



# **COURSE SYLLABUS**

**August 19 – 20, 2022**

**Estancia La Jolla Hotel**

**San Diego, California**

**Ehtisham Mahmud, MD, FACC, MSCAI**

*Program Director*

**UC San Diego**

**School of Medicine**

## **Commercial Support Acknowledgment**

We would like to thank the following companies for providing educational support for this activity:

- Abbott
- Boston Scientific Corporation
- Chiesi, USA
- Cordis
- Edwards Lifesciences
- Shockwave
- Siemens Healthineers
- Medtronic

## **Course Description**

Over the course of two days, The San Diego Cardiovascular Interventions Symposium will focus on disseminating the knowledge and evidence-based data regarding novel and innovative therapeutic options for patients with complex coronary, structural and peripheral vascular disease. The symposium will focus on the use of advanced techniques and technologies including robotics, atherectomy, hemodynamic support devices and the use of intravascular imaging and physiology for optimal cardiovascular revascularization. The impact of COVID-19 on the field of interventional cardiology and patient care will be addressed. New coronary CTO techniques and tools, indications for left main and bifurcation PCI with appropriate techniques will be reviewed. Outcomes of TAVR, percutaneous mitral and tricuspid valve repair, PFO/ASD closure and left atrial appendage closure will be presented. Adjunctive pharmacotherapy for cardiovascular interventions will be addressed. Participants will observe live cases and hear from international experts.

## **Target Audience**

The San Diego Cardiovascular Interventions Symposium has been designed to meet the needs of Interventional Cardiologists, Clinical Cardiologists, Internists, Residents, Fellows in Training, Cath Lab Nurses and Technicians as well as other Allied Healthcare professionals with an interest in the field of cardiology.

## **Learning Objectives**

At the conclusion of this activity, the participants should be able to:

- ❖ Identify the impact of COVID-19 on STEMI care and the field of interventional cardiology
- ❖ Identify new techniques and technologies for CTO, bifurcation and left main PCI
- ❖ Identify the role of various lesion modifications/atherectomy techniques prior to coronary stenting
- ❖ Identify the utility of adjunctive hemodynamic support to facilitate complete coronary revascularization and high-risk PCI
- ❖ Identify the advantages and utility of robotic PCI
- ❖ Review the data and indications for percutaneous VADs in severe decompensated CHF and cardiogenic shock
- ❖ Review the contemporary data and indications for TAVR and new structural heart interventional procedures
- ❖ Identify the role of left atrial appendage closure and percutaneous mitral valve repair
- ❖ Identify optimal oral and intravenous antiplatelet therapy for PCI
- ❖ Review optimal utilization of FFR, IVUS, and OCT in reducing inappropriate PCI
- ❖ Identify appropriate patients and approaches for peripheral vascular interventions
- ❖ Identify occupational hazards of interventional cardiology and strategies to reduce radiation association risk

## **Practice Gaps**

- ❖ PRACTICE GAP I: DELAY IN TREATMENT OF CARIOGENIC SHOCK AND ASSOCAITED HIGH MORTALITY
- ❖ PRACTICE GAP II: DELAY IN TREATMENT OF CARDIOVASCULAR DISEASES AND STEMI DURING THE COVID-19 PANDEMIC DUE TO POORLY UNDERSTOOD IMPLICATIONS OF THE CORONAVIRUS ON CARDIOVASCULAR DISEASE
- ❖ PRACTICE GAP III: UNDER TREATMENT OF CHRONIC TOTAL OCCLUSIONS, AND HIGH-RISK COMPLEX LESIONS DUE TO LACK OF EXPOSURE TO NEW TECHNIQUES AND DATA
- ❖ PRACTICE GAP IV: UNDERUTILIZATION OF HEMODYNAMIC SUPPORT FOR ADVANCED HEART FAILURE AND HIGH-RISK PCI
- ❖ PRACTICE GAP V: LACK OF UNDERSTANDING OF OCCUPATIONAL HAZARDS DURING PCI, RISK OF GEOGRAPHICAL MISS AND POTENTIAL BENEFITS OF ROBOTICS IN THE CATH LAB
- ❖ PRACTICE GAP VI: UNDERUTILIZATION OF NEW INNOVATIONS AND MEDICAL THERAPIES FOR STRUCTURAL HEART INTERVENTIONS

