



**DEPARTMENT OF
CARDIOVASCULAR DISEASES**

BASIC TO ADVANCED ECHOCARDIOGRAPHY

From the Blue Ridge Mountains of Asheville



ASHEVILLE, NORTH CAROLINA

THE OMNI GROVE PARK INN

MAY 17–20, 2017

IN COLLABORATION WITH
WAKE FOREST Baptist Health – Heart & Vascular Center

COURSE DESCRIPTION

The course will begin with a discussion of echocardiographic assessment of left and right ventricular function, including presentations on diastolic function and strain imaging for assessing myocardial function. We will then discuss a broad range of disease states for which echocardiography is useful, including ischemic heart disease, valvular heart disease, pericardial disease, and cardiomyopathies. The presentations will include basic concepts as well as advanced techniques including 3-D imaging and strain imaging. Throughout the course many cases will be presented.

Unique Features:

- Faculty members are clinical sonographers and echocardiologists
- Easy access to faculty members during the entire conference
- Afternoon on pediatric/ adult congenital echocardiography
- Lab accreditation (IAC Echocardiography)
- Live scanning hands-on
- Presentations involving multimodality imaging

COURSE LEARNING OBJECTIVES

Upon conclusion of this program, participants should be able to:

- Apply Doppler principles and hemodynamics to the assessment of valvular heart disease, including systematic assessment of prosthetic valves
- Use 2-D, Doppler strain methods to assess myocardial function
- Illustrate the appropriate use of echo Doppler in myocardial and pericardial disease
- Recognize the utility of echocardiography TEE including 3-D in the interventional practice
- Integrate the application of echocardiography in heart failure and the treatment
- Recognize clinical applications of stress echocardiography

Attendance at this Mayo course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

INTENDED AUDIENCE

This course is intended for adult cardiologists, cardiac sonographers, cardiology fellows, surgeons, anesthesiologists, and those who have basic experience and knowledge of echocardiography. This course is designed to further advance their experience in clinical application of echocardiography.

CREDIT

Mayo Clinic College of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Mayo Clinic College of Medicine designates this live activity for a maximum of 26.25 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other Health Care Professionals

A certificate of attendance will be provided to other health care professionals for requesting credits in accordance with state nursing boards, specialty societies, or other professional associations.

Attendees should ensure in advance that their credentialing or licensing organization accepts *AMA PRA Category 1 Credits™* from the sponsor of this activity.

GRANTS AND EXHIBITS

At the time of this printing, a complete listing of commercial supporters (financial or in-kind) was not available. Appropriate acknowledgment will be given to all supporters at the time of the meeting.

Exhibits will be available for viewing at all scheduled breakfast and breaks.

DATE AND LOCATION

The Basic to Advanced Echocardiography course will be held May 17-20, 2017. Course headquarters will be located at [The Omni Grove Park Inn](#), 290 Macon Avenue, Asheville, NC 28804.
Phone: 828-252-2711/ Fax: 828-252-7053

All indoor sessions will be held on the 10th floor of the hotel.

General Session: Heritage A & B, Sammons Wing, 10th Floor

Exhibits/Breaks/Breakfast: Heritage Ballroom Foyer, Sammons Wing, 10th Floor

Reception: Skyline Room, Mountainview Terrace, Sammons Wing, 8th Floor

REGISTRATION

Registration is available [online](#). The registration fee includes tuition, comprehensive course syllabus, continental breakfasts, break refreshments, lunch, and welcome reception. Although it is not Department of Cardiovascular Medicine (CV CME) policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is advised. A letter of confirmation will be sent upon receipt of payment and completed registration form on-line. Please present the confirmation letter when checking in at the meeting registration desk.

For additional information, contact:

Mayo Clinic Cardiovascular Diseases
200 1st Street SW/ GO6-138
Rochester, MN 55905

[Website](#)

E-mail: cvcme@mayo.edu

Phone: 800-283-6296 or 507-266-6703

TRAVEL/ AIRPORT

Asheville Regional Airport (AVL) is the recommended airport for arrival. Taxi or rental car is recommended mode of transportation from the airport. The hotel is located approximately 20 minutes from the airport.

Driving directions from the airport:

- Take I-240 into Asheville.
- Take Exit 5B/ Charlotte Street
- From I-240 East, turn left on Charlotte Street
- From I-240 West, turn right on Charlotte Street.
- Proceed north on Charlotte Street for approximately 0.7 miles.
- Turn right on Macon Avenue and continue for 0.8 miles.
- The Omni Grove Park Inn entrance will be on your left.

Travel arrangements are the sole responsibility of the individual registrant.

