

# ASCeXAM/ReASCE REVIEW COURSE

The most comprehensive review to help you prepare for the NBE certification examinations.

# 17th ANNUAL



## FINAL PROGRAM

**April 16-19, 2016**  
**Loews Philadelphia Hotel**  
**Philadelphia, PA**

### Course Director

Martin G. Keane, MD, FASE  
Lewis Katz School of Medicine at Temple University  
Philadelphia, PA

### Course Co-Director

Gerard P. Aurigemma, MD, FASE  
University of Massachusetts Medical School  
Worcester, MA

### Featuring:

- Review Lectures
- Illustrative Cases
- Expert Faculty Advice
- Audience Response System



Jointly Provided by ASE and the ASE Foundation

Welcome to the 17<sup>th</sup> Annual ASCeXAM/ReASCE Review Course designed by the American Society of Echocardiography (ASE) as a preparatory course for the National Board of Echocardiography, Inc.™ (NBE) ASCeXAM® and ReASCE® examinations. This course will cover all aspects of cardiovascular ultrasound essential to these examinations, including physics, valvular heart disease, strain and 3D imaging, contrast echocardiography, ischemic heart disease, congenital heart disease, and more.

The expert faculty will emphasize illustrative cases and will use case studies, lectures, and interactive sessions to help prepare you for the ASCeXAM® or ReASCE® examinations. To enhance the learning experience, an audience response system and question and answer sessions will facilitate faculty interaction and self-guided learning. You will have a unique opportunity to interact with and ask questions of the expert faculty.

The printed syllabus that you received at registration includes lectures released by faculty. If you would like additional information for your studies, you have the option to purchase a copy of the recorded lectures at a discounted rate while attending the course.

I hope you will take advantage of this opportunity to ask questions of the faculty and network with the other attendees and exhibitors. Philadelphia is my home and the Loews Philadelphia Hotel is located in the heart of the city. It is within walking distance to some of my favorite attractions, including the Liberty Bell, Independence Hall, Love Park, and more. Please let me know if you need anything while you are here. I look forward to spending time with you in the coming days.



## **Martin G. Keane, MD, FASE**

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Lewis Katz School of Medicine at Temple University  
Philadelphia, PA

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University of Massachusetts Medical School  
Worcester, MA

## **Faculty**

### **Amr E. Abbas, MD, FASE**

Beaumont Health System  
Berkley, MI

### **David B. Adams, RCS, RDCS, FASE**

Duke University Medical Center  
Durham, NC

### **Sidney K. Edelman, PhD**

ESP Ultrasound  
The Woodlands, TX

### **Itzhak Kronzon, MD, FASE**

Lenox Hill Hospital  
New York, NY

### **Steven J. Lester, MD, FASE**

Mayo Clinic  
Scottsdale, AZ

### **Robert A. Levine, MD**

Massachusetts General Hospital  
Boston, MA

### **Sunil Mankad, MD, FASE**

Mayo Clinic  
Rochester, MN

### **Natesa G. Pandian, MD**

Tufts University Medical Center  
Boston, MA

### **Pravin Patil, MD**

Lewis Katz School of Medicine at Temple University  
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### **Michael D. Pettersen, MD**

Rocky Mountain Pediatric Cardiology  
Denver, CO

### **Sabrina D. Phillips, MD, FASE**

Oklahoma Health Science Center  
Oklahoma City, OK

### **Miguel A. Quiñones, MD, FASE**

Methodist DeBakey Heart & Vascular Center  
Houston, TX

### **Lawrence G. Rudski, MD, FASE**

Jewish General Hospital  
Montreal, QC, Canada

### **Dennis A. Tighe, MD, FASE**

University of Massachusetts Medical School  
Worcester, MA

# Program Information

## Overview of the ASCeXAM/ReASCE Review Course

The American Society of Echocardiography (ASE) has specifically designed the ASCeXAM/ReASCE Review Course as a preparatory course for the National Board of Echocardiography, Inc. (NBE) ASCeXAM® and ReASCE® examinations. Lectures given will emphasize illustrative cases and as such will not be “canned talks” from other cardiovascular ultrasound courses.

