



Northwestern Medicine® is the shared vision that joins Northwestern Memorial HealthCare and Northwestern University Feinberg School of Medicine in a collaborative effort to transform medicine through quality healthcare, academic excellence and scientific discovery.

Bluhm Cardiovascular Institute  
251 East Huron, Feinberg 8-504  
Chicago, Illinois 60611

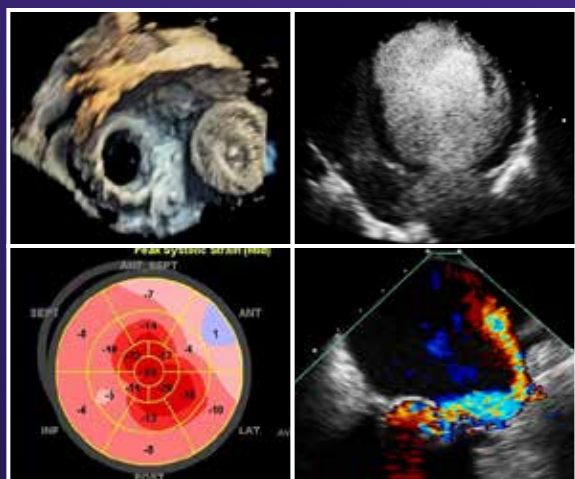
ECHO Northwestern  
40th Annual Program  
Chicago, Illinois

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# ECHO

## NORTHWESTERN 2018 40th ANNUAL PROGRAM

**Friday – Sunday  
September 21–23, 2018**



**Northwestern  
Memorial Hospital**

**Feinberg Conference  
Center**

**251 East Huron Street  
3rd Floor  
Chicago, Illinois 60611**

Sponsored by  
Northwestern University Feinberg School of Medicine  
Office of Continuing Medical Education  
and

Bluhm Cardiovascular Institute  
Northwestern Medicine

**M Northwestern Medicine®**  
Feinberg School of Medicine

Echo Northwestern 2018 is held  
in cooperation with the American  
Society of Echocardiography



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# General Information

## Learning Objectives

This course will provide physicians and sonographers at all levels with practical knowledge and application of two-dimensional echo, color flow and spectral Doppler, transesophageal, 3D and stress echocardiographic techniques which can be utilized in current everyday practice as well as future in applications. At the end of the course, each participant should have improved skills in the use of echocardiographic techniques for the appropriate diagnosis and treatment of common cardiac conditions.

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

- 1 Apply the recommendations for the echocardiographic evaluation of left ventricle function to clinical practice;
- 2 Explain the role of echo in the treatment of heart failure;
- 3 Use strain imaging to assess cardiac function in various pathological states;
- 4 Discover updated methodology to assess diastolic function using the recently updated ASE guidelines;
- 5 Assess patients with valvular disorders using the new ACC/AHA guidelines for valvular heart disease;
- 6 Recognize different echocardiographic methods to assess right ventricular structure function. Cite the strengths and weakness of these techniques including complementary technologies: CT and MRI;
- 7 Discuss the clinical classification of pulmonary hypertension, its implications for the patient and how echo can help in assessing its severity and guide management of patients with the condition;
- 8 Evaluate how 3D echo works and express limitations and potential applications as it relates to daily practice and patient management;
- 9 Assess the uses of ultrasound enhancing agents (echo contrast) and how to incorporate the use of the agents into a busy echo lab;
- 10 Review of varying disease states that can be evaluated with stress echo;
- 11 Evaluate the role of echo in the diagnosis and treatment of patients with aortic stenosis;
- 12 Recognize the pathology and the basics of echocardiographic assessment of patients with common congenital heart lesions;
- 13 Review the role of echo in surgical and percutaneous treatments of aortic stenosis and mitral regurgitation;
- 14 Review the role of echo in new percutaneous treatment of tricuspid regurgitation;
- 15 Review the role of echo in guiding other percutaneous procedures such as left atrial appendage closure and alcohol septal ablation.

