



The Society for Cardiovascular  
Angiography and Interventions



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Echocardiography

## LAA Closure, TAVR, ASD/PFO, Mitral Repair, TMVR, and More

Featuring live case demonstrations, hands-on workshops and satellite symposia!

### Course Directors

**Matthew J. Price, MD, FACC**

Director

Cardiac Catheterization Laboratory

Scripps Clinic

Assistant Professor

Scripps Translational Science Institute

La Jolla, California

**David S. Rubenson, MD, FACC, FASE**

Founding Director

Cardiac Non-Invasive Laboratory

Scripps Clinic

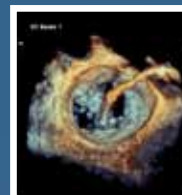
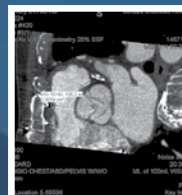
La Jolla, California

### Live Satellite Case Transmissions

Seventh Annual

# Structural Heart Intervention and Imaging: *A Practical Approach*

February 7-9, 2018 • San Diego Marriott • La Jolla, California



# Course Description

## Course Overview

Transcatheter structural heart disease intervention is a rapidly growing part of clinical care in adult cardiology. Experts expect structural heart disease procedures to grow by as much as 30% in the next decade. Interventionists will need to be skilled in many more procedures than in the past. These procedures require the application of new interventional techniques while integrating imaging before and during treatment. This is an increasingly complex process that relies on systematic and effective collaboration between cardiovascular imaging specialists and interventionists, among others.

Scripps' Structural Heart Intervention and Imaging conference is designed to provide a practical, cutting-edge, and case-based assessment of the emerging area of structural heart disease intervention and interventional cardiovascular imaging, with an emphasis on the collaborative nature of these procedures across many disciplines within cardiology. The expert faculty will include interventionists, invasive cardiologists, echocardiographers, electrophysiologists, cardiac surgeons, anesthesiologists, and sonographers. Faculty will discuss clinical guidelines on patient selection, pre-procedural assessment, procedural tips, techniques and challenges (including concurrent imaging) during the performance of the procedures and conclude with assessment of outcomes and future directions.



## Conference Highlights

- Multidisciplinary expert faculty emphasizing a team approach to care
- Combination of educational formats including live demonstrations of catheter-based structural heart disease interventional procedures with intraprocedural imaging, clinical-pathological correlations with ex vivo cardiac specimen, and pertinent didactic lectures
- Interactive formats, panel discussions, Q&A, and more
- Live satellite case transmissions
- Expanded satellite symposia and hands-on workshops
- Mobile conference app with access to course materials and recordings from the convenience of your mobile device or computer

## Educational Objectives

**After attending this live activity, participants should be able to:**

- Assemble the appropriate multidisciplinary team, imaging technologies and catheter equipment to perform structural heart disease interventions.
- Identify complications of catheter-based therapies for structural heart disease and safely manage them with various procedural techniques.
- Apply a comprehensive approach to the assessment of the aortic, mitral, and tricuspid valves, and the interatrial septum, using echocardiography (TTE, TEE and ICE), CT, and MRI for the purpose of the interventional treatment of these cardiac structures.
- Interpret current clinical data in order to optimize the treatment of patients with aortic stenosis, mitral regurgitation and atrial fibrillation.
- Discuss tricuspid anatomy and function and assess the implications of tricuspid regurgitation and transcatheter techniques for transcatheter tricuspid valve repair.
- Cite the current indications for catheter-based techniques, including transcatheter aortic valve replacement (TAVR), transcatheter mitral valve repair/replacement, left atrial appendage closure, ASD, and paravalvular leaks.
- Evaluate the patient with cryptogenic stroke and identify the patient in whom PFO closure is appropriate.
- Integrate emerging data into TAVR decision-making regarding surgical risk, including low and intermediate-risk patients.
- Interpret and incorporate CT imaging before and after LAA closure.
- Integrate basic and advanced imaging and catheter techniques for transseptal puncture for the purpose of LAA closure, transcatheter mitral valve repair and paravalvular leak closure.
- Select the appropriate type and size device for TAVR, LAA closure, PFO closure, and other structural interventions.
- Apply echocardiographic findings to determine optimal strategy for transcatheter mitral valve repair.
- Employ specific catheter techniques and technologies for the transcatheter repair of simple and complex aortic and mitral paravalvular leaks.
- Incorporate advanced techniques for transcatheter mitral valve repair, TAVR, PFO, ASD, and LAA closure in the setting of challenging anatomy and/or patient co-morbidities.
- Avoid common pitfalls in the application of the newer imaging modalities.

