Penn Medicine
Continuing Medical and Interprofessional Education

Department of Surgery, Division of Cardiovascular Surgery
at the University of Pennsylvania
presents

4TH NORTH AMERICAN
Aortic Valve Repair Symposium
A C M E - A C C R E D I T E D  S Y M P O S I U M

Friday-Saturday, September 13-14, 2019
Sofitel Philadelphia
120 South 17th Street
Philadelphia, PA 19103

In Conjunction With

Endorsed by:
The Society of Thoracic Surgeons

Course Director:
Joseph E. Bavaria, MD

Co-Directors:
Prashanth Vallabhajosyula, MD, MS
Munir Boodhwani, MD, MMSc
John Augoustides, MD

www.avrepairsymposium.org
The purpose of this educational activity is to provide in-depth analysis and procedural understanding of both bicuspid and 3-cusp aortic valve repair and valve-sparing aortic root surgery. Additionally, this symposium will provide technical and conceptual pearls related to aortic valve repair. Faculty presentations will constitute deep-dive sessions addressing valvular and aortic root pathology in the context of aortic valve preservation, with discussion panels focusing on the technical nuances and detailed differences in aortic valve repair and valve-sparing aortic root techniques. Live on-tape sessions will be complemented with comprehensive didactic coverage of the clinical, technical, and imaging tools required to develop a successful aortic valve repair program.

Learning Objectives
Upon completion of the activity, the participant should be able to:
- Evaluate the aortic root complex to plan for aortic valve repair
- Review techniques of bicuspid and tricuspid aortic valve repair
- Use echocardiography to plan for aortic valve repair
- Perform Echocardiographic and physiologic evaluation of aortic insufficiency after valve repair
- Identify techniques for performing valve-sparing root reimplantation
- Describe clinical and echocardiographic surveillance after aortic valve repair

Hosting Department
The 4th North American Aortic Valve Repair Symposium is hosted by the Department of Surgery, Division of Cardiovascular Surgery at the University of Pennsylvania.
Registration Fees

The registration fees for the 4th North American Aortic Valve Repair Symposium are the following: $850 for Physicians and Industry; $700 for Physicians who are members of the Society of Thoracic Surgeons (STS); $300 for Healthcare Professionals, Residents and Fellows.

The registration fee includes attendance to the symposium, a course booklet, access to view the presentation slides online, continental breakfast, mid-morning and afternoon breaks and a working lunch on both days. All attendees will also receive a complimentary flash drive.

If you are registering with a credit card, please register online at https://upenn.cloud-cme.com/avrs2019. You must log-in with your Penn ID or your email and password or if you do not already have a profile, you must create one before you can register for an event. We cannot accept faxed or mailed registration forms with credit card information. To pay by check, complete the registration form and mail it in with your check. Please see the registration form for mailing information. Please note: mailed registrations can take up to 5-10 business days before they are received. All registrations will be confirmed by email as long as your registration is received no later than August 30, 2019.

Cancellation and Refund Policy

In order to process refunds for course withdrawals, cancellations must be received in writing by August 30, 2019 (subject to a service charge of 10% of the registration fee but not less than $15.00). No refunds will be issued after August 30, 2019. The University reserves the right to cancel or postpone any course due to unforeseen circumstances.

In the event of cancellation or postponement, the University will refund registration fees but is not responsible for related costs or expenses to participants, including cancellation fees assessed by hotels, airlines, and travel agencies.

Meeting Location

The 4th North American Aortic Valve Repair Symposium will be held Friday-Saturday, September 13-14, 2019 at the Sofitel Philadelphia, 120 South 17th Street, Philadelphia, PA 19103. For more information on Sofitel Philadelphia, please visit their website at: http://www.sofitel-philadelphia.com/en or to reach them directly, please call 215-569-8300.

The Sofitel Philadelphia is offering a special group rate (single or double-occupancy) of $269.00 per night. These rates do not include the 15.5% sales and occupancy tax. The special room rate is only available until Thursday, August 15, 2019 or until the block has filled (whichever comes first). Rates are subject to availability once the room block has filled. Please call the Sofitel Philadelphia directly at 215-569-8300 and identify yourself as a participant of the “Penn Medicine 4th AVRS 2019” in order to receive the discounted overnight room rate. Please visit http://tinyurl.com/h38q3gc in order to make your reservations online.

