



Penn Medicine

Continuing Medical and
Interprofessional Education

The Mark E. Josephson Twenty-Seventh Annual

State-of-the-Art Arrhythmia Symposium

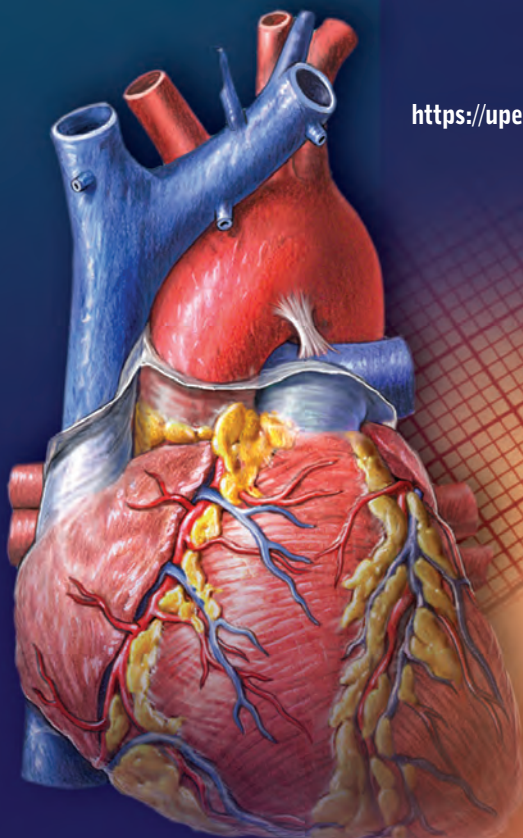
**Arrhythmia Diagnosis & Treatment Standards 2019
and Leonard N. Horowitz, MD
Memorial Lecture**

A CME/CNE-ACCREDITED SYMPOSIUM

Saturday, September 7, 2019


Hilton Philadelphia at Penn's Landing
201 South Christopher Columbus Blvd
Philadelphia, PA 19106

<https://upenn.cloud-cme.com/arrhythmia2019>



Co-sponsored with:





**The Department of Medicine, Division of Cardiology,
Electrophysiology Program**

At the University of Pennsylvania Health System

Presents

PROGRAM OVERVIEW & TARGET AUDIENCE

This program is designed to provide electrophysiologists, cardiologists, internists, and associated professionals with state-of-the-art information on invasive and non-invasive electrocardiographic and electrophysiologic tools used in the diagnosis, evaluation, and treatment of cardiac rhythm disorders. Attendees of the symposium will develop an understanding of the best practice approaches to diagnosing and treating patients with atrial fibrillation, other atrial and ventricular tachycardias, and risk factors of sudden death.

This symposium pays tribute to the scientific and clinical legacy of Dr. Mark E. Josephson who served as a mentor to many of the faculty.

The symposium is coupled with the Leonard N. Horowitz, MD Memorial Lecture. This annual lecture serves as an ongoing salute to a colleague and friend who dedicated his much too brief career successfully advancing the field of arrhythmia management.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the differences in the various oral anticoagulants including appropriate use, dosing, risks, and contraindications.
- Identify the value of risk factor modification to improve atrial fibrillation outcome.
- Explain use and value of new techniques and technologies employed for complex EP device and ablation cases.
- Discuss the use of genetic testing for patients and family members of patients with inherited arrhythmia syndromes.
- Review key changes in new arrhythmia and device management guidelines.
- Describe the monitoring techniques available for arrhythmia detection and appropriate patient selection.
- Discuss new pacing indications and techniques and ways to optimize device programming.
- Identify ECG clues to detect patients at risk for sudden death.
- Describe the complex interaction between patients with heart failure and arrhythmias and principles of treatment including ablation and device therapy.
- Explain the long-term impact of atrial fibrillation on cognitive function.

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A CME/CNE-Accredited Symposium

SCIENCE

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Hilton Philadelphia at Penn's Landing
201 South Christopher Columbus Blvd.
Philadelphia, PA 19106
215-928-1234

Hosting Department

The Mark E. Josephson Twenty-Seventh Annual State-of-the-Art Arrhythmia Symposium is hosted by the Department of Medicine, Division of Cardiology, Electrophysiology Section, University of Pennsylvania Health System.

Accreditation



In support of improving patient care, Penn Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide

continuing education for the healthcare team.

Designation of Credit

Physicians: Penn Medicine designates this live activity for a maximum of 7.75 *AMA PRA Category 1 Credits*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurses: This program provides 7.75 contact hours.