## Program Description

Principles of echocardiography will be reviewed and advances will be demonstrated through lectures and case studies. Participants will be exposed to all aspects of basic and advanced echocardiography. Daily sessions will be devoted to state-of-the-art lectures on advances in echocardiography and specific application to the following states:

- Heart Failure
- Interventional Echocardiography
- Valvular Heart Disease
- Coronary Artery Disease
- Congenital Heart Disease
- Strain Imaging

The following aspects of echocardiography will be covered:

- 2D Echocardiography
- Spectral and Color Doppler
- Transesophageal Echocardiography
- 3D Echocardiography
- Stress Echocardiography
- Ultrasound Enhancing Agents (Echo Contrast)
- Tissue Doppler, Strain/Imaging
- Common Congenital Heart Disorders

Case studies will be interspersed throughout each of the lectures to emphasize the importance and clinical utility of each technique discussed. The case studies will emphasize different topics in echocardiography that are seen in daily practice.

## Target Audience

This continuing medical education program is designed to meet the educational needs of cardiologists, cardiology fellows, anesthesiologists, surgeons, sonographers and nurses who have a need for echo expertise. A minimum of three months experience in echocardiography and knowledge of basic transesophageal anatomy and physiology of the heart is required.

## Conference Location

Northwestern Memorial Hospital  
Feinberg Conference Center  
251 East Huron Street, 3rd Floor  
Chicago, Illinois 60611

Directions and parking information are available at [www.nm.org](http://www.nm.org).

Discounted parking is available at the Huron St. Clair garage, located at 222 East Huron Street or at the Erie Ontario garage, located at 321 East Erie Street. Please see the registration table for parking validation.

## Special Needs

The Feinberg School of Medicine fully intends to comply with the legal requirements of the Americans with Disabilities Act. If any participant of this conference is in need of accommodation please indicate those needs on the registration form or submit written requests to the Office of CME at least one month prior to the conference date.

## Additional Information

For additional information please visit our website <https://northwestern.cloud-cme.com> or contact us via email at [cvconferences@northwestern.edu](mailto:cvconferences@northwestern.edu)

## Accreditation Statement

The Northwestern University Feinberg School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

## Credit Designation Statement

The Northwestern University Feinberg School of Medicine designates this live activity for a maximum of 22.75 *AMA PRA Category 1 Credit(s)*<sup>™</sup>. Physicians should claim only credit commensurate with the extent of their participation in the activity.

## Nurses

The American Nurses Credentialing Center (ANCC) and the Illinois Department of Financial and Professional Regulation accept AMA PRA Category 1 Credits<sup>™</sup> from organizations accredited by the ACCME for relicensure & recertification requirements. 1 CME credit is equivalent to 1 contact hour. Your certificate of completion, which includes the number of CME credits awarded is the only documentation required.

## Hotel

Hyatt Centric Chicago Magnificent Mile  
633 North St Clair Street, Chicago Illinois 60611

Rooms have been reserved at a reduced rate of **\$225 single/double, plus tax**. Please contact the hotel directly at 888-591-1234 and mention Echo Northwestern or visit <https://book.passkey.com/go/NUAnnualEchoConference2018> to reserve your room. To receive the reduced room rate, reservations must be made by August 24, 2018. Reservations made after August 24th are subject to availability and regular hotel rates. The room block may fill prior to the cutoff date, so be sure to make your arrangements early.



Faculty Disclosure

Northwestern University Feinberg School of Medicine requires course directors, speakers, instructors, planners and other individuals who are in a position to control the content of this activity to disclose any relevant financial relationships. All identified potential conflicts of interest are thoroughly vetted by NUFSM for fair balance; scientific objectivity of studies mentioned in the materials or used as the basis for content, and appropriateness of patient care recommendations. The faculty disclosures will be indicated in the course syllabus.