Parking: The Sofitel Philadelphia offers valet-only parking. The daily parking rate is $36. For guests staying overnight Monday-Thursday, the rate is $50.24 and guests staying overnight Friday-Saturday, the rate is $45.33. The symposium will not validate or discount any parking expenses.
COURSE DIRECTOR
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HONORARY SPEAKERS
Gebrine El Khoury, MD
Professor of Surgery
Division of Cardiothoracic Surgery
Cliniques Universitaires Saint-Luc (UCL)
Bruxelles, Belgium

Paul Fedak, MD
Professor, Department of Cardiac Sciences
Cardiac Surgeon, Foothills Medical Centre, Alberta Health Services
Director, Marlene and Don Campbell Translational Research Laboratory
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GUEST SPEAKERS
Talal Al-Atassi, MD, CM,
MPH, FRCSC
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University of Ottawa Heart Institute
Ottawa, Ontario, Canada

Victor A. Ferrari, MD
Professor of Medicine
Penn Medicine
University of Pennsylvania
Philadelphia, PA

Michael Fischbein, MD
Associate Professor of Thoracic and Cardiovascular Surgery
University of Florida
Miami, Florida

Ismail El-Hamamsy, MD, PhD,
FRCSC
Cardiac Surgeon
Division of Cardiac Surgery
Montreal, Quebec, Canada

AORTIC FELLOWS
Roland Assi, MD
Fellow in Cardiothoracic Surgery
Penn Medicine
Philadelphia, PA

Joshua Grimm, MD
Fellow in Cardiothoracic Surgery
Penn Medicine
Philadelphia, PA

Services for the Disabled If special arrangements are required for an individual with a disability to attend this meeting, please contact the Office of Continuing Medical and Interprofessional Education no later than August 30, 2019 at 215-898-8005.
# AGENDA

## DAY 1 – Friday, September 13, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>6:45 AM – 7:45 AM</td>
<td>Registration &amp; Continental Breakfast</td>
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<tr>
<td>7:40 AM – 7:45 AM</td>
<td>Opening the Session: Critical Challenges Regarding AI Worldwide Joseph Bavaria, MD</td>
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<tr>
<td>7:45 AM – 8:00 AM</td>
<td>Opening remarks: Overview of the Symposium Joseph E. Bavaria, MD &amp; Munir Boodhwani, MD</td>
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### MORNING SESSION 1

**AORTIC ROOT COMPLEX – ANATOMIC AND PHYSIOLOGIC PRINCIPLES GUIDING VALVE REPAIR**

**Moderators:** TBD

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00 AM – 8:15 AM</td>
<td>Aortic Valve Anatomy and Function Karen Kim, MD</td>
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<tr>
<td>8:15 AM – 8:30 AM</td>
<td>Threshold for Surgical Intervention in Ascending Aortic Aneurysms: Comparison of American, Canadian, and European Guidelines Thoralf Sundt, MD</td>
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<tr>
<td>8:30 AM – 8:45 AM</td>
<td>MRI Versus Echo in Aortic Insufficiency: What is the Gold Standard in Quantification? Paul Fedak, MD &amp; Victor Ferrari, MD</td>
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<td>8:45 AM – 9:00 AM</td>
<td>Natural History of Aortic Insufficiency and Guidelines for Medical and Surgical Management Robert Bonow, MD</td>
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<tr>
<td>9:00 AM – 9:20 AM</td>
<td>Panel Discussion</td>
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<tr>
<td>9:20 AM – 9:40 AM</td>
<td>Repair Focused Echocardiographic Assessment of the Aortic Valve and Root A. Stephane Lambert, MD &amp; Benjamin Sohmer, MD</td>
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<tr>
<td>9:40 AM – 10:00 AM</td>
<td>Mechanisms of Aortic Insufficiency: Implications for Valve Repair Munir Boodhwani, MD, MMSc, FRCSC</td>
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<tr>
<td>10:00 AM – 10:20 AM</td>
<td>Debate: 45 Year Old Active Male With Severe Asymptomatic AI: Surgery or Watchful Waiting? Moderator: Munir Boodhwani, MD Pro Surgery: Joseph Bavaria, MD Watchful Waiting: Robert Bonow, MD</td>
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<tr>
<td>10:20 AM – 10:40 AM</td>
<td>Break</td>
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## MORNING SESSION 2

