND TREATMENT MODALITIES** 

Moderators: George S. Chrysant, MD; Marcos Rothstein, MD Panelists: S. Hinan Ahmed, MD; S. Jay Mathews, MD;

Luis A. Sanchez, MD

2:45 pm Hypertension Treatment: Current

**Guidelines and New Treatment Modalities** 

Marcos Rothstein, MD

3:00 pm Renal Denervation: Update of Trials

Jason Fontana, MD, PhD

3:15 pm Renal Vascular Disease:

**Case-Based Review** 

Michael Daniel, MD; Jasvindar Singh, MD

3:30 pm BREAK / VISIT EXHIBITS

3:45 pm LIVE CASE 7 | CTO

Transmitted from Memorial Medical Center / SIU School of Medicine, Springfield, IL

**Operators:** Mark J. Goodwin, MD; Tony J. DeMartini, MD

**Moderators:** Sudeshna Banerjee, MD;

James Aaron Grantham, MD

Panelists: Michael A. Brown, MD; Bryan D. Cogar, MD;

John M. Lasala, MD, PhD; Anthony J. Spaedy, MD

#### AFTERNOON BREAKOUT SESSIONS

(Please select one to attend)

#### Breakout I | Ballroom A/B, 6th Floor

#### STRUCTURAL HEART DISEASE III

Moderators: Ralph J. Damiano, Jr., MD; Alan Zajarias, MD Panelists: James B. Hermiller, MD; Hersh S. Maniar, MD; Sean Pinney, MD; David G. Rizik, MD

4:30 pm What is Guideline-Directed Medical

Therapy in Patients with Functional MR

Sean Pinney, MD

4:40 pm Mitra Clip for Functional MR:

**Patient Selection and Outcomes** 

David G. Rizik, MD

4:50 pm Catheter Based Therapies After Surgical

**Mitral Valve Intervention** 

Alan Zajarias, MD

5:00 pm Transcatheter Pulmonary

Valve Replacement:

**New Platforms, New Outcomes?** 

Vivian Dimas, MD

5:10 pm Q&A

5:20 pm CONCLUDING REMARKS

Ralph J. Damiano, Jr., MD

#### Breakout II | Laclede Room, 6th Floor

PERIPHERAL SESSION II | HOT TOPICS IN PULMONARY ARTERY DISEASE

Moderators: George S. Chrysant, MD; Luis A. Sanchez, MD

4:30 pm DES or DCB for SFA / Popliteal Disease

Anish J. Thomas, MD

4:40 pm Alternative Access: When and How to Use

Bryan D. Cogar, MD

4:50 pm Critical Limb Ischemia:

What Tools are Necessary to Treat?

S. Jay Mathews, MD

5:00 pm Carotid Stentings:

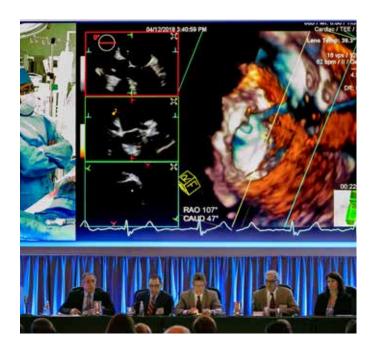
Is There an Algorithm?