COURSE DIRECTORS

**Kameswari Maganti, MD, FASE**  
Associate Professor of Medicine  
Northwestern University Feinberg School of Medicine

**David Mehlman, MD, FASE**  
Associate Professor of Medicine  
Northwestern University Feinberg School of Medicine

**Issam Mikati, MD, FASE**  
Professor of Medicine-Cardiology and Radiology  
Northwestern University Feinberg School of Medicine

**Vera Rigolin, MD, FASE**  
Professor of Medicine  
Medical Director, Echocardiography Laboratory  
Northwestern University Feinberg School of Medicine

**James Thomas, MD, FASE**  
Professor of Medicine  
Director, Center for Heart Valve Disease  
Northwestern University Feinberg School of Medicine

GUEST SPEAKERS

**Saroja Bharati, MD**  
Director, Cardiac Pathology  
Advocate Hope Children's Hospital,  
Advocate Children's Heart Institute  
Professor of Pathology  
Rush Medical College

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Medical Director, Non-Invasive Cardiology –  
Baylor Hamilton Heart and Vascular Hospital  
Medical Director, Cardiology Research  
and Education  
Baylor University Medical Center,  
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**Jonathan Lindner, MD, FASE**  
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Medicine, School of Medicine  
Professor, Oregon National Primate Research Center  
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Knight Cardiovascular Institute, School of Medicine  
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School of Medicine  
Program in Molecular and Cellular Biosciences,  
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**Stephen Little, MD, FASE**  
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Associate Professor of Clinical Cardiology, Institute  
for Academic Medicine  
Assistant Member, Research Institute  
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Houston Methodist Hospital  
Houston Methodist Weill Cornell Medical College

FACULTY SPEAKERS

**Waleed Ahmed, MD, MBBS**  
Medical Director, Cardiac Imaging  
Health System Clinician

**Nausheen Akhter, MD, FASE**  
Assistant Professor of Medicine

**Charles Davidson, MD**  
Clinical Chief, Cardiology  
Medical Director, Bluhm Cardiovascular Institute  
Professor of Medicine  
Vice Chairman of Clinical Affairs, Department of  
Medicine

**R. Andrew de Freitas, MD**  
Assistant Professor of Pediatrics-Cardiology  
Director, Adult Congenital Heart Disease

**Stephen Devries, MD, FASE**  
Associate Professor of Medicine

**Micah Eimer, MD**  
Health System Clinician  
Cardiology and Medical Director, Glenview/Deerfield  
Outpatient Centers

**Benjamin Freed, MD, FASE**  
Assistant Professor of Medicine

**Susan Kim, MD**  
Associate Professor of Medicine

**Menhel Kinno, MD**  
Advanced Cardiac Imaging Fellow

**S. Chris Malaisrie, MD**  
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Surgical Director, Bicuspid Aortic Valve Program  
and Pulmonary Endarterectomy Team

**Marla Mendelson, MD**  
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Associate Professor of Medicine and Pediatrics  
Director, Heart Disease and Pregnancy Program and  
the Northwestern Adult Congenital Heart Center

**Tim Provias, MD**  
Health System Clinician Cardiology  
Northwestern Medicine

**Jyothy Puthumana, MD, FASE**  
Associate Professor of Medicine

**Sasan Raissi, MD**  
Advanced Cardiac Imaging Fellow

**Mark Ricciardi, MD**  
Chief, Cardiac Catheterization and  
Interventional Cardiology  
Medical Director, Cardiac Catheterization Lab  
Associate Professor of Medicine

**Daniel Schimmel, Jr, MD, MS**  
Assistant Professor of Medicine

**Sanjiv Shah, MD, FASE**  
Professor of Medicine  
Director, Heart Failure with Preserved Ejection  
Fraction Program

**Robert Silverberg, MD**  
Associate Professor of Medicine

**Ranya Sweis, MD**  
Assistant Professor of Medicine

**Patricia Vassallo, MD, FASE**  
Assistant Professor of Medicine

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Associate Director, Bluhm Cardiovascular Institute  
Vice Dean, Diversity & Inclusion  
Magerstadt Professor of Medicine  
Professor of Medical Social Sciences