This Review Course will cover all aspects of cardiovascular ultrasound essential to these examinations, including physics, valvular heart disease, strain and 3D imaging, contrast echocardiography, ischemic heart disease, congenital heart disease, and more.

The expert faculty will use case studies, lectures, and interactive sessions to help prepare attendees for the ASCeXAM® or ReASCE® examinations. An audience response system and question and answer sessions will facilitate faculty interaction and self-guided learning.

The ASCeXAM/ReASCE Review Course gives attendees the unique opportunity to interact with and ask questions of the expert faculty. Attendees will be provided with a black & white printed syllabus that includes lectures released by faculty.

## Target Audience

This course is designed for physicians interested in sitting for the ASCeXAM® (Examination of Special Competence in Adult Echocardiography) or the ReASCE® (Recertification Examination of Special Competence in Adult Echocardiography), as well as physicians and sonographers interested in a broad review of cardiovascular ultrasound.

## Learning Objectives

**Upon completion of this course, participants should be better able to:**

- Explain the essential physical principles of cardiac ultrasound.
- Recognize common ultrasound artifacts and their genesis.
- Estimate systolic function using standard M-mode and 2D echocardiography, as well as newer modalities such as strain imaging and 3D echocardiography.
- Identify and quantitate valvular heart disease severity.
- Describe the application of Doppler in the assessment of hemodynamics and diastolic function.
- Perform clinically relevant calculations of valve areas and intracardiac pressures.
- Explain proven techniques for interpreting stress echocardiographic examinations.
- Differentiate features of cardiac tamponade, constrictive pericarditis, and restrictive cardiomyopathy.
- List appropriate applications of echocardiography.
- Recognize newer applications of echocardiography such as myocardial contrast.

## Increased Learning Outcomes with Real Time Audience Response System

Throughout this course an audience response system called Conferences i/o will be implemented to increase your learning outcomes. You do not need to download a special app, all you need to do is go to ASEcho.cnf.io on any mobile device (smartphone, tablet, laptop) and you will be ready to interact. At the beginning and end of each lecture, the faculty will post broad review questions with a series of multiple choice answers. Only one answer is correct. You will have the opportunity to answer both times and see how you compare to others. This system will also allow the opportunity to ask questions of the faculty.



## Disclaimer

The information provided during this CME activity is for continuing education purposes only and is not meant to substitute for the independent medical judgment of a healthcare provider relative to diagnostic and treatment options of a specific patient's condition.

## Why take the ASCeXAM® or ReASCE® Examinations?

NBE administers the ASCeXAM® and ReASCE® examinations to allow physicians to test and demonstrate their knowledge of echocardiography based on an objective standard. The ASCeXAM® is the Examination of Special Competence in Adult Echocardiography and is intended for those who wish to demonstrate special competence in all areas of echocardiography. The ReASCE® is the Recertification Examination of Special Competence in Adult Echocardiography designed specifically for those who have previously passed the ASCeXAM®. The purpose of ReASCE® is to promote continued excellence in all areas of echocardiography.

Passing these examinations is mandatory when applying for and maintaining NBE certification in any or all of the following areas: transthoracic echocardiography, transesophageal echocardiography, or stress echocardiography.

The examinations are given at testing centers throughout the United States. The test will consist of one case-oriented block and three multiple choice blocks covering the following content areas:

- physical principles of ultrasound
- valvular heart disease
- ventricular size and function, coronary artery disease, cardiomyopathies
- congenital heart disease and fetal echocardiography
- cardiac masses, pericardial disease, myocardial contrast, and newer applications of echocardiography

Questions will test knowledge of M-mode, 2D and Doppler echocardiography, transesophageal, contrast, and stress echocardiography. The case-oriented block will last up to 1½ hours while the other three blocks will last up to 60 minutes per block.

