



Penn Medicine

Continuing Medical and
Interprofessional Education

LIVE VIRTUAL

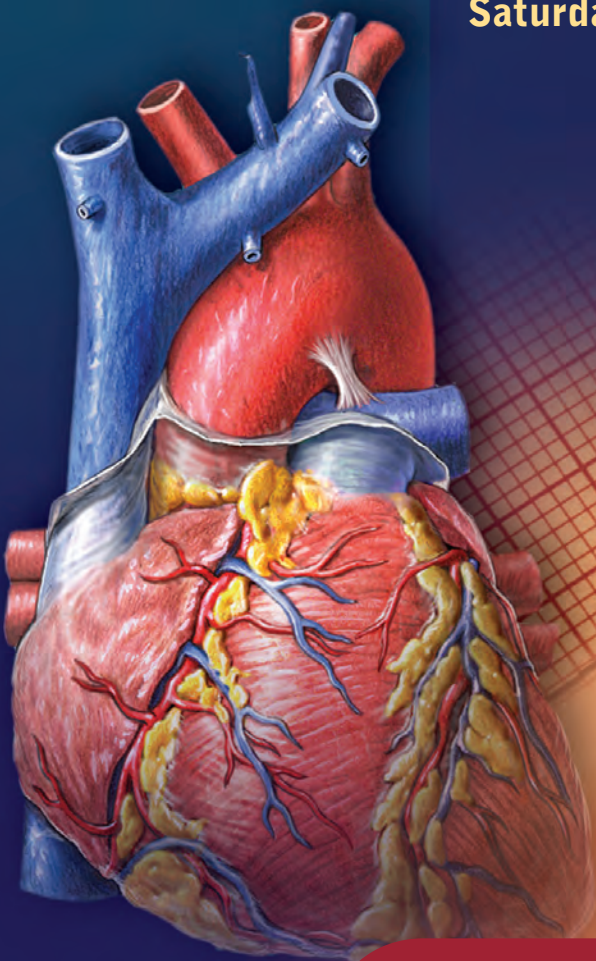
The Mark E. Josephson Twenty-Eighth Annual State-of-the-Art Arrhythmia Symposium

**Arrhythmia Diagnosis & Treatment Standards 2021
and Leonard N. Horowitz, MD
Memorial Lecture**

A CME/CNE-ACCREDITED SYMPOSIUM

Saturday, September 11, 2021

7:45 AM – 5:00 PM EST



Co-sponsored with:



**Heart
Rhythm
Society**SM

<https://upenn.cloud-cme.com/arrhythmia2021>

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

- Discuss the use and value of new techniques and technologies employed for complex EP device and ablation cases.
- Review and assess the differences in the various oral anticoagulants including appropriate use, dosing, risks, and contraindications.
- Discuss indications and use of new pacing techniques including His bundle (HBP) and left bundle pacing.
- Recognize ECG clues to detect patients at risk for sudden death.
- Describe the complexities regarding arrhythmia management in patients with congenital heart disease.
- Describe the appropriate evaluation and treatment for patients presenting with syncope.
- Discuss the evaluation of sudden death and arrhythmia risk and appropriate treatment in patients with hypertrophic cardiomyopathy.
- Apply into practice the newest information regarding evaluation and treatment of atrial arrhythmias including screening for episodes and ablation indications/techniques/endpoints.

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Hosting Department

The Mark E. Josephson Twenty-Eighth 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



JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

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.

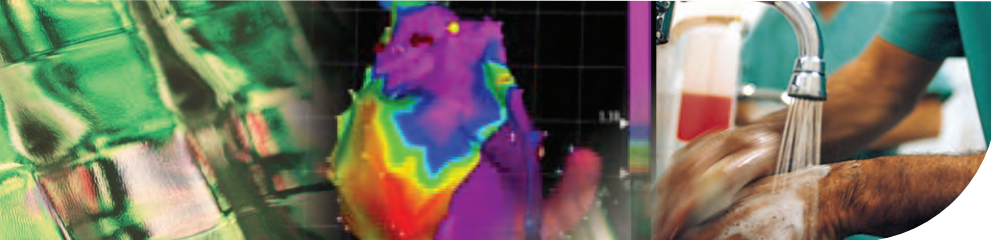
Designation of Credit

Physicians: Penn Medicine designates this live activity for a maximum of 8.75 *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 8.75 contact hours.