Srini P. Potluri, MD

5:10 pm Q&A

5:20 pm CONCLUDING REMARKS

George S. Chrysant, MD; Luis A. Sanchez, MD





# **GENERAL SESSION III AGENDA**

SATURDAY, APRIL 13, 2019

7:30 am **REGISTRATION / CONTINENTAL BREAKFAST** 

6th Floor Fover

**WELCOME AND INTRODUCTION** 8:00 am

George S. Chrysant, MD

**SESSION I | KEYNOTE ADDRESS** 

Non-Invasive Coronary Physiology 8:05 am

Campbell D. Rogers, MD

**SESSION II | DEBATE CENTRAL** 

**Moderators:** George S. Chrysant, MD; Howard I. Kurz, MD Panelists: Richard G. Bach, MD; Sukhjinder Nijjer, MD, PhD;

Robert L. Shapiro, MD

8:50 am Radial vs. Femoral

Amit P. Amin, MD & Howard I. Kurz, MD

iFR vs. FFR 9:10 am

Sukhjinder Nijjer, MD, PhD &

Stuart T, Higano, MD

Stable Angina: Medical Therapy vs. PCI 9:30 am

Richard G. Bach, MD & David. L. Brown, MD

**BREAK / VISIT EXHIBITS** 9:50 am

SESSION III | CORONARY MISCELLANEOUS SESSION

Moderators: John M. Lasala, MD, PhD; Arthur B. Reitman, MD Panelists: Alan C. Braverman, MD; Stilianos Efstratiadis, MD;

Tim A. Fischell, MD; Robert D. Shapiro MD

10:05 am Spontaneous Coronary Artery

Dissection (SCAD):

**Recognition and Management** 

Alan C. Braverman, MD

10:20 am **Update on Calcium Management Tools** 

(Orbital, Rotational, Lithotripsy)

Arthur B. Reitman, MD

Laser Atherectomy 10:35am

Marc A. Sintek, MD

**Specialty Balloons and New** 10:50 am

Tools in the Cath Lab

Tim A. Fischell, MD

SESSION IV | STRUCTURAL / PERIPHERAL

**Moderators:** George S. Chrysant, MD; Vivian Dimas, MD Panelists: David T. Balzer, MD; Amr El-Shafei, MD;

John M. Lasala, MD, PhD

**Update on PFO / AFD Closure** 11:15 am

John M. Lasala, MD, PhD

**Imaging for Structural Heart Disease** 11:30 am

Majesh Makan, MD

**Interesting Case:** 11:45 am

**Adult Congenital** C. Huie Lin, MD, PhD

**Interesting Case:** 12:00 pm

**Pediatric Congenital** David T. Balzer, MD

**Pulmonary / Venous** 12:15 pm

Thromboembolic Disease:

**Current Update on Interventional** 

**Therapies** 

Thomas Tu, MD

12:30 pm **Interesting Case:** 

**Venous Intervention** Amr El-Shafei, MD

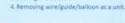
**CLOSING REMARKS /** 12:45 pm

MEETING ADJOURNMENT

Jasvindar Singh, MD George S. Chrysant, MD

#### Entrapped balloons

- . Extremely rare complication of PCI
- · Most commonly seen in heavily calcified and/or tortuous lesions
- · Removal techniques:
  - I, inserting a second balloon distally and then inflating and pulling it back.
  - 2. Inserting two wires distally and twisting them to for 3. Snaring the balloon.







# **SPECIAL EVENTS**

THURSDAY, APRIL 11, 2019

## **MEET THE EXPERTS\*** | Supported by: Boston Scientific

Moderators: John M. Lasala, MD, PhD; Ramon Quesada, MD; Anthony J. Spaedy, MD Yves R. Louvard, MD; Arthur B. Reitman, MD; David G. Rizik, MD

5:00 pm WINE AND CHEESE WELCOME RECEPTION, 6th Floor Foyer

5:15 pm WELCOME - Jasvindar Singh, MD

5:20 pm Case Reviews 6:10 pm Q&A / ADJOURN

### INDUSTRY SUPPORTED EVENING SYMPOSIA

6:30 pm - 8:30 pm

On Thursday evening attendees may choose from multiple Evening Symposia sponsored by various industry partners. Information and registration will be available onsite.



#### SYMPOSIUM SUPPORTERS

The Advanced Revascularization-Chapter XII (ARCH) Symposium will be supported through educational grants and exhibit fees from commercial supporters. The Course Directors will develop the educational content without any influence from commercial supporters. Exhibits will be available for viewing at all scheduled breaks. Following is a list of the 2018 ARCH supporters. A complete list of the 2019 ARCH Supporters and appropriate acknowledgement will be given to all supporters at the time of the meeting in the course syllabus.