## Accreditation and Disclosure

### Physicians

Scripps Health is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Scripps Health designates this live activity for a maximum of 19 *AMA PRA Category 1 Credit(s)*<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in the activity.

### Nurses

For the purpose of recertification, the American Nurses Credentialing Center accepts *AMA PRA Category 1 Credit(s)*<sup>™</sup> issued by organizations accredited by the ACCME. For the purpose of re-licensure, the California Board of Registered Nursing accepts *AMA PRA Category 1 Credit(s)*<sup>™</sup>. The majority of state boards accept *AMA PRA Category 1 Credit(s)*<sup>™</sup> as meeting continuing education requirements for license renewal. Nurses should check with their state's Board of Registered Nursing regarding use of CME credit.

### Physician Assistants

The American Academy of Physician Assistants accepts Category 1 credit from AMA Category 1 CME organizations accredited by the ACCME.

### Commercial Support

This course is supported, in part, by educational grants from industry, in accordance with ACCME accreditation Standards for Commercial Support. Appropriate acknowledgement will be given to all supporters at the time of the educational activity.

## Target Audience

- Interventional Cardiologists
- Invasive Cardiologists
- Echocardiographers
- Interventional Radiologists
- Cardiovascular Surgeons
- Cardiac Anesthesiologists
- Cardiology Nurses and Physician Assistants
- Cardiovascular Sonographers
- Cardiac Catheterization Technicians

# Faculty

## Course Directors

### **Matthew J. Price, MD, FACC**

Director, Cardiac Catheterization Laboratory  
Scripps Clinic and  
Prebys Cardiovascular Institute  
Assistant Professor  
Scripps Translational Science Institute  
La Jolla, California

### **David S. Rubenson, MD, FACC, FASE**

Founding Director  
Cardiac Non-Invasive Laboratory  
Scripps Clinic and  
Prebys Cardiovascular Institute  
La Jolla, California

## Course Co-Directors

### **Stephen Hu, MD**

Director  
Clinical and Procedural Cardiac CT  
Scripps Clinic and  
Prebys Cardiovascular Institute  
La Jolla, California

### **Michael R. Smith, MD, FACC, FASE**

Director  
Non-Invasive Research  
Scripps Clinic and  
Prebys Cardiovascular Institute  
La Jolla, California

### **Curtiss T. Stinis, MD, FACC, FSCAI**

Director  
Peripheral Interventions  
Scripps Clinic and  
Prebys Cardiovascular Institute  
La Jolla, California

## Conference Faculty

### **Mary Z. Bechis, MD**

Staff Cardiologist  
Sharp Rees-Stealy Medical Group  
Sharp Memorial Hospital  
San Diego, California

### **Justin M. Cox, MD, FACC, FSCAI**

Interventional Cardiologist  
Naval Medical Center  
San Diego, California

### **Samir R. Kapadia, MD, FACC, FSCAI**

Professor of Medicine  
Section Head, Interventional Cardiology  
Director, Cardiac Catheterization Laboratory  
Cleveland Clinic  
Cleveland, Ohio

### **G. Burkhard Mackensen, MD, PhD, FASE**

Medical Education and Research  
Endowed Professorship  
Director of the Sones Cardiac  
Catheterization Laboratories  
Professor and Chief  
Department of Anesthesiology & Pain Medicine  
Division of Cardiothoracic Anesthesia  
University of Washington Medical Center  
Seattle, Washington

### **Rajeev C. Mohan, MD**

Advanced Heart Failure and Mechanical  
Circulatory Support Cardiologist  
Scripps Clinic and  
Prebys Cardiovascular Institute  
La Jolla, California