**Allison Zielinski, MD**  
Health System Clinical Cardiology  
Northwestern Medicine

NORTHWESTERN MEDICINE HOSPITAL STAFF

**Brian Fey, BA, ACS, RDCS (AE/PE), FASE**  
**Joshua Gilles, BS, ACS, RDCS, RCCS**  
**Colleen Gillis, RDCS**  
**Tia Gordon, BS, RDCS (AE/PE), FASE**  
**Madeline Jankowski, BS, RDCS, FASE**  
**Erin Jensen, BA, RDCS, RVT**

**Bonnie Kane, BS, RDCS, FASE**  
**Milica Kukic, RDCS**  
**Amelia Machacek, BS, RDCS**  
**Michael McNeal, BA, RDCS**  
**Juliet Ryan, BS, RDCS, FASE**  
**Shelley Sarson, BA, ACS, RDCS, FASE**

**Robert Schultz, MS, RCS**  
**Inga Vaitenas, ACS, RCS, RCCS, FASE**  
**Robyn Witkov, BS, RDCS**  
**Bernadette Wodzinski, RDCS**

# Agenda

## Friday, September 21, 2018

8:00-9:00 AM Registration and Breakfast

### SESSION I VALVULAR HEART DISEASE

**Moderator:** James Thomas, MD, FASE

9:00-9:20 AM Anatomy and Mechanisms of Regurgitation of the Mitral Valve  
**Vera Rigolin, MD, FASE**

9:20-9:40 AM Anatomy and Mechanisms of Regurgitation of the Tricuspid Valve  
**Jyothy Puthumana, MD, FASE**

9:40-10:00 AM Echo Quantification of Valvular Regurgitation – What the New ASE Guidelines Tell Us  
**James Thomas, MD, FASE**

10:00-10:20 AM Percutaneous Options for Mitral and Tricuspid Valve Disease  
**Mark Ricciardi, MD**

10:20-10:40 AM Imaging Guidance for Percutaneous Mitral Valve Procedures  
**Stephen Little, MD, FASE**

10:40-11:00 AM Refreshment Break and Exhibits

11:00-11:20 AM The Essential Role of Echo During Percutaneous Treatment of Tricuspid Valve Disorders  
**Paul Grayburn, MD, FASE**

11:20-12:30 PM Cases with Panel Discussion and Audience Q&A  
**Vera Rigolin, MD, FASE**  
**Jyothy Puthumana, MD, FASE**  
**Madeline Jankowski, BS, RDCS, FASE**

**Panel:** Paul Grayburn, MD, FASE  
Stephen Little, MD, FASE  
James Thomas, MD, FASE  
Mark Ricciardi, MD  
Charles Davidson, MD  
S. Chris Malaisrie, MD

12:30-1:30 PM Lunch and Exhibits

### SESSION II VALVULAR HEART DISEASE CONTINUED

**Moderator:** Vera Rigolin, MD, FASE

1:30-1:50 PM Contemporary Diagnosis and Therapy for Aortic Valve Stenosis  
**Vera Rigolin, MD, FASE**

1:50-2:10 PM Imaging Guidance for TAVR and Associated Complications  
**Paul Grayburn, MD, FASE**

2:10-2:20 PM How Do I Decide If My Patient Should Undergo TAVR or SAVR?  
**Stephen Little, MD, FASE**

2:20-2:40 PM Long Term Outcomes of Prosthetic Aortic Valves  
**Ranya Sweis, MD**

2:40-3:00 PM Multimodality Imaging of Valvular Heart Disease  
**Waleed Ahmed, MD, MBBS**