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Terumo Interventional Systems
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# General Information

To register for the 2019 ARCH Symposium complete the registration form and return to Gaffney Events or register online:

www.ARCHsymposium.com

Gaffney Events 27322 NE 143rd Place Duvall, WA 98019 PH: 425.844.9019 FAX: 425.788.0668

# **Full Symposium Registration Fees**

The Full Registration Fee includes attendance at the Tuesday and Wednesday morning Heart Rhythm Symposium, Thursday morning ARCH Pre-Course Symposium, the Thursday afternoon, Friday and Saturday General Sessions, continental breakfasts, refreshment breaks, lunches and the Thursday Evening Welcome Cocktail Reception.

# Fellows and Residents registration fees are WAIVED!

# Discount Registration prior to Friday, March 22, 2019!

Physician, Non-Member of SCAI	\$400	\$450
Physician, Member of SCAI	\$350	\$400
Fellow / Resident	Waived	Waived
Nurse / PA / Technician	\$100	\$150
Industry Representative	\$250	\$300
Affiliate of Washington University School of Medicine or Barnes-Jewish Hospital	\$100	\$100

# **Heart Rhythm Symposium ONLY Registration Fees:**

The Full Registration Fees below include attendance at the Tuesday Full Day and Wednesday Half Day Heart Rhythm Symposium **ONLY**:

#### One-and-A-Half-Day Heart Rhythm Symposium Rates

Physician, Non-Member of SCAI	
Physician, Member of SCAI	\$175
Fellow / Resident (Registration Fees Waived)	\$0
Nurse / PA / Technician	\$50
Industry Representative	\$125
Affiliate of Washington University School of Medicine or Barnes-Jewish Hospital	\$50

# **Cancellations**

Cancellations will be accepted through Friday, March 29th and are subject to a \$75 administrative fee. There will be no refund of tuition for cancellations received after that date. Gaffney Events must receive written notification of your intent to cancel before the cancellation deadline. No refund of tuition will be given for no-shows.

### Location

Four Seasons Hotel
999 North 2nd Street
St. Louis, Missouri 63102
PH: 314.881.5800
\$199.00/night + tax



#### www.fourseasons.com/stlouis

A block of rooms has been reserved at the Four Seasons Hotel in St. Louis for attendees of the 2019 ARCH Symposium at a special reduced rate of \$199.00 single or double occupancy per night plus tax. To receive the discounted room rate, reservations must be booked and confirmed by Thursday, March 21, 2019. After that date, reservations will be subject to space and rate availability.

**Note:** This special reduced conference rate will be honored 2 days prior and 2 days after the symposium, based on availability.

Contact the Reservations Department directly at 314.881.5757 to request accommodations. When making reservations, please be sure to mention that you will be attending the Washington University and Barnes-Jewish Hosptial ARCH Symposium in order to obtain the discounted group rate.