**More details concerning these examinations can be found on the NBE website at [echoboards.org](http://echoboards.org).**



## Accreditation & Designation

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint providership of the American Society of Echocardiography and the American Society of Echocardiography Education and Research Foundation. The American Society of Echocardiography is accredited by the ACCME to provide continuing medical education for physicians.

The American Society of Echocardiography designates this live activity for a maximum of **31 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Daily breakdown of CME credits:

April 16, 2016 = 5.75

April 17, 2016 = 9.00

April 18, 2016 = 8.75

April 19, 2016 = 7.5

Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to **31 MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program**. Participants will earn MOC points equivalent to the amount of CME credits claimed for the activity. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.



ARDMS, CCI, and Sonography Canada recognize ASE's certificates and have agreed to honor the credit hours toward their registry requirements for sonographers.

All or a portion of this educational activity may meet the CME requirement for IAC Echocardiography accreditation.

This activity is eligible for Section 1 credits in the Royal College of Physicians and Surgeons of Canada's Maintenance of Certification (MOC) Program. Participants must log into MAINPORT to claim this activity.

## Disclosure

ASE is committed to ensuring that its educational mission and all sponsored educational programs are not influenced by the special interests of any corporation or individual, and its mandate is to retain only those speakers whose financial interests can be effectively resolved to maintain the goals and educational integrity of the program. While a monetary or professional affiliation with a corporation does not necessarily influence a speaker's presentation, the Essential Areas and Policies of the ACCME require that any relationship that could possibly conflict with the educational value of the program be resolved prior to the educational session and disclosed to the audience. In accordance with these policies, ASE implemented mechanisms prior to the planning and implementation of this CME activity to identify and resolve conflicts of interest for all individuals in a position to control content. Disclosure information is referenced and can be found beginning on page 11 of this program.



## How to Obtain CME

To claim your CME for ASCeXAM/ReASCE Review Course, please follow the steps below using your Mozilla Firefox, Google Chrome or Safari browser. **Internet Explorer will not work.** The deadline to claim credit is **May 20, 2016.**

1. **ASE Members:** Go to ASEcho.org and log on to the Member Portal with your username (email) and password.
  - a. Click on **ASEUniversity and CME Credits** (This will take you directly to your ASEUniversity member profile).
2. **Nonmembers:** Go to ASEUniversity.org and create a new account or log into your existing account.
3. Once logged into ASEUniversity, the top of the page should say, "Hello,\_\_\_\_." Click **"Your Account."**
4. Under "Your Account" click on **"Add Access Code"** and enter the code **"REVIEW2016."**
5. Verify your registration information. Be sure to use the same information that you used to register for the event.
6. Once verified, click **"Take Evaluation"** to claim your CME credit. CME credits are not earned until the entire evaluation has been completed.
  - a. Remember to enter your ABIM number and birthdate if you choose to have MOC points for this meeting submitted to ABIM. There is a space for this indicated on the first page of the evaluation.
7. Your certificate will be available for immediate download and can be found under **"Your Account"** in the **"CE Transcript."**

# Attendee Information and Regulations

## Registration Location and Hours

Attendee registration is located in the Regency Foyer, 2nd Floor Mezzanine.

Saturday, April 16, 2016 .....9:30 am – 6:30 pm

Sunday, April 17, 2016 .....6:30 am – 6:15 pm

Monday, April 18, 2016 .....6:30 am – 6:00 pm

Tuesday, April 19, 2016 .....6:30 am – 4:15 pm

## Food Functions

On Saturday, April 16, there will be an afternoon refreshment break in the Regency Foyer, 2nd Floor Mezzanine (2M). ASE will provide breakfast and coffee breaks for registered attendees in the Regency Foyer, 2nd Floor Mezzanine (2M) from 6:30 am until the start of the session Sunday, Monday, and Tuesday mornings. Please refer to the program schedule for the times of the daily coffee breaks.