### **Michael H. Picard, MD, FACC, FASE**

Professor, Harvard Medical School  
Director, Clinical Echocardiography  
Massachusetts General Hospital  
Boston, Massachusetts

### **David G. Rizik, MD, FACC, FSCAI**

Chief Scientific Officer  
Director of Structural and Coronary Interventions  
HonorHealth Heart Group  
Scottsdale, Arizona

### **Jason H. Rogers, MD, FACC, FSCAI**

Professor, Cardiovascular Medicine  
Director, Interventional Cardiology  
University of California  
Davis Medical Center  
Sacramento, California

### **Douglas C. Shook, MD, FASE**

Director  
Cardiothoracic Anesthesiology Fellowship  
Director  
Cardiac Interventional Anesthesia Services  
Department of Anesthesiology, Perioperative  
and Pain Medicine  
Brigham and Women's Hospital  
Harvard Medical School  
Boston, Massachusetts

### **Thomas W.R. Smith, MD, FACC**

Director, Cardiac Imaging  
Director, Exercise Stress Test and  
Echocardiography Laboratories  
Assistant Professor of Medicine  
University of California, Davis Medical Center  
Sacramento, California

### **Christian Spies, MD, FACC, FSCAI**

Director of the Cardiac Catheterization Laboratory  
The Queen's Center for Valve and  
Structural Heart Disease  
Queen's Medical Center  
Honolulu, Hawaii

### **Ajay V. Srivastava, MD, FACC**

Director, Acute Mechanical Circulatory  
Support/Heart Failure Program  
Scripps Clinic  
La Jolla, California

### **William J. Stewart, MD, FACC, FASE**

Staff Cardiologist  
Sydell and Arnold Miller Family Heart  
and Vascular Institute  
Cleveland Clinic  
Section of Cardiovascular Imaging  
Professor of Medicine  
Cleveland Clinic Lerner College of Medicine  
at Case Western Reserve University  
Cleveland, Ohio

### **Gilbert H. Tang, MD, MSc, MBA FRCSC, FACC**

Thoracic and Cardiac Surgeon  
Surgical Director, Structural Heart Program  
Mount Sinai Health System  
New York, New York

### **Paolo M. Tartara, MD**

Cardiac Surgeon  
THV Proctor Physician  
Edwards Lifesciences  
Irvine, California

### **Paul S. Teirstein, MD, FACC, FSCAI**

Chief of Cardiology  
Director, Interventional Cardiology  
Scripps Clinic  
Director, Scripps Prebys Cardiovascular Institute  
Scripps Health  
La Jolla, California

### **Apostolos Tzikas, MD, PhD, FESC**

Interventional Cardiologist  
Thessaloniki, Greece

### **Miguel Valderrábano, MD, FACC**

Associate Professor of Medicine  
Weill College of Medicine at Cornell University  
Adjunct Associate Professor of Medicine  
Baylor College of Medicine  
Director, Division of Cardiac Electrophysiology  
Department of Cardiology  
Houston Methodist Hospital  
Houston, Texas

## Faculty Disclosure

In accordance with the ACCME Standards for Commercial Support, course directors, planning committees, faculty and all others in control of the educational content of the CME activity must disclose all relevant financial relationships with any commercial interest that they or their spouse/partner may have had within the past 12 months. If an individual refuses to disclose relevant financial relationships, they will be disqualified from being a part of the planning and implementation of this CME activity. Owners and/or employees of a commercial interest with business lines or products relating to the content of the CME activity will not be permitted to participate in the planning or execution of any accredited activity.

A complete listing of disclosures associated with this program can be found on the conference website: [www.scripps.org/structuralheartintervention](http://www.scripps.org/structuralheartintervention) and in the mobile conference app: [www.grupio.com/SHI18](http://www.grupio.com/SHI18).