### **Online Reservations**

To book your room online, visit www.ARCHSymposium.com

### **SAVE-THE-DATE!**

April 21 - 25, 2020

Four Seasons Hotel St. Louis, Missouri





# **Registration Form**



Credentials:   MD   DO   PhD   RN   Other (specify)    NPI #:   Institution:   Address:   Zip:   Email:   (Must supply email to receive confirmation)  Office Phone:   Office Fax:    Type of Practice:   Cardiovascular Disease   Endovascular Disease   Electrophysiology   Other    Early Registration Savings!  REGISTRATION RATES ARE DISCOUNTED   25% OFF THE FULL REGISTRATION LISTED   PRICE IF RECEIVED PRIOR TO MARCH 22, 2019  ARCH - Full Symposium Registration:   ARCH Symposium Registration:   ARCH Symposium B Heart Rhythm Symposium   ARCH Symposium B Heart Rhythm Symposium   Sample Physician, Non-Member of SCAl   Sample Physician, Member of	First Name: Last	t Name:			
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Cardiovascular Disease   Endovascular Disease   Electrophysiology   Other	Office Phone:	Office Fax:			
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In order to receive the Computementary Fiellows Fall: Meeting Registration or apply for participation in one of the Fellow Course, please visit the website at cocymposium. PRICE IF RECEIVED PRIOR TO MARCH 22, 2019  ARCH - Full Symposium Registration:  ARCH - Full Symposium Registration Fees Waived and 1 Symposium Registration Fees Waived  As a Full - Registration Registration Fees Waived  As a Full - Registration Registration Fees Waived  As a Full - Registration Pulm Registration Fees Waived  As a Full - Registration Registration Registration Fees Waived  ARCH - Full Symposium Registration Registration Fees Waived  As a Full -	E cardiovascatal piscasc	action by a contraction of the c			
ARCH Symposium & Heart Rhythm Symposium  One-and-A-Half-Day Heart Rhythm Symposium Rates  (Attendance Tuesday & Wednesday Morning. April 9th and 10th, ONLY)  Physician, Non-Member of SCAI  STOD   Physician, Member of SCAI  STOD   Physician, Member of SCAI  STOD   Physician, Non-Member of SCAI  STOD   Physician, Member of SCAI  STOD   Physician, Member of SCAI  STOD   Physician, Member of SCAI  STOD   Physician, Non-Member of SCAI  STOD   Physicia	Early Registration Savings! REGISTRATION RATES ARE DISCOUNTED 25% OFF THE FULL REGISTRATION LISTED PRICE IF RECEIVED PRIOR TO MARCH 22, 2019	In order to receive the Complimentary Fellows Full-Meeting Registration or apply for participation in one of the Fellows Courses, please visit the website at cccsymposium.org. Please contact Jessica Pitts at jessica@gaffneyevents. com with any questions. Complimentary registration is limited and on a first-			
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\$100   Nurse / PA / Technician	\$350 Physician, Member of SCAI	and 10th, ONLY)			
\$250   Industry Representative   \$0   Fellow / Resident (Registration Fees Waived)   \$100   Affiliate of Washington University School of Medicine or Barnes-Jewish Hospital   \$125   Industry Representative    As a Full-Registration participant, please check the day(s) and BREAKOUT Sessions you will be attending (REQUIRED):   Tuesday, Heart Rhythm Symposium   Wednesday Half Day, Heart Rhythm Symposium   BREAKOUT II - SURGERY, INTERVENTIONAL CARDIOLOGY, ELECTROPHYSIOLOGY: TAVR / LAA CLOSURE   BREAKOUT III - PERIPHERAL SESSION II OBL / ASC BOOTCAMP   BREAKOUT III - ROTATIONAL ATHERECTOMY CERTIFICATION COURSE   Friday, ARCH Symposium   BREAKOUT II - PERIPHERAL SESSION II   Hot Topics in Pulmonary Artery Disease   Saturday Morning, ARCH Symposium   BREAKOUT II - PERIPHERAL SESSION II   Hot Topics in Pulmonary Artery Disease   Saturday Morning, ARCH Symposium   BREAKOUT II - PERIPHERAL SESSION II   Hot Topics in Discover   Discover   MasterCard   American Express   Discover   Discover   Exp. Date:   Exp. Date:	\$0	-			
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□ Tuesday, Heart Rhythm Symposium   □ Wednesday Half Day, Heart Rhythm Symposium   □ Thursday, ARCH Symposium   □ BREAKOUT I - SURGERY, INTERVENTIONAL CARDIOLOGY, ELECTROPHYSIOLOGY: TAVR / LAA CLOSURE   □ BREAKOUT III - PERIPHERAL SESSION I  OBL / ASC BOOTCAMP   □ BREAKOUT III - ROTATIONAL ATHERECTOMY CERTIFICATION COURSE   □ Friday, ARCH Symposium   □ BREAKOUT I - STRUCTURAL HEART DISEASE III   □ BREAKOUT II - PERIPHERAL SESSION II   Hot Topics in Pulmonary Artery Disease   □ Saturday Morning, ARCH Symposium    Method of Payment:  □ Check (Please make checks payable to Gaffney Events Educational Trust)   □ Visa □ MasterCard □ American Express □ Discover   Name as it appears on credit card: □ Exp. Date:   Credit Card Number: □ Exp. Date:	As a Full-Registration participant, please check the day(s) and	\$50 Affiliate of Washington University School of Medicine			
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