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## **PROGRAM AGENDA**

**FRIDAY, AUGUST 19, 2022**

**7:15 am**      **BREAKFAST AND REGISTRATION**  
*Pacifica Ballroom*

**8:00 am**      **Welcome and Introduction**  
*Ehtisham Mahmud, MD*

### **COMPLEX AND HIGH-RISK INTERVENTIONAL PROCEDURES I**

**Moderator:** *Ori Ben-Yehuda, MD*

**8:05 am**      **Complex Hemodynamically Assisted PCI: Status in 2022 and Future Directions**  
*Ehtisham Mahmud, MD*

**8:15 am**      **Chronic Total Occlusion Revascularization: Technique and Outcomes**  
*Mitul P. Patel, MD*

**8:25 am**      **Intravascular Imaging is Mandatory for Optimal PCI Outcomes?**  
*Ryan D. Madder, MD*

**8:35 am**      **Refractory Angina: New Insights and Therapies**  
*Timothy D. Henry, MD*

**8:45 am**      **Coronary Calcification: Intravascular Lithotripsy Has Revolutionized Care**  
*Robert F. Riley, MD*

**9:05 am**      **Q&A / Discussion**

## LIVE CASE #1 and #2

Broadcast Live from Sulpizio Cardiovascular Center at UC San Diego, La Jolla, CA

**Panelists:** Ori Ben-Yehuda, MD; Timothy D. Henry, MD; William Penny, MD; Robert F. Riley, MD; Daniel Walters, MD

- 9:15 am     **CASE #1: Complex PCI**  
                  **Operators:** Lawrence Ang, MD; Alayn Govea, MD; Ehtisham Mahmud, MD
- 10:00 am     **CASE #2: Complex PCI**  
                  **Operators:** Belal Al-Khiami, MD; Abdullah Almasoud, MD; Mitul P. Patel, MD
- 10:45 am     **BREAK / VISIT EXHIBITS**

## COMPLEX AND HIGH-RISK INTERVENTIONAL PROCEDURES II

**Moderator:** William Penny, MD

- 11:00 am     **KEYNOTE LECTURE 1: Evolution of Primary PCI for STEMI Care and Contemporary Approaches**  
                  *Timothy D. Henry, MD*
- 11:20 am     **Left Main and Bifurcation PCI**  
                  *Ehtisham Mahmud, MD*
- 11:30 am     **Hemodynamic Support for High-Risk PCI**  
                  *Aditya Bharadwaj, MD*
- 11:40 am     **Approach to Complex Coronary Interventions in Small Vessels**  
                  *Rajiv Jauhar, MD*
- 11:50 am     **Treatment of STEMI Patients During the COVID-19 Pandemic: Lessons from NACMI**  
                  *Timothy D. Henry, MD*
- 12:00 pm     **LUNCH / VISIT EXHIBITS**
- 12:30 pm     **KEYNOTE LECTURE 2: Cardiogenic Shock Initiative: A National Paradigm Shift**  
                  *William W. O'Neill, MD*

## INTERVENTIONAL ROBOTICS

**Moderator:** Giora Weisz, MD

- 1:00 pm     **Robotic PCI: First-in-Man to Remote PCI**  
                  *Ryan D. Madder, MD*
- 1:10 pm     **Robotics: Complex Coronary and Peripheral Interventions**  
                  *Ehtisham Mahmud, MD*
- 1:20 pm     **Robotic Stroke Care: The New Frontier?**  
                  *Ryan D. Madder, MD*
- 1:30 pm     **Incorporating Artificial Intelligence in Clinical Care**  
                  *Eric Adler, MD*
- 1:40 pm     **Q&A / Discussion**