Physician Assistants: AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*[™] from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 7.75 Category 1 credits for completing this activity.

Certificates and Transcripts: After the conference has concluded, all participants will receive a follow-up email with instructions and a link. Once participants submit the request for credit, the earned credits will be available for viewing on a transcript and certificates will be available for printing at <https://upenn.cloud-cme.com>. Please note that the individual certificate will not be mailed.

Registration Fees

The registration fees for *The Mark E. Josephson Twenty-Seventh Annual State-of-the-Art Arrhythmia Symposium* are \$120 for physicians and industry employees, \$100 for nurse practitioners, physician assistants, nurses and healthcare professionals, and \$65 for residents, fellows and retired physicians. Registration fees for Penn Medicine & affiliated employees are \$100 for physicians, \$65 for nurse practitioners, physician assistants, nurses and healthcare professionals and \$60 for residents, fellows and students. A valid Penn Medicine email address is required to receive the special rate.

The registration fee includes attendance to the symposium, a course booklet and a link to view the presentations online, credit certificate, continental breakfast, mid-morning and afternoon refreshments, lunch, post-symposium reception and garage-only parking at the Hilton Philadelphia at Penn's Landing.

If you are registering with a credit card, please register online at <https://upenn.cloud-cme.com/arrhythmia2019>. 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 25, 2019.

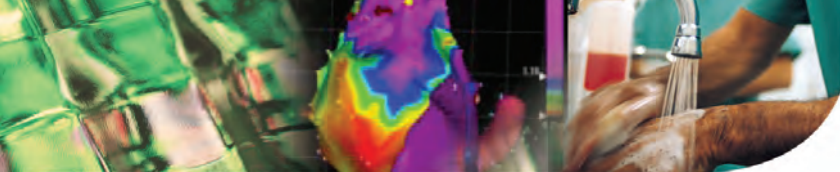
Cancellation and Refund Policy

In order to process refunds for course withdrawals, cancellations must be received in writing by August 25, 2019 (subject to a \$15 service charge). No refunds will be issued thereafter.

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.

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 25, 2019, at 215-898-6400.

Nondiscrimination Statement The University of Pennsylvania values diversity and seeks talented students, faculty, and staff from diverse backgrounds. The University of Pennsylvania does not discriminate on the basis of race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, or status as a Vietnam Era Veteran or disabled veteran in the administration of educational policies, programs or activities; admissions policies; scholarship and loan awards; athletic, or other University administered programs or employment. Questions or complaints regarding this policy should be directed to Executive Director, Office of Affirmative Action and Equal Opportunity Programs, 3600 Chestnut Street, Sansom Place East Suite 228, Philadelphia PA 19104-6106 or 215-898-6993 (Voice) or 215-898-7803 (TDD). www.upenn.edu/affirm-action.



Meeting Location and Parking

The Mark E. Josephson Twenty-Seventh Annual State-of-the-Art Arrhythmia Symposium will take place at the Hilton Philadelphia at Penn's Landing, 201 South Christopher Columbus Boulevard, Philadelphia, PA. The hotel's main number is 215-928-1234. If you need overnight reservations, please call 1-800-233-1234. Please visit the Hilton's website at www.pennslanding.hilton.com for directions and additional information.

The Hilton parking garage is located just past the hotel's main entrance. The parking fee is included in your registration fee. Your parking in the Hilton garage will be validated at the registration desk on the day of the conference.

For information on additional overnight accommodations or what to do or see while you're in Philadelphia, please go to www.gophila.com.

Disclosures

Penn Medicine, Office of Continuing Medical and Interprofessional Education, adheres to the ACCME *Standards for Commercial Support*. Faculty disclosure information will be made available in the conference materials and syllabus. Faculty members are also expected to disclose to participants any discussions of off-label and/or investigational uses of pharmaceutical products within their presentations.

Symposium Director

Francis Marchlinski, MD

*Richard T. and Angela Clark President's Distinguished Professor
Director, Cardiac Electrophysiology
Director, Electrophysiology Laboratory
University of Pennsylvania Health System
Philadelphia, PA*

Guest Faculty

Andrew Costin, MD

*Princeton Medical Group
University Medical Center at Princeton
Princeton, NJ*

Jonathan P. Piccini, MD, MHS

*Associate Professor of Medicine
Duke University Medical Center
Duke Clinical Research Institute
Durham, NC*

Mariell Jessup, MD, FAHA

*Chief Science and Medical Officer
American Heart Association
Dallas, TX*

Stavros Mountantonakis, MD, MBA

*Professor of Cardiology
Director, Cardiac Electrophysiology
Fellowship Program
Lenox Hill Hospital
New York, NY*