3:00-4:00 PM Prosthetic Valve Show and Tell  
**David Mehlmán, MD, FASE**

4:00-4:15 PM Refreshment Break and Exhibits

### SESSION III BREAKOUT WORKSHOPS

4:15-6:00 PM Rapid Fire Learning Through Fascinating Cases  
**Northwestern Medicine Faculty and Staff**

6:00-8:00 PM Welcome Reception  
Warwick Allerton  
Tip Top Tap Ballroom

## Saturday, September 22, 2018

7:30-8:00 AM Registration and Breakfast

### SESSION IV CONGENITAL HEART DISEASE: DISORDERS OF THE AORTIC VALVE AND ROOT

**Moderator:** R. Andrew de Freitas, MD

8:00-8:25 AM Anatomy of the Aortic Valve and Root  
**Saroja Bharati, MD**

8:25-8:40 AM How do I Use Echo For a Pregnant Patient with Aortic Valve Disease?  
**Maria Mendelson, MD**

8:40-9:10 AM Imaging for Congenital Aortic Valve and Root Anomalies  
**R. Andrew de Freitas, MD**

9:10-9:40 AM Novel Surgical Treatment of Aortic Valve Disorders  
**S. Chris Malaisrie, MD**

9:40-10:00 AM Q&A

10:00-10:30 AM Refreshment Break and Exhibits

### SESSION V THE RIGHT VENTRICLE AND PULMONARY HYPERTENSION

**Moderator:** David Mehlmán, MD, FASE

10:30-10:50 AM Anatomy and Function of the Right Ventricle Using Echo  
**Kameswari Maganti, MD, FASE**

10:50-11:10 AM Imaging For Evaluation of Pulmonary Hypertension  
**Benjamin Freed, MD, FASE**

11:10-11:30 AM Novel Therapies of Pulmonary Embolism  
**Daniel Schimmel, Jr., MD, MS**

11:30-12:00 PM Cases:  
**Tia Gordon, BS, RDCS (AE/PE), FASE**  
**Brian Fey, BA, ACS, RDCS (AE/PE), FASE**  
**Inga Vaitenas, ACS, RCS, RCCS, FASE**

12:00-1:00 PM Lunch and Exhibits

## SESSION VI ULTRASOUND ENHANCING AGENTS, STRESS ECHO AND BEYOND

**Moderator:** Kameswari Maganti, MD, FASE

1:00-1:20 PM Ultrasound Enhancing Agents – How Do I Incorporate Into My Lab?  
**Patricia Vassallo, MD, FASE**  
**Bonnie Kane, BS, RDCS, FASE**

1:20-1:40PM Echo Perfusion Imaging – Is It Ready For Prime Time?  
**Jonathan Lindner, MD, FASE**

1:40-2:00 PM Stress Echo Basics and Beyond  
**David Mehlman, MD, FASE**

2:10-2:30 PM Ultrasound Enhancing Agents– What Do the New ASE Guidelines Teach Us?  
**Jonathan Lindner, MD, FASE**

2:30-2:50 PM Don't Forget the Veins!  
**Micah Eimer, MD**

2:50-3:10 PM Therapeutic Uses of Ultrasound Enhancing Agents  
**Jonathan Lindner, MD, FASE**

3:10-3:30 PM How Do I Use Echo to Evaluate Athletes?  
**Allison Zielinski, MD**

3:30-3:45 PM Q&A

3:45-4:00 PM Refreshment Break and Exhibits

## SESSION VII BREAKOUT WORKSHOPS

4:00-6:00 PM Rapid Fire Learning Through Fascinating Cases  
**Northwestern Medicine Faculty and Staff**

## Sunday, September 23, 2018

7:00-7:30 AM Registration and Breakfast

## SESSION VIII HEART FAILURE

**Moderator:** Issam Mikati, MD, FASE

8:00-8:20 AM LVEF in Assessment of Contractility: A Relic from the 20th Century or a Useful Tool for the 21st?  
**Issam Mikati, MD, FASE**