## **LIVE CASE #3 and #4**

**Broadcast Live from Sulpizio Cardiovascular Center at UC San Diego, La Jolla, CA**

**Panelists:** *Timothy D. Henry, MD; Rajiv Jauhar, MD; Ryan D. Madder, MD; William Penny, MD;*

**2:00 pm**      **CASE #3: ROBOTICALLY ASSISTED COMPLEX PCI**  
**Operators:** *Abdullah Almasoud, MD; Lawrence Ang, MD; Ehtisham Mahmud, MD*

**2:45 pm**      **CASE #4: STRUCTURAL HEART INTERVENTION**  
**Operators:** *Alayn Govea, MD; Ajit Raisinghani, MD; Ryan Reeves, MD*

**3:30 pm**      **BREAK / VISIT EXHIBITS**

## **IMAGING, PHYSIOLOGY AND COMPLICATIONS**

**Moderator:** *Lawrence Ang, MD*

**3:45 pm**      **Assessment of Intermediate Coronary Lesions: FFR, iFR or CT-FFR**  
*Lawrence Ang, MD*

**3:55 pm**      **Complications of High-Risk PCI: Management Approaches**  
*Mitul P. Patel, MD*

**4:05 pm**      **PCI vs. CABG: Does FAME 3 Change the Balance?**  
*Ryan D. Madder, MD*

**4:15 pm**      **Access Site Complications: Use Radial Approach or Ultrasound-Guided Femoral Access**  
*Rajiv Jauhar, MD*

**4:35 pm**      **Optimizing PCI Outcomes with 2<sup>nd</sup> Generation DES**  
*Ryan Reeves, MD*

**4:55 pm**      **Calcified Coronary Lesions: Rotational and Orbital Atherectomy in the Era of IVL**  
*Lawrence Ang, MD*

**5:10 pm**      **Concluding Remarks**  
*Ehtisham Mahmud, MD*

## PROGRAM AGENDA

SATURDAY, AUGUST 20, 2022

7:15 am **BREAKFAST AND REGISTRATION**  
*Pacifica Ballroom*

7:55 am **Welcome and Introduction**  
*Ehtisham Mahmud, MD*

### STRUCTURAL HEART INTERVENTIONS I: CASE-BASED MANAGEMENT

**Moderator:** *Ehtisham Mahmud, MD*

8:00 am **KEYNOTE LECTURE 3: Structural Heart Interventions: Evolutionary Approaches for the Mitral Valve**  
*Ryan Reeves, MD*

8:20 am **Tricuspid Valve Repair and Replacement**  
*Ori Ben-Yehuda, MD*

8:30 am **Adult Congenital Heart Disease Interventions: Percutaneous Approaches**  
*Howaida El-Said, MD, PhD*

8:40 am **Balloon Pulmonary Angioplasty for CTEPH: Challenging Surgery?**  
*Ehtisham Mahmud, MD*

8:50 am **Q&A / Discussion**

9:10 am **Percutaneous Mitral Valve Repair for Functional MR: Do the Heart Failure Specialists Agree?**  
*Eric Adler, MD*

9:20 am **Left Atrial Appendage Occlusion: Will it Replace the Anticoagulant Option?**  
*Jonathan C. Hsu, MD*

9:30 am **PFO and ASD Closure: Use Next Generation ICE and Conscious Sedation**  
*Ryan Reeves, MD*

9:40 am **Unloading the Left Atrium in Heart Failure: Novel Approaches**  
*Ehtisham Mahmud, MD*

9:50 am **Q&A / Discussion**

10:10 am **BREAK / VISIT EXHIBITS**

### STRUCTURAL HEART INTERVENTIONS II: CASE-BASED MANAGEMENT

**Moderator:** *Ryan Reeves, MD*

10:30 am **KEYNOTE LECTURE # 4: Top 10 Lessons I Have Learned Over 15 Years of Doing TAVI**  
*Raj Makkar, MD*