LODGING ACCOMMODATIONS

Nestled in the Blue Ridge Mountains, just beyond Asheville downtown, [The Omni Grove Park Inn](#) is a sanctuary for the soul. Enchanting mountain vistas, lush green fairways, warm Southern charm, and passionate hospitality make The Omni Grove Park Inn an oasis for family vacations. The Omni Grove Park Inn is two miles from downtown Asheville, North Carolina. The hotel is located a short drive to the Biltmore Estate, Blue Ridge Parkway, North Carolina Arboretum, and Great Smoky Mountains National Park.

Downtown Asheville is a vibrant and historic district with colorful sights, historic buildings and spectacular Art Deco architecture. Explore the charming streets with a collection of restaurants, art galleries, quaint bookstores, eclectic shops, trendy coffee houses, and live music venues.

Located three miles from The Omni Grove Park Inn, the Blue Ridge Parkway is named America's favorite drive and connects the Great Smoky Mountains National Park to Shenandoah National Park in Virginia. Enjoy stunning vistas of mountains, meadows, old farms, and diverse flora and fauna. Discover miles of hiking trails, picnic areas, and scenic overlooks.

To secure your room at [The Omni Grove Park Inn](#), please call **800-438-5800** and state that you will be attending the **ECHO** program. The room rate is **\$249 single/double**. Note, the resort fee has been waived for this group event. The resort fee includes: local calling, in-room high speed internet access, entrance to fitness center, in-room coffee/ tea, and newspaper available upon request.

[On-line Reservations](#)

The room block is scheduled to be held until **Monday, April 17, 2017** but has been sold out before this date in the past. Therefore, we advise you to register for the program and reserve your lodging as soon as possible.

Check-in: 4:00 p.m.
Check-out: 11:00 a.m.

We encourage participation by all individuals. If you have a disability, advance notification of any special needs will help us better serve you.

Lodging arrangements are the sole responsibility of the individual registrant.

Department of Cardiovascular Diseases is not responsible for expenses incurred by an individual who is not confirmed and for whom space is not available at the meeting. Costs incurred by the registrant such as airline or hotel fees or penalties are the responsibility of the registrant.

PARKING

Parking is available at the hotel for an additional cost.

SOCIAL PROGRAMS

Welcome Reception – Wednesday, May 17, 2017 – 6:00-7:00 p.m.

Attendees and their guest(s) are cordially invited to join the course faculty for the Welcome Reception on Wednesday, May 17. This casual reception welcomes you to Asheville, officially opens the course, and offers you the perfect opportunity to make connections with existing and new colleagues.

RECREATION/ LEISURE ACTIVITIES

The hotel concierge will be pleased to assist with any tours.

Biltmore Estate – Discount vouchers will be provided.

Golfing

Harrah's Cherokee Casino

Natahala Outdoor Center including river rafting, kayak and canoe trips, mountain biking, hiking, fly fishing, zip lines, climbing and fishing adventures.

Blue Ridge Parkway

Great Smoky Mountain National Park

Great Smoky Mountain Railroad Excursions

Star Watch Night Vision Tours

Grandfather Mountain State Park

North Carolina Arboretum

NEXT YEAR'S DATES

Next year's course will be held at the Marriott in Hilton Head Island, SC. Conference dates are May 16-19, 2018.

FACULTY

Fletcher A. Miller, Jr., M.D., FACC, FAHA, FASE

Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases; Past Director, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory, Mayo Clinic, Rochester, MN

Roger L. Click, M.D., Ph.D., FACC

Associate Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Naser M. Ammash, M.D., FACC, FASE

Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases; Vice-Chair for Clinical Practice, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN and Jacksonville, FL

Pamela R. Burgess, RDCS, RDMS, RVT, FASE

Clinical Manager, Cardiac Ultrasound and Stress Testing Lab, Wake Forest Baptist Health, Winston-Salem, NC

Mayo Faculty

Lori A. Blauwet, M.D., M.A., FACC, FAHA, FASE

Associate Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Crystal R. Bonnichsen, M.D.