Lunch will be provided for attendees in the Millennium Hall, 2nd Floor, Sunday, April 17 through Tuesday, April 19. Lunch times vary, so please refer to the program schedule for times.

## Loews Philadelphia Hotel Dining Options

**Loews Philadelphia Hotel:** The Loews Philadelphia Hotel is located in the heart of Center City Philadelphia and is within walking distance to all of the city's major attractions, including the Liberty Bell, Independence Hall, Love Park, and more.

**Bank & Bourbon:** Right inside the Loews Philadelphia Hotel you will find one of the finest restaurants in the entire city. Bank & Bourbon is where traditional American fare and techniques are re-imagined and made totally new with a modern twist. The chef serves up a fresh take on American classics using seasonal, top-quality ingredients all sourced from local purveyors and artisans. Meanwhile, the Bourbon Master directs a unique barrel-aging program for bourbon, whiskey, and rye spirits. Open 6:30 am – 10:00 pm.

**The Lounge:** The Lobby Lounge offers comfortable conversation areas with chic sofas and chairs. The ideal place to gather or to work, the Lobby Lounge has library tables equipped with outlets for your laptop or smartphone. It is also a great place to grab a drink or a small bite.

## Internet Access

Attendees of the course receive complimentary internet in their guest rooms, the meeting room, and lobby at the Loews Philadelphia.

## On-site FedEx

Located on the lobby floor, the center offers everything for your convention or business needs. Services include copying and digital printing, professional finishing, document creations, signs and graphics, faxing, computer and Internet access, pack-and-ship services as well as handling and managing all guest parcels shipped to the hotel.

## Cell Phone Use

Cell phones should not be used in the educational sessions. For consideration of faculty and other attendees, please remember to turn your cell phones and other electronic devices off or set to vibrate mode.

## Safety

Audience seating is on a first come, first served basis. According to fire code, a session must be closed if the room fills to capacity. Inappropriate behavior or undesirable conduct, including, but not limited to, verbal or physical abuse, whether threatened or performed, will not be permitted or tolerated. You must wear your name badge at all times when attending the session or events.

## Photography/AV Policy

No person may record any portion of the 17th Annual ASCeXAM/ReASCE Review Course, either by video, still or digital photography, audio or any other recording or reproduction mechanism. This includes recording of presentations and supporting audio visual materials and of poster presentations and supporting poster materials.

Taking photos of, or recording the content of, presentation slides is also prohibited and is considered intellectual piracy. Attendees who ignore this policy will be asked to leave the educational session and are at risk of losing their name badge and attendance privileges.

ASE reserves the rights to all recordings or reproductions at ASE meetings. Please be aware that during the 17th Annual ASCeXAM/ReASCE Review Course, attendees, vendors, guests and exhibitors may be photographed or videotaped by ASE staff capturing the event. Some of these photographs or videos may be displayed by ASE in future publication or other materials. By virtue of your attendance, you agree to allow ASE to use photographs of you in its promotional materials.

## Children

ASE does not offer childcare services. Due to limited seating capacity and the highly technical nature of this program, children are not allowed to attend the educational session. For their safety, children must be accompanied by an adult at all times when attending the course events.

# Schedule of Events

## SATURDAY, APRIL 16, 2016

9:30 am **REGISTRATION**  
Regency Foyer, 2nd Floor Mezzanine (2M)

### M. Keane, presiding

Regency Ballroom, 2nd Floor Mezzanine (2M)

12:00 pm **Welcome**  
*M. Keane*

12:20 pm **Overview of ASCeXAM®**  
*D. Tighe*

1:00 pm **Normal Transthoracic/Transesophageal Examination**  
*P. Patil*

2:15 pm **Echocardiographic Evaluation of the Left Ventricle**  
*M. Keane*

3:15 pm **VISIT EXHIBITS & REFRESHMENT BREAK**  
Regency Foyer, 2nd Floor Mezzanine (2M)