Physician Assistants: Penn Medicine has been authorized by the American Academy of PAs (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for 8.75 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation.

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



Meeting Location

The Mark E. Josephson Twenty-Eighth Annual State-of-the-Art Arrhythmia Symposium will be held Saturday, September 11, 2021 by live stream only. The virtual presentation will follow the scheduled agenda in real time (EST).

Registration Fees

There is **no fee** to attend the *The Mark E. Josephson Twenty-Eighth Annual State-of-the-Art Arrhythmia Symposium* but registration is **required**. Please register online at <https://upenn.cloud-cme.com/arrhythmia2021>.

Your registration includes live stream access to the symposium and access to view the presentations (slides) online. In-person attendance is not permitted for this symposium. All pre-registered attendees will receive a link with instructions to sign-in and join the virtual conference by the Thursday preceding the symposium.

Please note: mailed registrations can take up to 5-10 business days before they are received. We are experiencing longer delays receiving mail due to the COVID-19 pandemic. We encourage all attendees to register online.

All registrations will be confirmed by email as long as your registration is received no later than September 10, 2021.

Cancellation Policy

The University reserves the right to cancel or postpone any course due to unforeseen circumstances.

Disclosures

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

Services for the Disabled If special arrangements are required for an individual with a disability to participate this meeting, please contact the Office of Continuing Medical and Interprofessional Education no later than August 20, 2021, at 215-898-6400.

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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

Sabine Ernst, MD, PhD

*Professor of Practice (Cardiology)
National Heart & Lung Institute
Imperial College
London, UK*

Valentin Fuster, MD, PhD

*Physician-in-Chief, Mount Sinai Hospital
Director, Mount Sinai Heart
New York, NY*

Maully Shah, MBBS

*Professor of Pediatrics
Children's Hospital of Philadelphia
Philadelphia, PA*

Katie Walsh, MBBCh BAO, MRCPI, MRCP UK

*Consultant Electrophysiologist
Cork University Hospital
Cork, Ireland*

Peter J. Zimetbaum, MD

*Richard A. and Susan F. Smith Professor
of Cardiovascular Medicine
Beth Israel Deaconess Medical Center
Harvard Medical School
Boston, MA*

Faculty

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

Jeffrey Arkles, MD

*Assistant Professor of Medicine
Cardiac Electrophysiology*

Trevor Bonney, PA-C

*Physician Assistant
Cardiac Electrophysiology*

John Bullinga, MD

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

David Callans, MD

*Professor of Medicine
Cardiac Electrophysiology*

Melissa Callans, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*

Keith Cengel, MD, PhD

Associate Professor of Radiation Oncology

Kirstan Clay-Weinfeld, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*

Rajat Deo, MD

*Associate Professor of Medicine
Cardiac Electrophysiology*

Sanjay Dixit, MD

*Professor of Medicine
Director, Electrophysiology Laboratory
Philadelphia VA Medical Center*

Andrew Epstein, MD

*Professor of Medicine
Chief, Cardiology Section
Philadelphia VA Medical Center*

David Frankel, MD

*Associate Professor of Medicine
Director, Electrophysiology Fellowship Program*

Fermin Garcia, MD

*Associate Professor of Clinical Medicine
Director, Cardiac Electrophysiology Laboratory
Pennsylvania Hospital*

Gustavo S. Guandalini, MD

*Instructor of Medicine
Cardiac Electrophysiology*

Robert Hipp, PA-C, MS, MBA

*Physician Assistant
Cardiac Electrophysiology*

Matthew Hyman, MD, PhD

*Assistant Professor of Medicine
Cardiac Electrophysiology*

Yuli Y. Kim, MD

*Associate Professor of Medicine and Pediatrics
Medical Director, Philadelphia Adult
Congenital Heart Center
Fellowship Director
Adult Congenital Heart Disease
Penn Medicine and
Children's Hospital of Philadelphia*

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*

Saman Nazarian, MD, PhD

*Associate Professor of Medicine
Cardiac Electrophysiology*

Tara Parham, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*

Emily Perovich, PA-C

*Physician Assistant
Cardiac Electrophysiology*

Cynthia Ramos, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*



Michael Riley, MD, PhD

*Assistant Professor of Clinical Medicine
Cardiac Electrophysiology*

Pasquale Santangeli, MD, PhD

*Associate Professor of Medicine
Cardiac Electrophysiology*

Robert Schaller, DO

*Assistant Professor of Clinical Medicine
Cardiac Electrophysiology*

Gregory Supple, MD

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

Steven Szablewski, CRNP

*Nurse Practitioner
Cardiac Electrophysiology*

Cory Tschabrunn, PhD

*Research Assistant Professor of Medicine
Director, Translational
Electrophysiology Program*