Assistant Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases and Internal Medicine, Mayo Clinic, Rochester, MN

Allison K. Cabalka, M.D., FACC, FASE

Professor of Pediatrics, Mayo Clinic; Consultant, Division of Pediatric Cardiology, Mayo Clinic, Rochester, MN

Hari P. Chaliki, M.D., FACC

Associate Professor of Medicine, Mayo Clinic; Consultant, Division of Cardiovascular Diseases; Director, Valvular Heart Disease Clinic, Mayo Clinic, Scottsdale, AZ

Michael W. Cullen, M.D., FACC

Assistant Professor of Medicine, Mayo Clinic; Medical Director for the SE Minnesota Regional Cardiologists; Senior Associate Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Regina (Gina) M. Harper, RDCS

Clinical Sonographer, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory, Mayo Clinic, Rochester, MN

Garvan C. Kane, M.D., Ph.D., FASE, FCCP

Associate Professor of Medicine, Mayo Clinic; Co-Director, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory; Director of Structural Heart Disease Research; Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Barry L. Karon, M.D., FACC, FASE

Assistant Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Rebecca (Becky) C. Klug, RDCS, (RT) R
Clinical Instructor, Mayo School of Health Sciences Echocardiography Program; Clinical and Congenital Sonographer, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory, Mayo Clinic, Rochester, MN

Amy W. Pollak, M.D., M.S.
Assistant Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Diseases, Mayo Clinic, Jacksonville, FL

Jeremy J. Thaden, M.D.
Senior Associate Consultant, Mayo Clinic; Department of Cardiovascular Diseases, Mayo Clinic, Rochester, MN

Guest Faculty

Beverly Gorman, RDCS
Director of Accreditation – IAC Echocardiography, Ellicott City, MD

Frederick W. Kremkau, Ph.D., FACR, FAIMBE, FAIUM, FASA
Past President, American Institute of Ultrasound in Medicine; Professor and Co-Director, Program for Medical Ultrasound, Center for Applied Learning, Wake Forest University School of Medicine, Winston-Salem, NC

Thomas Ryan, M.D., FACC, FASE
Professor of Medicine; Director, The Ohio State University Heart Center; John G. and Jeanne Bonnet McCoy Chair in Cardiovascular Medicine, Davis Heart & Lung Research Institute, Columbus, OH

FACULTY DISCLOSURE

As a provider accredited by ACCME, Mayo Clinic College of Medicine (Mayo School of Continuous Professional Development) must ensure balance, independence, objectivity and scientific rigor in its educational activities. Course director(s), planning committee, faculty, and all others who are in a position to control the content of this educational activity are required to disclose all relevant financial relationships with any commercial interest related to the subject matter of the educational activity. Safeguards against commercial bias have been put in place. Faculty also will disclose any off-label and/ or investigational use of pharmaceuticals or instruments discussed in their presentation. Disclosure of this information will be published in course materials so those participants in the activity may formulate their own judgments regarding the presentation.

TUESDAY, MAY 16, 2017

6:00-7:00 p.m. Pre-Registration – Heritage Foyer

WEDNESDAY, MAY 17, 2017

7:00 a.m. Registration and Continental Breakfast – Heritage Foyer

7:30 a.m. Welcome
Roger L. Click, M.D., Ph.D.

FUNDAMENTALS

Dr. Roger L. Click, presiding

7:40 a.m. Cases - Teasers
Drs. Miller, Click, and Ammash

8:00 a.m. Assessment of LV Systolic Function in 2017
Amy W. Pollak, M.D.

8:30 a.m. Diastolic Function Updates
Fletcher A. Miller, Jr., M.D.

9:00 a.m. Real or Echo Artifact?
Frederick W. Kremkau, Ph.D. and Pam Burgess, RDCS, RDMS, RVT

9:30 a.m. RV Function in 2017
Garvan C. Kane, M.D., Ph.D.

10:00 a.m. Panel Discussion
Drs. Pollak, Miller, Kremkau, and Kane; Dr. Click, moderator

10:15 a.m. Refreshment Break

10:45 a.m. Challenging Cases for Assessment of Pulmonary Pressures
Michael W. Cullen, M.D.

11:00 a.m. Echo in Congestive Heart Failure: When and Why
Barry L. Karon, M.D.

11:30 a.m. Echo in Restrictive Cardiomyopathies
Naser M. Ammash, M.D.

12:00 p.m. Challenging Heart Failure Case
Lori A. Blauwet, M.D.

12:15 p.m. Panel Discussion
Drs. Cullen, Karon, Ammash, and Blauwet; Dr. Click, moderator

12:30 p.m. Lunch – Heritage C

ECHO FOR MYOCARDIAL AND PERICARDIAL DISEASE

Dr. Fletcher A. Miller, Jr., presiding

1:30 p.m. Echo Assessment of HCM
Hari P. Chaliki, M.D.