### G. Aurigemma, presiding

3:45 pm **Endocarditis: The Role of Echocardiography**  
*P. Patil*

4:30 pm **Right Heart Hemodynamics: Echocardiography - PA Catheter in a Box**  
*I. Kronzon*

5:15 pm **Concepts of Imaging/Knobology/Artifacts**  
*D. Adams*

5:45 pm **Read with the Experts: Cases and Audience Response Questions**  
*G. Aurigemma, I. Kronzon*

6:30 pm **ADJOURN**

## SUNDAY, APRIL 17, 2016

6:30 am **REGISTRATION, VISIT EXHIBITS & BREAKFAST**  
Regency Foyer, 2nd Floor Mezzanine (2M)

### M. Keane, presiding

Regency Ballroom, 2nd Floor Mezzanine (2M)

7:20 am **Overview**  
*M. Keane*

7:30 am **Spectral Doppler Cases**  
*G. Aurigemma, I. Kronzon*

8:15 am **Classic M-Mode Echocardiography**  
*I. Kronzon, G. Aurigemma*

9:00 am **Myocardial Imaging: Tissue Doppler and Strain Imaging**  
*S. Lester*

9:45 am **VISIT EXHIBITS & REFRESHMENT BREAK**  
Regency Foyer, 2nd Floor Mezzanine (2M)

10:15 am **Cardiac Masses**  
*D. Tighe*

10:45 am **Anatomy of the Mitral Valve and Quantification of Mitral Regurgitation**  
*S. Mankad*

11:30 am **Mitral Valve Stenosis**  
*R. Levine*

12:15 pm **VISIT EXHIBITS & LUNCH**  
Lunch is served in the Millennium Hall, 2nd Floor

### G. Aurigemma, presiding

1:15 pm **Echocardiographic Evaluation of Mitral Valve Prostheses**  
*D. Tighe*

2:00 pm **Anatomy of the Aortic Valve and Spectrum of Aortic Stenosis**  
*M. Keane*

2:45 pm **Aortic Stenosis: Severe by Gradient but not Valve Area**  
*A. Abbas*

3:30 pm **VISIT EXHIBITS & REFRESHMENT BREAK**  
Regency Foyer, Second Floor Mezzanine (2M)

4:00 pm **Etiology and Quantification of Aortic Regurgitation**  
*M. Keane*

4:45 pm **Echocardiographic Evaluation of Aortic Valve Prostheses**  
*A. Abbas*

5:30 pm **Valve Disease: Board Review Questions**  
*A. Abbas, M. Keane, D. Tighe*

6:15 pm **ADJOURN**



# Schedule of Events

## MONDAY, APRIL 18, 2016

6:30 am **REGISTRATION,  
VISIT EXHIBITS & BREAKFAST**  
Regency Foyer, 2nd Floor Mezzanine (2M)

**M. Keane, presiding**  
Regency Ballroom, 2nd Floor Mezzanine (2M)

7:20 am **Overview**  
*M. Keane*

7:30 am **Echocardiographic Evaluation of the Right Ventricle**  
*L. Rudski*

8:15 am **Tricuspid and Pulmonary Valve Disease**  
*L. Rudski*

9:00 am **Basic Ultrasound Physics**  
*S. Edelman*

9:45 am **VISIT EXHIBITS & REFRESHMENT BREAK**  
Regency Foyer, 2nd Floor Mezzanine (2M)

10:15 am **Typical Board Questions in Physics**  
*S. Edelman*

11:00 am **Artifacts: Theory and Illustrative Examples**  
*R. Levine*

11:45 am **Read With the Experts: Cases and Audience Response Questions**  
*M. Keane, R. Levine, S. Mankad*

12:30 pm **VISIT EXHIBITS & LUNCH**  
Lunch is served in the Millennium Hall, 2nd Floor