Christian Yacono, PA-C

*Physician Assistant
Cardiac Electrophysiology*

Amaryah Yaeger, RN

*Registered Nurse
Cardiac Electrophysiology*

Erica Zado, PA-C

*Physician Assistant
Cardiac Electrophysiology*

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The Mark E. Josephson Twenty-Eighth Annual State-of-the-Art Arrhythmia Symposium

Saturday, September 11, 2021

ALL PRESENTATIONS ARE PRE-RECORDED UNLESS OTHERWISE INDICATED

7:00 – 7:30 AM

**Audience Connection and Review of
Videoconferencing Guidelines**

7:30 – 10:40 AM

General Cardiology – Morning Session

Moderator: Francis Marchlinski, MD

7:30 – 7:35 AM

Welcome and Introduction

Francis Marchlinski, MD

7:35 – 8:00 AM

**Josephson Keynote ECG Lecture:
ECG Identification of Genetically Linked
Arrhythmia Syndromes and VT/VF Risk**

- Long QT syndromes
- Brugada syndrome
- Arrhythmogenic RV cardiomyopathy
- Early repolarization
- Role of exercise testing and drug infusion

Rajat Deo, MD

8:00 – 8:15 AM

**LIVE Panel Discussion:
ECG and Genetically Linked Syndromes**

Moderator: Francis Marchlinski, MD
Panelists: Rajat Deo, MD, Pasquale Santangeli, MD, PhD, Matthew Hyman MD, PhD, Katie Walsh, MBBCb

8:15 – 9:15 AM

**Rapid-Fire Updates in the
Management of Atrial Fibrillation –**

(12 minute presentations/20-minute panel discussion)
Moderator: David Callans, MD

- Asymptomatic atrial fibrillation and late AF recurrence – when /how to treat
Francis Marchlinski, MD
- Device detected AF and stroke risk
David Lin, MD
- Latest technologies for safe and effective pulmonary vein isolation
Gregory Supple, MD
- AF burden assessment –
How important for tracking effect of therapy
Katie Walsh, MBBCb
- Anticoagulation reversal agents –
indications and risk
Peter Zimetbaum, MD

9:15 – 9:35 AM

LIVE Panel Discussion: Management of AFib

Moderator: David Callans, MD
Panelists: David Lin, MD, Gregory Supple, MD, Katie Walsh, MBBCb, Peter Zimetbaum, MD

9:35 – 10:15 AM

**Debate: Stroke Prevention with LAA Occlusion
Devices is Over Utilized**

Pro: Peter Zimetbaum, MD (15 minutes)
Con: Pasquale Santangeli, MD, PhD (15 minutes)
LIVE Rebuttal: 5 minutes each

10:15 – 10:25 AM

Challenges of VT Ablation in Structural Heart Disease

- Overall experience
- Anatomic challenges: severe hypertrophy
- Prior surgery and epicardial substrate
- Too sick to ablate!

David Frankel, MD

10:25 – 10:40 AM

Radiation Therapy for Refractory VT

- Basic concepts
- Patient selection
- Preliminary results

Jeffrey Arkles, MD

10:40 – 11:00 AM

LIVE Panel Discussion: Eliminating VT with Ablation

Moderator: Francis Marchlinski, MD
Panelists: David Frankel, MD, Jeffrey Arkles MD, Keith Cengel MD, PhD, David Callans MD, Sanjay Dixit MD

11:00 – 11:40 AM

**Leonard N. Horowitz MD
Memorial Lecture (LIVE) (LIVE)
Cardiac Manifestations of COVID-19 –
Management Recommendations**

Valentin Fuster, MD, PhD

11:40 AM – 12:00 PM

LIVE Panel Discussion: COVID and the Heart

Moderator: Francis Marchlinski, MD
Panelists: Valentin Fuster, MD, PhD, David Callans, MD, John Bullinga, MD, Peter Zimetbaum, MD