Faculty

All faculty are affiliated with the Perelman School of Medicine at the University of Pennsylvania Philadelphia, PA

Jeffrey Arkles, MD

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Cardiac Electrophysiology*

Trevor Bonney, PA-C

*Physician Assistant
Cardiac Electrophysiology*

John Bullinga, MD

*Clinical Associate Professor of Medicine
Director, Cardiac Electrophysiology
Laboratory
Penn Presbyterian Medical Center*

David Callans, MD

*Professor of Medicine
Cardiac Electrophysiology*

Nancy Cash, DNP, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*

Rajat Deo, MD

*Assistant Professor of Medicine
Cardiac Electrophysiology*

Sanjay Dixit, MD

*Professor of Medicine
Director, Electrophysiology Laboratory
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Andrew Epstein, MD

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Pennsylvania Hospital*

Robert Hipp, PA-C, MS, MBA

*Physician Assistant
Cardiac Electrophysiology*

Matthew Hyman, MD, PhD

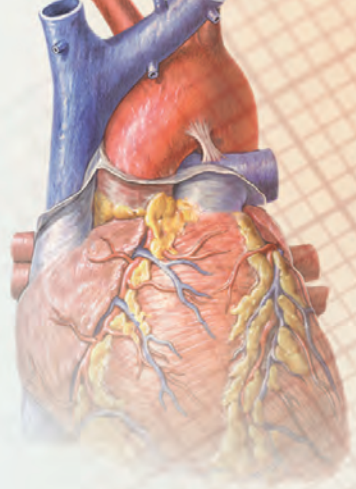
*Assistant Professor of Medicine
Cardiac Electrophysiology*

Ramanan Kumareswaran, MD

*Assistant Professor of Clinical Medicine
Cardiac Electrophysiology*

David Lin, MD

*Associate Professor of Medicine
Cardiac Electrophysiology*



Jeffrey Luebbert, MD

*Clinical Assistant Professor of Medicine
Pennsylvania Hospital*

Nina Mirachi, PA-C

*Physician Assistant
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Tracey Munson, CRNP

*Nurse Practitioner
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Allyson Prasad, CRNP

*Nurse Practitioner
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Cardiac Electrophysiology*

Pasquale Santangeli, MD, PhD

*Assistant Professor of Medicine
Cardiac Electrophysiology*

Robert Schaller, DO

*Assistant Professor of Clinical Medicine
Cardiac Electrophysiology*

Gregory Supple, MD

*Assistant Professor of Clinical Medicine
Co-Director, Electrophysiology
Fellowship Program*

Cory Tschabrunn, PhD

*Director, Translational
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*Physician Assistant
Cardiac Electrophysiology*

Erica Zado, PA-C, FHRS

*Physician Assistant
Cardiac Electrophysiology*

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Saturday, September 7, 2019

AGENDA

7:15 – 7:45 AM

Registration and Continental Breakfast

General Cardiology

Morning Session – 7:45 – 10:50 AM

Moderator: Francis Marchlinski, MD

7:45 – 7:50 AM

Welcome & Introduction

Francis Marchlinski, MD

7:50 – 8:15 AM

Josephson Keynote ECG Lecture

EP-ECG Emergencies: “Burn it in Your Brain”

Andrew Epstein, MD

- Phase 4 infranodal block
- Identifying BBB in the setting of acute MI
- Hyperkalemia
- ECG markers for sudden death risk
- Idiopathic VF triggers

8:15 – 8:50 AM

AF Burden and Cardiovascular Outcomes

Jonathan Piccini, MD, MHS

- 30 seconds of AF to assess ablation efficacy
- 5 minutes, 4 hours, 24 hours – what is too long?
- Burden associated with stroke and heart failure risk
- Best techniques for assessing burden

8:50 – 9:20 AM

Defining Arrhythmia Risk in “Low Risk” Patients

Saman Nazarian, MD, PhD

- Recognizing subtle ECG clues
- Use of imaging
- Role of exercise testing
- Monitoring clues

9:20 – 10:00 AM

Challenging Cases: Improving Management

of Patients with Ventricular Arrhythmias:

Drugs, Devices, Ablation

Moderator: Francis Marchlinski, MD

Panel: Mariell Jessup, MD, Gregory Supple, MD, Robert Schaller, DO, David Callans, MD, Andrew Costin, MD

- When to ablate frequent asymptomatic PVCs
- Amiodarone for sustained ventricular arrhythmias
- Role of LVAD/transplant for ventricular arrhythmias
- Selecting subcutaneous versus transvenous ICD