**SURGICAL APPROACHES TO AORTIC ROOT/VALVE DISEASE**

**Moderators:** TBD

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:40 AM – 11:00 AM</td>
<td>Introduction to Aortic Valve Repair – What’s in the Surgeon’s Armamentarium? Joseph Bavaria, MD</td>
</tr>
<tr>
<td>11:00 AM – 11:20 AM</td>
<td>Valve Sparing Root Reimplantation Technique – Step-by-step Approach Gebrine El Khoury, MD</td>
</tr>
<tr>
<td>11:40 AM – 12:00 AM</td>
<td>Annuloplasty Techniques for Isolated Aortic Valve Repair Thoralf Sundt, MD</td>
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<tr>
<td>12:00 PM – 12:30 PM</td>
<td>Focused Session: Learn from the Experts: Case Presentations Panel members: Gebrine El Khoury, MD, Hans-Joachim Schäfers, MD, Chad Hughes, MD, Alberto Pochettino, MD, Michael Fischbein, MD, Munir Boodhwani, MD</td>
</tr>
</tbody>
</table>

- Case 1: Severe AI, VAJ dilated, aortic root 4.1 cm
- Case 2: Marfan patient, severe root dilation, no AI
- Case 3: Cusp prolapse with fenestrations
- Case 4: Type 1A Ascending aortic aneurysm and moderate AI, non-dilated VAJ
  1) Root reimplantation or repair with external ring
  2) Remodeling versus reimplantation
  3) Valsalva versus straight tube graft

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<tr>
<td>12:30 PM – 12:45 PM</td>
<td>Panel Discussion</td>
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### AFTERNOON SESSION 1

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1:00 PM – 2:15 PM</td>
<td>Working Lunch With Debate</td>
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<td>Moderators: Munir Boodhwani, MD &amp; Prashanth Vallabhabosyula, MD, MS</td>
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<tr>
<td></td>
<td>Panel: Joseph Bavaria, MD, Thoralf Sundt, MD Robert Bonow, MD, Hans-Joachim Schäfers, MD Gebrine El Khoury, MD</td>
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<td></td>
<td>Debate: Annular ectasia in BAV repair, how best to manage? Remodel with annular ring, external and STJ ring, VSRR, internal annular ring?</td>
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<td>Debate: Debate on factors influencing repair versus replacement – consider thresholds of age, low EF, enlarged left ventricle</td>
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<td>Debate: respect BAV geometry versus forced geometry, and introduction to the new anatomical classification by the El Khoury group</td>
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2:15 PM – 2:30 PM | Break |
DAY 2 — Saturday, September 14, 2019

7:00 AM – 7:45 AM  Registration/Breakfast
7:45 AM – 8:00 AM  Opening Remarks, Answer Questions on Previous Day’s Session With Panel of Experts

MORNING SESSION 1

BICUSPID AORTIC VALVE REPAIR – MASTERCLASS SESSION
Moderators: TBD?

8:00 AM – 8:20 AM  Anatomy and Classification of Bicuspid Aortic Valve Insufficiency
Laurent De Kerchove, MD

8:20 AM – 8:40 AM  An Algorithmic Approach to BAV Decision Making (± Aneurysm)
Joseph E. Bavaria, MD

8:20 AM – 8:40 AM  BAV Repair Techniques for Type 0, I Valves
Moderator: Joseph Bavaria, MD
Case presentations: Prashanth Vallabhajosyula, MD & George Arnaoutakis, MD
1) Type 0
2) Type I

8:40 AM – 8:55 AM  BAV Root Reimplantation – Concepts and Case Presentation [Live-in-box]
Munir Boodhwani, MD