12:00 – 12:30 PM Lunch/Visit Exhibits

12:30 – 2:45 PM

**General Cardiology
Afternoon Session – PART I**

Moderator: Andrew Epstein, MD

12:30 – 12:50 PM

**His Bundle (HB) Pacing, BiV with CS Lead and
Left Bundle (LB) Pacing: Who, When, How and
Expected Results?**

- Which patients are appropriate candidates?
- Technique and challenges
- Comparison of HB and LB pacing with BiV pacing
- Long term efficacy

Robert Schaller, DO

12:50 – 1:10 PM

**Hypertrophic Cardiomyopathy:
Sudden Death Risk and More**

- HCM sudden death risk scores and new guideline recommendations
- Role of genetic testing
- Myomectomy: surgery/alcohol/catheter ablation
- Managing atrial fibrillation
- Role of Sub-Q ICD

Michael Riley, MD, PhD

1:10 – 1:30 PM

**ECG Clues to Identify Arrhythmia Mechanism
and Improve Treatment**

- Bradyarrhythmias: nodal versus infranodal disease
- Tachyarrhythmias: SVT vs VT

Ramanan Kumareswaran, MD

1:30 – 1:55 PM

**LIVE Panel Discussion: Resynchronization Therapy/
Hypertrophic CM and Diagnosis of VT**

Moderator: Andrew Epstein, MD

*Panelists: Robert Schaller, DO, Michael Riley, MD,
PhD, Ramanan Kumareswaran, MD*

1:55 – 2:45 PM

**LIVE Case Presentations/Panel Discussion:
Common Device Challenges:
How to Recognize and Treat**

- Identifying infected pocket
- Inappropriate shocks for SVT/ST/AF
- Loss of BiV capture
- Recognizing common pacemaker pacing algorithms that look like dysfunction-when and how to image

Moderator: Robert Schaller, DO

*Panelists: David Lin, MD, Jeffrey Arkles, MD,
Jeffrey Luebbert, MD, Gustavo Guandalini MD,
Andrew Epstein, MD*

2:45 – 3:00 PM Break/Visit Exhibits

3:00 – 5:00 PM

**General Cardiology
Afternoon Session – PART II**

Moderator: David Lin, MD

3:00 – 3:20 PM

Cardiac Sarcoidosis

- Defining the disease
- Role of PET, MR imaging and biopsy
- Role of EP evaluation
- When to give steroids, implant an ICD, and perform catheter ablation

Saman Nazarian, MD, PhD

3:20 – 3:40 PM

Syncope: When to Worry and How to Evaluate

- History
- ECG clues
- Imaging
- EP evaluation

Matthew Hyman, MD, PhD

3:40 – 4:00 PM

LIVE Panel Discussion: Cardiac Sarcoidosis/Syncope

Moderator: David Lin, MD

Panelists: Saman Nazarian, MD, PhD, Matthew Hyman, MD, PhD, Sanjay Dixit, MD

4:00 – 5:00 PM

**LIVE Case Presentations/Panel Discussion:
ECG Abnormalities on Screening ECG and
Evaluation of Post-Surgical Patients: Diagnosis and
Clinical Implications**

- WPW syndrome
- Identifying phase 4 block and 2:1 block in the His-Purkinje system
- Drug induced long QT – How to recognize and manage
- Identifying slow atrial flutter that mimics sinus tachycardia
- When to pace after TAVR

Moderator and Case Presentation: Sanjay Dixit, MD

Panelists: David Lin, MD, Ramanan Kumareswaran, MD, Jeffrey Luebbert, MD, Gustavo Guandalini, MD

12:30 – 2:30 PM

**Advanced EP
Afternoon Session – PART I**

Moderators: Maully Shah, MBBS, Yuli Kim, MD

12:30 – 1:00 PM

**Mapping and Ablation for
Complex Atrial Arrhythmias in
Congenital Heart Disease**

- Knowing the anatomy/pre-procedure imaging
- Value of remote navigation
- Best mapping and ablation strategies
- Expected outcomes

Sabine Ernst, MD, PhD

1:00 – 1:30 PM

**Overcoming Device Implantation Challenges
in Adults with CHD**

- Anatomic challenges: dilatation/obstruction/no access
- Baffled by the baffle
- Epicardial pacing – new approaches

Gregory Supple, MD

1:30 – 2:30 PM

**LIVE Case Presentations and Panel Discussion:
Arrhythmias in Congenital Heart Disease**

- Collaboration between pediatric and adult electrophysiologist
- Approaching the most challenging cases
- Understanding prior surgery/imaging/mapping and ablation