10:00 – 10:25 AM

Risk Factors for Afib –

Evidence to Support Preventive Therapy

Sanjay Dixit, MD

- Risk factors
- Physiology and pathophysiology for increase in Afib
- Evidence to support the benefit of risk reduction
- Penn AF Care Program

10:25 – 10:50 AM

Improving Cardiac Function with Device Therapy and Ablation

Robert Schaller, DO

- His bundle pacing
- BiV device strategies – what is new?
- Reversal of PVC and Afib induced cardiomyopathy

10:50 – 11:00 Break

11:00 AM – 12:00 PM

Leonard N. Horowitz, MD

Memorial Lecture

Bridging the Gap Between Scientific

Investigation and Clinical Care:

Important Considerations

Mariell Jessup, MD

12:00 – 1:00 PM Lunch

General Cardiology

Afternoon Session – 1:00 – 2:40 PM

Moderator: David Frankel, MD

1:00 – 1:25 PM

Atrial Fibrillation Ablation: Who, How, Expected Results and Special Considerations

Francis Marchlinski, MD

- Current indications
- PV isolation – making it stick
- What to do beyond pulmonary vein isolation in persistent AF
- AF ablation and mitral regurgitation/heart failure

1:25 – 1:50 PM

Catheter Ablation of AF –

Impact on Neurologic Function

Jonathan Piccini, MD, MHS

- AF and dementia – what is the evidence for a link?
- Stroke reduction with ablation

1:50 – 2:35 PM

Anticoagulation Challenges in Arrhythmia

Management: Case Based Presentation/

Audience Participation:

Moderator: David Frankel, MD

Panel Members: Jonathan Piccini, MD, MHS, Mariell Jessup, MD, Andrew Costin, MD, Pasquale Santangeli, MD, PhD, John Bullinga, MD

- Recognizing and preventing stroke with apical aneurysm
- Indications for LAA occlusion device
- Anticoagulation at time of device implant or ablation
- Role of “as needed” anticoagulation in lower risk patients
- Picking best OAC: considerations

2:35 – 3:00 PM

Role of Genetic Testing in Arrhythmias Disorders

Rajat Deo, MD

- How genetic diagnoses influence arrhythmia management
- Atrial scar as a marker for cardiomyopathy
- What to do with family members

3:00 – 3:20 PM Break

General Cardiology

Afternoon Session – 3:00 – 5:00 PM

Moderator: David Callans, MD

3:20 – 3:50 PM

Cardiac Monitoring: From Simple to Complex – Present and Future

David Lin, MD

- Role of Holter, ECG patch monitor, MCOT
- When to implant loop recorder?
- Importance/accuracy of pulse assessment
- Any role for the Apple watch and other “wearables”?

3:50 – 4:20 PM

Six Most Common Mistakes Made in Arrhythmia

Management: How to Recognize and Avoid

David Frankel, MD

- Calling coarse Afib, atrial flutter
- Under-recognizing the role of Afib/VPDs in cardiomyopathy
- Failing to prevent inappropriate ICD shocks
- Ignoring risk of recurrent VT at time of LVAD implantation

4:20 – 5:00 PM

Management of Syncope:

Case Based Presentations

Moderator: David Callans, MD

Panel Members: Michael Riley, MD, PhD, Gregory Supple, MD, Matthew Hyman, MD, PhD Sanjay Dixit, MD, Jeffrey Luebbert, MD

- Syncope in the athlete
- Non-arrhythmic considerations
- When to implant a monitoring device
- Some important ECG clues
- What you can learn in the EP lab?

Advanced EP

Afternoon Session – 1:00 – 2:45 PM

Moderator: Michael Riley, MD, PhD

1:00 – 1:45 PM

Papillary Muscle Localization and Ablation

Gregory Supple, MD

- Role of imaging
- Role of detailed activation and pace mapping
- When to freeze
- Is it ever a good idea to isolate the papillary muscle?

1:45 – 2:15 PM

Septal Venous Mapping for Focal and Scar Related Arrhythmias: Tools and Tricks

Fermin Garcia, MD

- Defining the venous anatomy
- Tools of the trade
- Identifying abnormal signals
- Targeting adjacent endo versus intravenous alcohol ablation

2:15 – 2:45 PM

Atrial Tachycardias Post AF Ablation:

Localization and Ablation

Pasquale Santangeli MD, PhD

- Activation mapping with small electrodes
- Role of entrainment mapping
- Best lines to draw and how to show efficacy
- Epicardial bundles – how to diagnose and treat?