- 2:00 p.m. Cardiac Constriction
Barry L. Karon, M.D.
- 2:30 p.m. Strain for Myocardial Diseases
Fletcher A. Miller, Jr., M.D.
- 3:00 p.m. Panel Discussion
Drs. Chaliki and Karon; Dr. Miller, moderator
- 3:15 p.m. Refreshment Break

PARELLEL SESSIONS

	SONOGRAPHERS (Foyer)	TEE (Main Ballroom)
3:45-4:15 p.m.	Sonographer Hands-on <i>Ms. Burgess, Ms. Harper, and Ms. Klug</i>	TEE for Source of Embolism Cases <i>Roger L. Click, M.D., Ph.D.</i>
4:15-4:45 p.m.		TEE for Endocarditis Cases <i>Jeremy J. Thaden, M.D.</i>
4:45-5:00 p.m.		Questions and Answers
5:00 p.m.	Adjourn	Adjourn

- 6:00-7:00 p.m. Welcome Reception – Skyline Room, Mountainview Terrace, Sammons Wing, 8th Floor
(Attendees, guests, and faculty invited.)

THURSDAY, MAY 18, 2017

- 7:00 a.m. Continental Breakfast – Heritage Foyer

ISCHEMIC HEART DISEASE/AORTIC DISEASE

Dr. Naser M. Ammash, presiding

- 7:30 a.m. Contrast Echocardiography
Thomas Ryan, M.D.
- 8:00 a.m. Cases in Exercise and Pharmacologic Stress Echo for Coronary Disease
Michael W. Cullen, M.D.
- 8:30 a.m. Echo for Acute Coronary Syndromes
Roger L. Click, M.D., Ph.D.
- 9:00 a.m. Cases for Coronary Artery Disease
Amy W. Pollak, M.D.
- 9:30 a.m. Panel Discussion
Drs. Ryan, Cullen, Click, and Pollak; Dr. Ammash, moderator
- 10:00 a.m. Refreshment Break
- 10:30 a.m. Surprises in Stress Echo – Good and Bad
Thomas Ryan, M.D.
- 11:00 a.m. Multimodality Imaging for Acute Aortic Syndromes
Crystal R. Bonnicksen, M.D.

- 11:30 a.m. Value of Echo vs CT in Coronary Artery Anomalies
Naser M. Ammash, M.D.
- 12:00 p.m. Panel Discussion
Drs. Ryan and Bonnicksen; Dr. Ammash, moderator
- 12:30 p.m. Adjourn for the Afternoon

IAC Echocardiography Accreditation Workshop – Bring your laptop to work on your application.

Ms. Beverly Gorman (Sr. Director IAC) and Ms. Pamela R. Burgess

Time	Agenda Item
3:00-3:05 p.m.	Welcome – <i>Gorman, Burgess</i>
3:05-3:40 p.m.	<p>Brief overview of the IAC Echocardiography history and information regarding the structure of the IAC</p> <ul style="list-style-type: none"> • Why it was created, history. • Purpose of accreditation, what it is, what it is not. • Who the sponsoring organizations are and their role. • IAC Echocardiography Board of Directors and their responsibilities. • About the standards, basis for the program, minimum standards. • Company mission - improving health care through accreditation®. • Reimbursement – what the IAC does and doesn't do.
3:40-4:30 p.m.	<p>Steps to earning accreditation, reaccreditation</p> <ul style="list-style-type: none"> • Gather information – what is needed to complete the application. • Internal self-assessment – what it is and how to perform, using the standards as their guide (attendees are encouraged bring their policies, protocols). Tips and questions answered on how to review. • Case study requirements – how many, what pathology, how to pick cases (what if it's not a perfect case?), final reports (how to review). • Sample documents.
4:30-4:45 p.m.	Dinner Break
4:45-5:30 p.m.	<p>Quality Improvement</p> <ul style="list-style-type: none"> • What it is, detailed discussion on the required QI measures (what they are, how much is required and how often). • QI tool – if used, meets the requirements, view webcast. Used for audits. • QI meetings, what should be discussed, how many, who needs to attend, meeting minutes.
5:30-5:45 p.m.	The online application – overview of the application, questions and attachments
5:45-5:50 p.m.	Pre-submission check – what it is and what it isn't
5:50-6:00 p.m.	Final submission, what happens next
6:00-6:20 p.m.	<p>Application decisions</p> <ul style="list-style-type: none"> • What they are and what to do if delayed. • Decision letters and application review findings
6:20-6:30 p.m.	How your lab should run on a daily basis
6:30-6:40 p.m.	Resources – overview of the website, samples, On Demand, live webinars
6:40-7:00 p.m.	Closing Q&A

FRIDAY, MAY 19, 2017

7:00 a.m. Continental Breakfast – Heritage Foyer

ECHO FOR VALVE DISEASE

Dr. Roger L. Click, presiding

7:30 a.m. Echo for Aortic Stenosis: How To
Fletcher A. Miller, Jr., M.D.