Moderators and Case Presentations: Yuli Kim MD,

Maully Shah, MBBS

Panelists: Sabine Ernst, MD, PhD, Gregory Supple, MD

2:30 – 2:45 PM

Break/Visit Exhibits

AGENDA

2:45 – 5:00 PM

Advanced EP Afternoon Session – PART II

Moderator: Katie Walsh, MBBCh

2:45 – 3:05 PM

Ablation of J wave and Brugada Syndromes

- Defining the syndromes
- Endo/epi voltage correlation
- Endpoints and effectiveness of ablation

Francis Marchlinski, MD

3:05 – 3:25 PM

VF Trigger Mapping and Ablation

- Common sites of origin
- Tricks for initiation
- Stabilizing the catheter

Fermin Garcia, MD

3:25 – 4:15 PM

Rapid Fire Technology Updates

(10 minute presentations)

- Pulsed field ablation
Pasquale Santangeli, MD, PhD
- High-power short-duration ablation techniques
Jeffrey Arkles, MD
- Multielectrode mapping for AF, AT and VT
Cory Tschabrunn, PhD
- Advances in cryoablation technology
Gregory Supple, MD
- Appendage closure with ICE guidance
Pasquale Santangeli, MD, PhD

4:15 – 5:00 PM

LIVE Panel Discussion: VF, VT, AFib Ablation

Moderator: Katie Walsh, MBBCh

Panelists: Francis Marchlinski, MD, Fermin Garcia, MD, Jeffrey Arkles, MD, Cory Tschabrunn, PhD, Gregory Supple, MD, Pasquale Santangeli, MD, PhD

12:30 – 2:45 PM

Associated Professional Afternoon Breakout Session – PART I

Moderator: Tara Parham, CRNP

12:30 – 1:05 PM

Nuts and Bolts of Cardiac Resynchronization and Physiologic Pacing

- What is CRT, His bundle pacing (HB) and left bundle pacing?
- What's the evidence that they work?
- What to look for on ECG
- How to optimize pacing

Trevor Bonney, PA-C

1:05 – 1:40 PM

Arrhythmias Associated with Unusual Conditions: How to Evaluate and Manage

- Myotonic dystrophy
- Cardiac amyloidosis
- Cardiac sarcoidosis

Emily Perovich, PA-C

1:40 – 2:25 PM

Anticoagulation Choice and Dosing in Special Circumstances

- Obesity/malnutrition
- Following percutaneous coronary interventions
- Severe kidney or liver disease
- Valvular heart disease

Robert Hipp, PA-C

2:25 – 2:45 PM

LIVE Panel Discussion: Audience Q & A

Moderator: Tara Parham, CRNP

Panelists: Robert Hipp, PA-C, Emily Perovich, PA-C, Trevor Bonney, PA-C

2:45 – 3:00 PM **Break/Visit Exhibits**

3:00 – 5:00 PM

Associated Professional Afternoon Breakout Session – PART II

Moderator: Cynthia Ramos, CRNP

3:00 – 3:35 PM

Remote Monitoring of Devices in the Real World

- The science behind the movement
 - Best practices to handle alerts
 - How to manage the mounds of data
 - Incorporating data from “wearables”
- Amaryah Yaeger, RN*

3:30 – 4:00 PM

Managing EP Emergencies

- Late cardiac tamponade
 - Repetitive ICD shocks
 - Lead dislodgement
 - Post procedure neurological symptoms
- Kirstan Clay-Weinfeld, CRNP*

4:00 – 4:15 PM

LIVE Panel Discussion: Audience Q & A

Moderator: Cynthia Ramos, CRNP

Panelists: Amaryah Yaeger, RN, Kirstan Clay-Weinfeld, CRNP

4:15 – 5:00 PM

LIVE Case Presentations/Audience Response: Every Day EP – Clinically Relevant Cases with a Twist

- Look what I found on device interrogation!
- I thought that it was the right drug for the right patient, but...
- That can really happen after ablation?
- Well that's an interesting ECG!

Moderator: Christian Yacono, PA-C

Panelists: Steven Szablewski, CRNP, Melissa Callans, CRNP, Erica Zado, PA-C

5:00 PM

Thank You and Farewell

Francis Marchlinski, MD

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Questions? Contact us at:

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

Please note we are unable to accept faxed registration forms.

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