2:45 – 3:05 PM Break

Advanced EP

Afternoon Session – 3:05 – 5:00 PM

Moderator: Francis Marchlinski, MD

3:05 – 3:30 PM

Use of Entrainment in Diagnosis and

Localization of SVT and VT

Ramanan Kumareswaran, MD

- Appropriate techniques
- Diagnosis of mechanism
- Return cycle mapping: power and pitfalls

3:30 – 4:00 PM

Implications of CABANA for Practice

and Future Clinical Trials

Jonathan Piccini, MD, MHS

- Intention-to-treat versus on-treatment analysis
- Practitioner versus trialist points of view
- Is it enough to improve quality of life and eliminate AF?
- The dangers of subgroup and post hoc analysis

4:00 – 4:25 PM

Six Most Common Mistakes Made in

Device Management and Follow-up

Robert Schaller, DO

- Best venous access site and what techniques to avoid
- Avoiding LA or endo LV placement
- Minimizing risk of perforation
- Other tricks of the trade

4:25 – 5:00 PM

Rapid Fire New Technology/Techniques

Panel Members: Stavros Mountantonakis, MD

Pasquale Santangeli, MD, PhD, Cory Tschabrunn, PhD

Jeffrey Arkles, MD

- Protecting the esophagus
- Making more effective/safer ablation lesions
- Radiotherapy to treat VT
- Q & A (5-minute panel discussion)

Associated Professional

Afternoon Breakout Session – 1:00 – 3:00 PM

Moderator – Robert Hipp, PA-C, MS, MBA

1:00 – 1:40 PM

Selecting Appropriate Device Therapy:

Case Based Tutorial

Christian Yacono, PA-C, CCDS

- Pacemaker or implantable defibrillator?
- Single chamber, dual chamber or cardiac resynchronization
- Transvenous vs subcutaneous ICD
- Indications for leadless pacemaker

1:40 – 2:15 PM

Recognition and Treatment of EP Emergencies

Nina Mirachi, PA-C

- VT/VF storm
- Device malfunction
- Post procedure complications

2:15 – 2:55 PM

Device and Lead Extraction

Jeffrey Arkles, MD

- Indications
- Considerations and alternatives
- Complications including mortality risk
- Timing of device reimplant

2:55 – 3:15 PM Break

Associated Professional

Afternoon Breakout Session – 3:15 – 5:00 PM

Moderator – Nancy Cash, DNP, CRNP

3:15 – 3:55 PM

Anticoagulation for EP Procedures

Tara Parham, CRNP

- EP procedures that require systemic anticoagulation
- What to do with oral anticoagulants around the time of EP procedures
- Reversal of anticoagulation in emergencies

3:55 – 5:00 PM

EP Jeopardy

Moderator: Erica Zado PA-C, FHRS

Panel Members: Trevor Bonney, PA-C

Allyson Prasad, CRNP, Amanda Every, PA-C

Tracey Munson, CRNP

- Inherited arrhythmia disorders
- Tachy and brady arrhythmias
- Commonly used tools and scores
- Remote monitors, wearables and personal monitors

5:00 PM Adjourn

5:00 – 6:00 PM Reception

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Questions? Contact us at:

Phone: 215-898-6400 or 215-898-8005 • penncme@pennmedicine.upenn.edu

Please note we are unable to accept faxed registration forms.

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Name (First) (Last)

Academic Degree

Medical Specialty

Affiliation (Hospital, Office, or Company)

Address (affiliation home)

City State Zip

Phone Fax

E-mail

Breakout Session Preference (Please Check One)

General Cardiology Associated Professionals Advanced EP

Registration Fees

(pre-payment is required to be officially registered)

- \$120 Physicians or Industry
- \$100 Nurses or Healthcare Professionals
- \$65 Residents, Fellows, Students and Retired Physicians
- \$100 Penn Medicine Physicians
- \$65 Penn Medicine Nurses or Healthcare Professionals
- \$60 Penn Medicine Residents, Fellows & Students

Payment Method

- If you are paying by credit card, please register online at
<https://upenn.cloud-cme.com/arrhythmia2019>
- If you are paying by check, you may mail your completed registration form and check, made payable to **The Trustees of the University of Pennsylvania/CME**, to:
Conference Coordinator, Penn Medicine, Office of Continuing Medical and Interprofessional Education, 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.



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A background graphic for the symposium, featuring a grid pattern in shades of orange and red, with a white ECG (heart rate) line overlaid on it.

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