# Agenda

Wednesday, February 7, 2018

## HANDS-ON TRANSEPTAL WORKSHOP

Non-CME Activity Supported by Baylis Medical and Boston Scientific Corporation

### 8 a.m.- Transseptal Workshop

- 1 p.m. *Matthew J. Price MD*  
*Jason H. Rogers, MD and*  
*Douglas C. Shook, MD*

This hands-on workshop is intended for the practicing interventional cardiologist who is planning on performing procedures involving left atrial access, such as, but not limited to, transcatheter mitral valve repair, LAA closure, and mitral valvuloplasty. Upon completion of this activity, the physician should be able to utilize best practices in transseptal puncture to avoid complications. The agenda will include didactics, dissection, simulation, and an animal lab with hands-on catheter manipulation.

To register, please visit [www.baylismedical.com/tspcourses](http://www.baylismedical.com/tspcourses) to indicate your interest.

## IMAGING SYMPOSIUM AND HANDS-ON WORKSHOP EMPHASIZING 3D ECHOCARDIOGRAPHY

Non-CME Activity Supported by GE Healthcare and Philips Healthcare

1 p.m. Registration

### 1:30 p.m. GE Hands-on Workshop

*David S. Rubenson, MD and*  
*Douglas C. Shook, MD*

### 3 p.m. Philips Hands-on Workshop

*David S. Rubenson, MD and*  
*Douglas C. Shook, MD*

4:30 p.m. Adjourn

These hands-on workshops are designed to enhance the skill set for echocardiographers, cardiac sonographers, invasive and interventional cardiologists involved in pre-operative and intra-operative imaging for structural intervention. Expert imaging faculty will guide the audience through the analysis of cardiac anatomy using three-dimensional echo datasets on individual work stations. Instruction will emphasize display of anatomy and measurements for pre-procedural analysis and intra-procedure guidance for TAVR, transseptal puncture, LAA and ASD closure, and mitral valve procedures.

This session is limited to the first 50 participants.

## Wednesday Afternoon Symposium

### CHALLENGING CASES IN STRUCTURAL HEART INTERVENTION

Non-CME Activity

4 p.m. Networking Reception

### 4:30 p.m. Discussion with the Experts

Moderator:

*Matthew J. Price, MD*

Discussants:

*David G. Rizik, MD*

*Miguel Valderrábano, MD*

6 p.m. Adjourn

## Wednesday Dinner Symposium

### MITRAL REGURGITATION AND INTERVENTIONAL HEART FAILURE: NEW PARADIGMS FOR DIAGNOSIS AND TREATMENT

Non-CME Activity

### 6:30 p.m. The Natural History of Primary and Secondary Mitral Regurgitation: When and Why to Intervene

*Thomas W.R. Smith, MD*

### 7 p.m. Decision Pathway for MR Therapy: Surgery, Transcatheter Repair or TMVR

*David G. Rizik, MD*

### 7:30 p.m. Challenging MitraClip™ Case Studies

*Matthew J. Price, MD*

### 8 p.m. Triaging the Heart Failure Patient to the Appropriate Intervention: Perspective of the Heart Failure Specialist