8:00 a.m. Low Output Low Gradient Aortic Stenosis
Hari P. Chaliki, M.D.

8:30 a.m. Echo for Aortic Regurgitation
Thomas Ryan, M.D.

9:00 a.m. Echo for Right-Sided Valves
Garvan C. Kane, M.D., Ph.D.

9:30 a.m. Panel Discussion
Drs. Miller, Chaliki, Ryan, and Kane; Dr. Click, moderator

10:00 a.m. Refreshment Break

10:30 a.m. Echo for Mitral Regurgitation: How To Quantify
Lori A. Blauwet, M.D.

11:00 a.m. 3-D/TEE for Mitral Valve Interventions
Jeremy J. Thaden, M.D.

11:30 a.m. Cases in Stress Echo for Hemodynamic Assessment
Garvan C Kane, M.D., Ph.D.

12:00 p.m. Panel Discussion
Drs. Blauwet, Thaden, and Kane; Dr. Click, moderator

12:30 p.m. Lunch – Heritage C

PARELLEL SESSIONS

	CONGENITAL HEART DISEASE (Main Ballroom) <i>Dr. Naser M. Ammash, presiding</i>	TEE SIMULATOR (Foyer) <i>Dr. Fletcher A. Miller, Jr., Ms. Klug, and Ms. Harper</i>
1:30-2:00 p.m.	Echocardiography in the Evaluation of RV Enlargement. Where Is That Shunt? <i>Naser M. Ammash, M.D.</i>	
2:00-2:30 p.m.	Echo in Postop Simple Congenital Heart Disease <i>Crystal R. Bonnicksen, M.D.</i>	
2:30-3:00 p.m.	Interventional Echo for Congenital Heart Disease <i>Allison K. Cabalka, M.D.</i>	
3:00-3:30 p.m.	Panel Discussion <i>Drs. Ammash, Bonnicksen, and Cabalka; Dr. Ammash, moderator</i>	
3:30 p.m.	Adjourn	Adjourn

SATURDAY, MAY 20, 2017

7:00 a.m. Continental Breakfast – Heritage Foyer

MORE VALVULAR AND SPECIAL TOPICS

Dr. Roger L. Click, presiding

7:30 a.m. Echo for Aortic Prostheses
Jeremy J. Thaden, M.D.

8:00 a.m. Echo for TAVR: Pre and Post
Hari P. Chaliki, M.D.

8:30 a.m. Echo for Mitral Prostheses
Lori A. Blauwet, M.D.

9:00 a.m. Cardiac Masses
Roger L. Click, M.D., Ph.D.

9:30 a.m. Panel Discussion
Drs. Thaden, Chaliki, and Blauwet; Dr. Click, moderator

9:45 a.m. Refreshment Break

10:00 a.m. Case Competition: You Be the Judge!
Dr. Thomas Ryan, moderator
Drs. Bonnicksen, Cullen, Pollak, Kremkau, Karon, Cabalka, and Ms. Burgess

11:45 a.m. Adjourn

Registration Online

Registration Fee:

Course Registration (M D, PhD, DO, PharmD)	\$750.00
Course Registration (Fellows in Training, Sono, RN)	\$565.00

Mayo Clinic Department of Cardiovascular Diseases implemented an online conference registration system in January 2012. If this is your first time using the online system, you will need to create a profile. The attendee's email address is required upon registration. A letter of confirmation and receipt will be forwarded to this email address upon receipt of submitted registration and payment. Present this letter when checking in at the meeting registration desk.

The registration fee includes tuition, electronic course syllabus, continental breakfasts, break refreshments, lunch, and reception.

Although it is not Department of Cardiovascular Diseases policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is advised. Enrollment for this program is limited.

For additional information, contact:

Cardiovascular Continuing Education
200 First Street SW – Gonda 6-138
Rochester, MN 55905

E-mail: cvcme@mayo.edu

Phone: 800-283-6296 or 507-266-6703

Website

CANCELLATION POLICY

If you cancel your participation in this course, your registration fee, less a \$75 administrative fee, will be refunded when written notification is received by Department of Cardiovascular Diseases (CV CME) before Wednesday, May 3, 2017 (cvcme@mayo.edu or fax#: 507-266-7403). No refunds will be made on or after Wednesday, May 3, 2017. Canceled registrations are non-transferable.

CV CME reserves the right to cancel or postpone any course due to unforeseen circumstances. In the unlikely event CV CME must cancel or postpone this course, CV CME will refund the registration fee, but is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/ travel/ lodging agencies.