8:20-8:40 AM Demystifying Diastology  
**Sanjiv Shah, MD, FASE**

8:40-9:00 AM What is Strain and How Do I Use It?  
**James Thomas, MD, FASE**

9:00-9:30 AM Heart Failure Cases:  
**Menhel Kinno, MD**  
**Sasan Raissi, MD**

9:30-10:00 AM Refreshment Break & Exhibits

10:00-10:20 AM ABC's of Imaging in Patients with Assist Devices  
**Issam Mikati, MD, FASE**

10:20-10:50 AM Pericardial Constriction, Restriction and Tamponade  
**Steve Devries, MD, FASE**

10:50-11:10 AM Scintillating Heart Failure Cases  
**Robert Silverberg, MD**

11:10-12:00 PM Panel Discussion  
**Panel:** Clyde Yancy, MD, MSc  
**Issam Mikati, MD, FASE**  
**Robert Silverberg, MD**  
**Case Presenters:** Vera Rigolin, MD, FASE  
**David Mehlman, MD, FASE**

12:00-1:00 PM Lunch and Exhibits

## SESSION IX ECHO IN SYSTEMIC DISEASE

**Moderator:** David Mehlman, MD, FASE

1:00-1:20 PM The Essential Role of Echo for the Cardio-Oncology Patient  
**Nausheen Akhter, MD, FASE**

1:20-1:40 PM Imaging in Patients with Autoimmune Disorders  
**Sanjiv Shah, MD, FASE**

1:40-2:00 PM Infiltrative Diseases  
**Benjamin Freed, MD, FASE**

2:00-2:20 PM Cases

## SESSION X ECHO IN NON-VALVULAR STRUCTURAL HEART DISEASE

**Moderator:** James Thomas, MD, FASE

2:20-2:40 PM Alcohol Septal Ablation  
**Kameswari Maganti, MD, FASE**

2:40-3:00 PM Echo in the EP Lab  
**Susan Kim, MD**

3:00-3:30 PM Refreshment Break and Exhibits

## SESSION XI BREAKOUT WORKSHOPS

3:30-5:00 PM Rapid Fire Learning Through Fascinating Cases  
**Northwestern Medicine Faculty and Staff**

5:00 PM Conclusion

# Registration

Registration Fees: (Early Bird Registration ends on 8/21/2018)	Early Bird	Full Fee
Physicians . . . . .	\$675.00	\$930.00
ASE Physicians . . . . .	\$540.00	\$740.00
Sonographer . . . . .	\$550.00	\$745.00
ASE Sonographer . . . . .	\$440.00	\$595.00
Nurse . . . . .	\$450.00	\$745.00
Former NU Fellows . . . . .	\$450.00	\$500.00
Trainee and Other HCP . . . . .	\$450.00	\$500.00

## How to register:

Online: visit <https://northwestern.cloud-cme.com>  
Or mail with check to: Northwestern University  
Bluhm Cardiovascular Institute  
Attn Heather Munn  
251 E Huron, Feinberg 8-504  
Chicago, IL 60611

Please make your check payable to Northwestern University. On site registration will be accepted via CHECK ONLY, however, we strongly encourage you to register in advance.

## Cancellation Policy

\$50 shall be retained to cover administrative expenses should you cancel your registration for any reason. In order to refund the balance, we must receive WRITTEN notice of withdrawal by August 21, 2018. No refunds will be issued thereafter.

PLEASE TYPE OR PRINT

Last Name \_\_\_\_\_ ☐ MD ☐ DO  
☐ PhD ☐ RN


First Name \_\_\_\_\_ ☐ \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Daytime Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email: \_\_\_\_\_  
(Your registration confirmation will be emailed)

 Please indicate any special needs \_\_\_\_\_

Please indicate any dietary needs: \_\_\_\_\_