11:00 am **TAVR Unload: Rationale and Early Experience**  
*Ori Ben-Yehuda, MD*

**11:20 am**     **Moderate Sedation and Early Discharge After TAVR: What's Holding Us Back?**  
*Rajiv Jauhar, MD*

**11:30 am**     **Q&A / Discussion**

**12:00 pm**     **LUNCH / VISIT EXHIBITS**

## **INTERVENTIONAL PHARMACOTHERAPY: CASE-BASED MANAGEMENT**

**Moderator:** *Mitul P. Patel, MD*

**1:00 pm**     **Bivalirudin Saves Lives Regardless of Access Site**  
*Lawrence Ang, MD*

**1:10 pm**     **Intravenous ADP Antagonist for PCI**  
*Mitul P. Patel, MD*

**1:20 pm**     **Off Label and Dedicated Devices for TAVI in Aortic Regurgitation**  
*Raj Makkar, MD*

**1:30 pm**     **Duration of Oral Antiplatelet Therapy After Complex PCI: Long-Term DAPT**  
*William Penny, MD*

**1:40 pm**     **Q&A / Discussion**

**2:00 pm**     **KEYNOTE LECTURE #5: Novel Approaches to Peripheral Artery Disease: Atherectomy and R2P**  
*Mitul P. Patel, MD*

**2:20 pm**     **Carotid Stenting is Back: Updated CMS Guidelines**  
*Ehtisham Mahmud, MD*

**2:30 pm**     **Acute Limb Ischemia After a Catheterization Procedure: Management**  
*Belal Al-Khiami, MD*

**2:40 pm**     **How Has Peripheral IVL Impacted the TAVR Practice?**  
*Ryan Reeves, MD*

**2:50 pm**     **Q&A / Discussion**

**3:00 pm**     **Concluding Remarks**  
*Ehtisham Mahmud, MD*

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## PLANNING COMMITTEE & FACULTY / PRESENTER LIST

### Course Director, UC San Diego Health, La Jolla, CA

**Ehtisham Mahmud, MD, FACC, MSCAI**

Edith and William Perlman Chair of Cardiology  
Professor and Division Chief, Cardiovascular Medicine  
Executive Director, Sulpizio Cardiovascular Center-Medicine

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### Planning Committee, UC San Diego Health, La Jolla, CA

**Lawrence Ang, MD, FSCAI**

Associate Professor of Medicine  
Interventional Cardiology

**Ori Ben-Yehuda, MD, FACC**

Professor of Medicine

**Mitul P. Patel, MD, FACC, FSCAI**

Clinical Professor of Medicine  
Director of Endovascular Interventions,  
Cardiovascular Institute

**Ryan Reeves, MD, FACC, FSCAI**

Associate Professor of Medicine  
Director, Interventional Cardiology Fellowship  
Training Program

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### Faculty, UC San Diego Health, La Jolla, CA

**Eric Adler, MD**

Professor of Medicine

**Belal Al-Khiami, MD, FACC, FSCAI**

Assistant Professor of Medicine

**Abdullah Almasoud, MD**

CHIP Fellow

**Howaida El-Said, MD, PhD, FACC**

Professor of Pediatric Cardiology  
Adult Congenital Heart Certified  
Director, Cardiac Cath Lab  
UCSD/Rady Children's Hospital

**Alayn Govea, MD**

Interventional Cardiology Fellow

**Jonathan C. Hsu, MD, MAS, FACC, FAHA, FHRS**

Associate Professor of Medicine  
Electrophysiology

**William Penny, MD, FSCAI**

Professor of Medicine  
Director, Catheterization Laboratory  
San Diego VA Medical Center

**Ajit Raisinghani, MD**

Professor of Medicine  
Sulpizio Cardiovascular Center

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### Guest Faculty

**Aditya Bharadwaj, MD**

Associate Professor of Medicine  
Loma Linda University  
Loma Linda, California

**Raj Makkar, MD, FACC**

VP, Cardiovascular Innovation and Intervention  
Cedars-Sinai Medical Center  
Los Angeles, California