*Ajay V. Srivastava, MD*

8:30 p.m. Adjourn



# Agenda

Thursday, February 8, 2018

6:30 a.m. Registration, Continental  
Breakfast & View Exhibits

7:30 a.m. **LIVE CASE**

**TAVR in the United States:  
Where We Are and Where  
We Are Going**

*Paul S. Teirstein, MD*

**Clinical-Pathological  
Correlations: The Aortic  
Valve**

*Douglas C. Shook, MD*

**Site Selection and  
Techniques for TAVR  
Alternative Access**

*Curtiss T. Stinis, MD*

**Clarifying the Unclear:  
Alternative Assessments for  
the Borderline AS Patient**

*Michael H. Picard, MD*

**TAVR Device Selection and  
Expanding TAVR Indications**

*David G. Rizik, MD*

**Conscious Sedation for TAVR:  
Rationale, Technique and  
Outcomes**

*G. Burkhard Mackensen, MD, PhD*

9:30 a.m. Break & View Exhibits

10 a.m. **LIVE CASE**

**Clinical-Pathological  
Correlations: The Mitral  
Valve and Annulus**

*Douglas C. Shook, MD*

**Current Status of  
Transcatheter Mitral Valve  
Repair in the United States**

*Matthew J. Price, MD*

**Case Vignette: Challenging  
Transcatheter Mitral Valve  
Repair**

*Christian Spies, MD*

**Dedicated TEE Approach for  
MR Assessment in  
Transcatheter Mitral Valve  
Repair**

*Thomas W.R. Smith, MD*

**Transcatheter Mitral Valve  
Repair after Surgical Repair**

*Christian Spies, MD*

Noon Lunch and Challenging Cases

1:30 p.m. **LIVE CASE**

**Clinical-Anatomical  
Correlations: The Left Atrial  
Appendage**

*Douglas C. Shook, MD*

**Practical Approach to CT  
Evaluation of the LAA for  
Closure**

*Apostolos Tzikas, MD, PhD*

**Echocardiographic Guidance  
of LAA Closure**

*Mary Z. Bechis, MD*

**Amulet™ LAA Closure,  
Step-by-Step**

*Apostolos Tzikas, MD, PhD*

**Watchman™ LAA Closure,  
Step-by-Step**

*Miguel Valderrabano, MD*

**Case Vignette: Managing  
Post-LAA Closure Leak**

*Matthew J. Price, MD*

3:30 p.m. Break & View Exhibits

4 p.m. **LIVE CASE**

**Clinical-Pathological  
Correlations: The Atrial  
Septum, Transseptal  
Puncture and PFO**

*Douglas C. Shook, MD*

**Fundamentals of Safe  
Transseptal Puncture:  
Incorporating Echo and  
the Needle**

*Jason H. Rogers, MD*

**Has the Needle Swung?  
Randomized Clinical Trial  
Data Update for PFO  
Closure**

*Matthew J. Price, MD*

**The Role of the Cardiac  
Anesthesiologist in  
Structural Heart Disease  
Intervention**

*G. Burkhard Mackensen, MD, PhD*

6 p.m. Adjourn





# Agenda

Friday, February 9, 2018

6:30 a.m. Continental Breakfast & View Exhibits

7:30 a.m. **Clinical-Pathological Correlations: The Tricuspid Valve**

*Douglas C. Shook, MD*

**Case Vignette: Transcatheter Tricuspid Valve Repair**

*Gilbert H. Tang, MD*

**The Natural History of Tricuspid Regurgitation: Why We Should Care About the Tricuspid Valve**

*David S. Rubenson, MD*

**Comprehensive Imaging Assessment of Tricuspid Regurgitation**

*G. Burkhard Mackensen, MD, PhD*

**Transcatheter Leaflet Plication for Tricuspid Regurgitation: Mechanism and Technical Approach**

*Gilbert H. Tang, MD*

**Novel Approaches to Transcatheter Tricuspid Valve Repair**

*Jason H. Rogers, MD*

**Transcatheter Mitral Valve-in-Valve Implantation: Data Dive**

*Justin M. Cox, MD*

9:30 a.m. Break & View Exhibits

10 a.m. **LIVE CASE**

**Imaging Evaluation of Mitral Prosthesis Dysfunction**

*William J. Stewart, MD*

**CT Assessment for Mitral Valve-in-Valve Implantation**

*Paolo M. Tartara, MD*

**Mitral Valve-in-Valve and Valve-in-Ring: Patient Selection and Technique**

*Justin M. Cox, MD*

**TMVR: Which Technology and Which Patient**

*Jason H. Rogers, MD*

**Case Vignette: Transcatheter Mitral Valve-in-Valve Replacement**

*Matthew J. Price, MD*

Noon Lunch and Challenging Cases

1:30 p.m. **LIVE CASE**

**Transcatheter Direct and Indirect Annuloplasty for MV Repair**

*Jason H. Rogers, MD*

**Conscious Sedation for LAA Closure**

*Samir R. Kapadia, MD*

**TEE Evaluation after LAA Closure: Seal, Healing and Thrombus**

*Mary Z. Bechis, MD*

**Intracardiac Shunt for the Treatment of Heart Failure**

*Rajeev C. Mohan, MD*

3:30 p.m. Break & View Exhibits

4 p.m. **LIVE CASE**

**Fundamentals of Pericardiocentesis**

*Miguel Valderabanno, MD*

**Complication of LAA Closure**

*Samir R. Kapadia, MD*

**Complication of TAVR**

*Curtiss T. Stinis, MD*

**Complication of Transcatheter Mitral Valve Repair**

*Gilbert H. Tang, MD*