**G. Aurigemma, presiding**

1:30 pm **Hypertrophic Cardiomyopathy or Phenocopy?**  
*S. Lester*

2:15 pm **Echocardiography in Systemic Disease**  
*S. Mankad*

3:00 pm **Stress Echocardiography: Theoretical and Practical Considerations**  
*S. Lester*

3:45 pm **VISIT EXHIBITS & BREAK**  
Regency Foyer, 2nd Floor Mezzanine (2M)

4:15 pm **Echo in Ischemic Heart Disease and Myocardial Infarction**  
*D. Tighe*

5:00 pm **Stress Echocardiography: Illustrative Cases**  
*G. Aurigemma, S. Lester, S. Mankad*

6:00 pm **ADJOURN**

## TUESDAY, APRIL 19, 2016

6:30 am **REGISTRATION,  
VISIT EXHIBITS & BREAKFAST**  
Regency Foyer, 2nd Floor Mezzanine (2M)

**G. Aurigemma, presiding**  
Regency Ballroom, 2nd Floor Mezzanine (2M)

7:20 am **Overview**  
*G. Aurigemma*

7:30 am **Commonly Encountered Congenital Heart Disease in Adults**  
*S. Phillips*

8:15 am **Congenital Heart Disease: An Approach for Simple and Complex Anomalies**  
*M. Pettersen*

9:00 am **Congenital Heart Disease Cases**  
*M. Pettersen, S. Phillips*

9:45 am **VISIT EXHIBITS & REFRESHMENT BREAK**  
Regency Foyer, 2nd Floor Mezzanine (2M)

10:15 am **Echocardiographic Evaluation of Diastolic Function**  
*M. Quiñones*

11:15 am **Echocardiographic Evaluation of Hemodynamics in Pericardial Disease**  
*N. Pandian*

12:00 pm **Case Studies in Diastolic Dysfunction and Pericardial Disease**  
*G. Aurigemma, N. Pandian, M. Quiñones*

1:00 pm **VISIT EXHIBITS & LUNCH**  
Lunch is served in the Millennium Hall, 2nd Floor

**M. Keane, presiding**

2:00 pm **Contrast Echocardiography**  
*S. Lester*

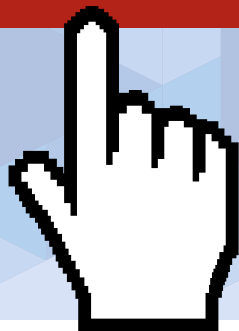
2:45 pm **Applications of 3D Imaging: A Case-based Approach**  
*S. Mankad*

3:30 pm **Diseases of the Aorta**  
*N. Pandian*

4:15 pm **ADJOURN**



# The new ASCeXAM/ReASCE Online **PRACTICE EXAM SIMULATION**



The **ASCeXAM/ReASCE Online Practice Exam Simulation** is designed to prepare physicians for the National Board of Echocardiography's ASCeXAM or ReASCE certification examinations. Developed by renowned experts in the field of echocardiography, the test bank consists of 300 multiple choice questions containing over 400 images and videos covering: the physical principles of cardiovascular ultrasound; valvular heart disease; ventricular size and function; coronary artery disease and cardiomyopathies; congenital heart disease and fetal echocardiography; as well as cardiac masses, pericardial disease, myocardial contrast, and the latest applications in echocardiography. M-mode, 2-Dimensional, and Doppler echocardiography are also covered.

In addition to objective-based questions, case studies are included to evaluate your knowledge of the field. After purchasing this exam simulation, you have access for 18 weeks and are given the opportunity to take two simulated exams consisting of 150 questions each, assessing your skills and knowledge in all areas. You may repeat these exams a total of six times. The grading and feedback for all six attempts will be saved. In addition to an overall grade, a percentage breakdown of your incorrect and correct answers over the five categories will be provided for each attempt, allowing you to focus your study accordingly. Feedback includes explanations of the correct and incorrect answers, offering valuable instruction.