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**Timothy D. Henry, MD, FACC, MSCAI**  
Medical Director, The Carl and Edyth Lindner  
Center for Research and Education  
The Christ Hospital Health Network  
Cincinnati, Ohio

**William W. O'Neill, MD, FACC**  
Medical Director, Center for Structural Heart  
Disease  
Henry Ford Hospital  
Detroit, Michigan

**Rajiv Jauhar, MD, FACC, FSCAI**  
Chief of Cardiology  
North Shore University Hospital at Manhasset  
Northwell Health  
Manhasset, New York

**Robert F. Riley, MD, MS, FACC, FAHA, FSCAI**  
Director of Interventional Cardiology &  
Complex Coronary Therapeutics  
Overlake Medical Center & Clinics  
Bellevue, Washington

**Ryan D. Madder, MD, FACC, FSCAI**  
Section Chief, Interventional Cardiology  
Director, Cardiac Cath Lab  
Spectrum Health  
Grand Rapids, Michigan

**Daniel Walters, MD**  
Interventional Cardiologist  
South Orange County Cardiology Group  
Laguna Hills, California

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### **Disclosure Summary**

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Name	Name of Ineligible Company	Nature of Relevant Relationship
<b>Eric Adler, MD</b>	Abbott, Rescue Therapeutics	Advisor
	Abiomed	Speaker's Bureau
	Abiomed, Cytokinetics, Medtronic	Consultant
	Rocket, Lexeo, Rescue Therapeutics	Institutional Research Funding / Investigator Role
	Rocket, Lexeo	Receipt of Intellectual Property Rights/Patent Holder
	Lexeo	Researcher, Independent Contractor/ Contracted Research, Stock Interest, Royalties
<b>Lawrence Ang, MD</b>	OpSens Medical	Other - Honorarium
<b>Ori Ben-Yehuda, MD</b>	Cardiovalve, Inc	Stock Interest, Consultant
<b>Aditya Bharadwaj, MD</b>	Abiomed, Cardiovascular Solutions Inc.	Consultant
	Abiomed	Speaker's Bureau, Institutional Research Funding / Investigator Role
	Cardiovascular Solutions Inc.	Advisor
<b>Jonathan Hsu, MD, MAS</b>	Abbott, Acutus Medical, Biotronik, Biosense-Webster, Boston Scientific, iRhythm Medical, Janssen Pharmaceuticals, Medtronic, Zoll Medical	Consultant
	Acutus Medical, Vektor Medical	Stock Interest
	Biosense-Webster, Biotronik, Bristol-Myers Squibb, Pfizer	Researcher
<b>Ryan D. Madder, MD</b>	Corindus, A Siemens Healthineers Company	Advisor, Consultant, Researcher, Speakers Bureau
	Infraredx	Consultant, Researcher, Speakers Bureau
	Spectrawave	Advisor
<b>Ehtisham Mahmud, MD</b>	Abbott Vascular, Corindus, CSI	Institutional Research Funding / Investigator Role
	Abiomed, Medtronic	Consultant

<b>Raj Makkar, MD</b>	Abbott, Edward Lifesciences	Institutional Research Funding / Investigator Role
	Cedars-Sinai Medical Center	Employment
	Cordis, Medtronic	Consultant
<b>William O'Neill, MD</b>	Abiomed, Edwards Lifesciences, Zoll	Consultant
<b>Mitul P. Patel, MD</b>	Abbott Vascular, Chiesi, Medtronic, Shockwave Medical	Advisor, Consultant
	Abiomed, Boston Scientific	Institutional Research Funding / Investigator Role
	Cardiovascular Systems Inc., Terumo	Consultant
<b>Ryan Reeves, MD</b>	Avicena, Maxwell Biomedical, Cardiovascular Research Foundation	Consultant
	Cardiovascular Research Foundation	Researcher
<b>Robert F. Riley, MD</b>	Abbott Vascular, Boston Scientific, Shockwave Medical	Consultant, Speakers Bureau