Hans-Joachim Schäfers, MD

9:10 AM – 9:25 AM  BAV Repair with External Subannular Aortic Ring [Live-in-box]
Joseph Bavaria, MD

9:25 AM – 9:40 AM  BAV Repair With Internal Subannular Aortic Ring [Live-in-box]
Chad Hughes, MD

9:40 AM – 10:00 AM  Panel Discussion
10:00 AM – 10:15 AM  Break
10:15 AM – 10:20 AM  Introduction to Honorary Speaker
10:20 AM – 10:45 AM  HONORARY LECTURE
30-year Experience with Bicuspid Aortic Valve Repair and Root Reimplantation Techniques
Gebrine El Khoury, MD

10:45 AM – 11:00 AM  Mini-Debate: Symmetric or Asymmetric Reconstruction of the BAV
Joseph Bavaria, MD, Michael Fischbein, MD, Munir Boodhwani, MD
11:00 AM – 11:20 AM  Alternative Techniques in BAV Repair
Thomas Gleason, MD

11:20 AM – 11:30 AM  Unicuspid Aortic Valve Repair: Should we do it?
Munir Boodhwani, MD

11:30 AM – 11:45 AM  Bentall Aortic Root Procedure – How I do it and Review of the Mayo Clinic Experience
Alberto Pochettino, MD

11:45 AM – 12:00 PM  Conduit Choice in BAV Root Reimplantation/Remodeling – 2 Schools of Thought: Straight Versus Valsalva grafts
Michael Fischbein, MD

12:00 PM – 12:15 PM  Panel Discussion

12:15 PM – 12:30 PM  Pick-up Lunch

AFTERNOON SESSION 1

REPAIR FAILURES

12:30 PM – 1:30 PM  Working Lunch
Controversial and Repair Failure Cases – Audience asks the experts questions about decision making and avoiding pitfalls
Moderators: Munir Boodhwani, MD, Joseph Bavaria, MD, Stephane Lambert, MD, John Augoustides, MD, Gebrine El Khoury, MD, Chad Hughes, MD, Alberto Pochettino, MD

· TAV Repair Failure –
  Roland Assi, MD & John Augoustides, MD

· BAV Repair Failure –
  Joshua Grimm, MD & John Augoustides, MD

· Redo Valve Repair – Have we Gone too far? –
  Munir Boodhwani, MD &
  A. Stephane Lambert, MD

· Failure Repair From Internal Ring Placement –
  Prashanth Vallabhajosyula, MD

1:30 PM – 1:45 PM  Break

AFTERNOON SESSION 2

REGISTRIES, OUTCOMES WITH AORTIC VALVE REPAIR EXPERIENCE
Moderators: TBD?

1:45 PM – 2:05 PM  Outcomes in BAV Repair for Different Root Stabilization Techniques
Derek Brinster, MD

2:05 PM – 2:25 PM  Outcomes Based Arguments for Preservation Versus Resection for BAV Insufficiency – Is the Failing Bicuspid Valve a Pathologic Valve?
Chad Hughes, MD

2:25 PM – 2:45 PM  Outcomes With Root Remodeling Versus Reimplantation
Maral Ouzounian, MD, PhD

2:45 PM – 3:05 PM  Emerging Role of TAVR in Treating Aortic Insufficiency
Talal Al-Atassi, MD

3:05 PM – 3:25 PM  Panel Discussion

3:25 PM  Closing Remarks
Joseph Bavaria, MD
4TH NORTH AMERICAN
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Academic Degree

Medical Specialty

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City State Zip

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Registration Fee (pre-payment is required to be officially registered)

□ $850.00 for Physicians and Industry
□ $700.00 for Physicians who are members of the Society of Thoracic Surgeons (STS)
□ $300.00 Healthcare Professionals, Residents and Fellows

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  150 Anatomy/Chemistry Building, 3620 Hamilton Walk
  Philadelphia, PA 19104-6061

• Do not include any credit card information on the registration form or email any credit card information

Please Note: Walk-in registrants must bring payment to the program. Seating may be limited for walk-in registrants.