**My Worst Structural Heart Complication**

*Christian Spies, MD*

6 p.m. Final Adjournment



**Download the Scripps CME app for your smart phone or tablet!**

All conference information including a detailed agenda, faculty listing, faculty disclosures, industry support, attendee list, and course materials can be found on the free Scripps CME conference app for smart phones, tablets, and laptop computers. To download the app on your smart phone or other device visit the appropriate app store and search ScrippsCME (must be one word). The app is free of charge and will be continuously updated during and after the course.

To access the site using a web browser:  
<http://www.grupio.com/SHI18>

# Conference Location & Hotel Information

## San Diego Marriott La Jolla

4240 La Jolla Village Drive  
La Jolla, California 92037

Reservations: **800-228-9290**

Phone: **858-587-1414**

### Rates and Reservations

We are fortunate to have obtained special low rates at the hotel starting at \$229 per night for a single or double room (plus tax and parking). Discounted overnight self-parking will be available to those participants who book under the Scripps room block.

**Make your reservations early!** A block of rooms is being held for us at the \$229 rate **until Thursday, January 18, 2018 or until the block fills, whichever comes first.** After this date, reservations will be accepted based on space availability and the special room rate may not be honored. Be sure to request the Scripps Structural Heart Intervention conference when making reservations.



# Conference Fees & Registration

## Register Online

[www.scripps.org/structuralheartintervention](http://www.scripps.org/structuralheartintervention)

### Space is limited, so register early!

**Included:** Course tuition, breakfasts, breaks, lunches, internet access, and electronic course materials

**Not Included:** Travel costs, lodging, and parking

|                                   | Thru Jan 15 | Jan 16 - Feb 2 | On-site<br>After Feb 2 |
|-----------------------------------|-------------|----------------|------------------------|
| Wednesday Pre-Conference Symposia | \$50        | \$50           | \$75                   |
| <b>GENERAL CONFERENCE</b>         |             |                |                        |
| Physicians                        | \$599       | \$625          | \$650                  |
| Residents or Fellows              | \$399       | \$425          | \$450                  |
| RN, NP, PA, Tech, Other           | \$299       | \$325          | \$350                  |
| SCAI/ASE Physician Member         | \$480       | \$500          | \$520                  |
| SCAI/ASE Non-Physician Member     | \$240       | \$260          | \$280                  |



## Attendance Policies

### Attendee Cancellation, Substitution, Refund

The course tuition is refundable, minus a \$100 processing fee, if your cancellation is received in writing no later than **Friday, February 2, 2018.** Attendee substitutions are allowed, but notification must be made in writing by **Friday, February 2, 2018.** After this date, under no circumstances will refunds, credits, or substitutions be granted. No refunds or credits will be given to "no shows."

### Guest Attendance Policy

All conference activities, including, meal functions, are exclusively reserved for paid conference attendees. Children and family members are not allowed in the conference areas. Badges provided at registration are required for entrance into all functions and will be strictly enforced.

### Scripps Conference Modification or Cancellation

Scripps reserves the right to modify the course's schedule or program as necessary. Scripps also reserves the right to cancel this conference, in which case a full refund of the registration fee will be provided. We are unable to refund any travel costs (flight, hotel, etc.) in the case of Scripps cancellation.

### Recording and Photography Clause

Scripps reserves exclusive rights to record (audio and video) and/or photograph all conference proceedings for use in marketing materials, presentations and course content sales.



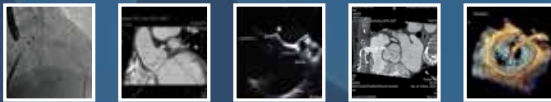
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Live Satellite Case Transmissions

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