**The American Society of Echocardiography strives to be  
the premier source for ASCeXAM/ReASCE preparation.**

**Take advantage of this valuable preparation tool**

**\$199 ASE Members**

**\$250 Nonmembers**



**Visit [ASEUniversity.org](http://ASEUniversity.org) to purchase now!**



# Exhibit Information

## Exhibit Location and Hours

Exhibits are located in the Regency Foyer, 2nd Floor Mezzanine (2M) during the dates and hours listed below.

Saturday, April 16, 2016 .....3:00 pm – 6:30 pm  
Sunday, April 17, 2016 .....6:30 am – 6:15 pm  
Monday, April 18, 2016 .....6:30 am – 6:00 pm  
Tuesday, April 19, 2016 .....6:30 am – 2:00 pm



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We are proud of the reputation we have built as an industry leader in diagnostic ultrasound. Known for our unparalleled image quality, superior system reliability and intuitive use of cutting edge technology, we remain the ideal choice for exceptional diagnostic ultrasound imaging in the field of cardiovascular medicine.



**Lantheus Medical Imaging, Inc.**  
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**United States**  
**Phone: 800-362-2668**  
**lantheus.com**

Lantheus Medical Imaging, a global leader in developing, manufacturing, selling and distributing innovative diagnostic imaging agents primarily used for the diagnosis of cardiovascular diseases, is headquartered in North Billerica, Massachusetts, with offices in Puerto Rico, Canada and Australia.



**National Board of Echocardiography, Inc. (NBE)**  
**1500 Sunday Drive, Suite 102**  
**Raleigh, NC 27607**  
**United States**  
**Phone: 919-861-5582**  
**Fax: 919-787-4916**  
**echoboards.org**

As the national examination and certification body for Clinical Echocardiography, the NBE® serves as a not-for-profit corporation established to publically recognize those physicians who have completed an approved training program in echocardiography and have passed the ASCeXAM®.



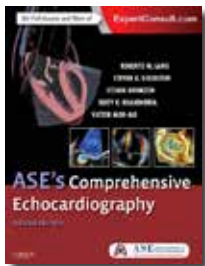
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This textbook is truly comprehensive!... I could sell all the other textbooks and be perfectly happy keeping this book and Reynold's pocket reference.”

- Amazon Reviewer



- Written by world experts from the American Society of Echocardiography.
- A unique multimedia resource with text, case studies, and online components.
- Over 200 chapters covering the latest uses of echocardiography, including the most recent 2D and 3D advances.
- Everything you need to assess cardiac anatomy and function for more accurate diagnosis and evaluation of heart disease.
- Includes an online version with an outstanding library of slides and videos of case presentations allowing you to view dynamic echocardiographic clips of various cardiac pathologies.



**Visit the ASE Registration Desk at the Review Course or go to [ASEMarketPlace.com](http://ASEMarketPlace.com) to purchase ASE's Comprehensive Echocardiography textbook.**

# Faculty Disclosures

## **The following faculty members do not have any relationships with industry/commercial supporters to disclose:**

Amr Abbas, MD, FASE  
Gerard P. Aurigemma, MD, FASE  
David B. Adams, RCS, RDCS, FASE  
Sidney K. Edelman, PhD  
Martin G. Keane, MD, FASE  
Steven J. Lester, MD, FASE  
Robert A. Levine, MD  
Sunil Mankad, MD, FASE  
Natesa G. Pandian, MD  
Pravin Patil, MD  
Michael D. Pettersen, MD  
Sabrina D. Phillips, MD, FASE  
Miguel Quiñones, MD  
Lawrence G. Rudski, MD, FASE  
Dennis A. Tighe, MD, FASE

## **The following faculty members do have financial relationships with industry/commercial supporters to disclose:**

Itzhak Kronzon, MD, FASE- Philips Healthcare (Consultant/ Advisor)

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