*The following have no relevant financial relationships to disclose:*

- Belal Al-Khiami, MD
- Abdullah Almasoud, MD
- Howaida El-Said, MD, PhD
- Alayn Govea, MD
- Timothy Henry, MD
- Rajiv Jauhar, MD
- William Penny, MD
- Ajit Raisinghani, MD
- Daniel Walters, MD

Persons in control of content of this educational activity who are not specifically identified by name above, such as (but not limited to) course directors, faculty, CME staff, planners, editorial staff, peer reviewers, and CME committee reviewers do not have any relevant financial relationships.

This educational activity may contain discussion of unlabeled and/or investigational uses of agents that are not approved by the FDA. Please consult the prescribing information for each product. The views and opinions expressed in this activity are those of the faculty and do not necessarily reflect the views of the University of California San Diego School of Medicine.

#### **Accreditation Statement**

This activity has been planned and implemented in the accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of California San Diego School of Medicine and Gaffney Events. The University of California San Diego School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

### **Physician Continuing Education**

The University of California San Diego School of Medicine designates this live activity for a maximum of **13.75 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### **Credit for Nurses**

For the purpose of recertification, the American Nurses Credentialing Center accepts AMA PRA Category 1 Credits™ issued by organizations accredited by the ACCME. Nurses who attend an activity certified for Category 1 credit can complete the continuing education hours section of the ANCC Professional Development Record to document the courses attended and the hours obtained.

#### **PARTICIPATION REQUIREMENTS AND OBTAINING CREDIT CERTIFICATE**

1. Review the Course Syllabus ([www.SDInterventions.com/accreditation](http://www.SDInterventions.com/accreditation)) prior to engaging in this CME activity.
2. Check-in at Registration Desk, pick-up badge and scan each day to record attendance.
3. Attend accredited sessions.
4. Complete the *Course Evaluation Survey* following the conclusion of this activity to claim credit.
5. The survey will be available beginning Sunday, August 21, 2022  
Login to: [https://www.surveymonkey.com/r/SDCI\\_2022](https://www.surveymonkey.com/r/SDCI_2022) or scan the **QR code** below.
6. After completing the survey, your certificate will be emailed to you within 10 days.
7. If you have any questions, contact [cme@gaffneyevents.com](mailto:cme@gaffneyevents.com).



### **Cultural and Linguistic Competency**

California Assembly Bill 1195 requires continuing medical education activities with patient care components to include curriculum in the subjects of cultural and linguistic competency. It is the intent of the bill, which went into effect on July 1, 2006, to encourage physicians and surgeons, CME providers in the state of California, and the Accreditation Council for Continuing Medical Education to meet the cultural and linguistic concerns of a diverse patient population through appropriate professional development. The planners, speakers and authors of this CME activity have been encouraged to address issues relevant in their topic area. In addition, a variety of resources are available that address cultural and linguistic competency, some of which are included in your syllabus or handout materials. Additional resources and information about AB1195 can be found on our website at <http://cme.ucsd.edu>.

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### **EXHIBITOR ACKNOWLEDGEMENT**

We would like to acknowledge the following companies and organizations for exhibiting at this conference.

<i>Abbott</i>	<i>Chiesi, USA</i>	<i>Philips</i>
<i>Abiomed, Inc</i>	<i>Cordis</i>	<i>Shockwave Medical</i>
<i>AstraZeneca</i>	<i>Edwards Lifesciences</i>	<i>Teleflex</i>
<i>BIOTRONIK</i>	<i>Medtronic</i>	<i>Zoll Medical</i>
<i>Boston Scientific Corporation</i>	<i>Penumbra</i>	
<i>Cardiovascular Systems Inc.</i>	<i>Pfizer</i>	

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*Thank you for your participation in the San Diego Cardiovascular Interventions Symposium. We look forward to your feedback in the Speaker and Course Evaluation Survey and hope to see you again next year!*

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