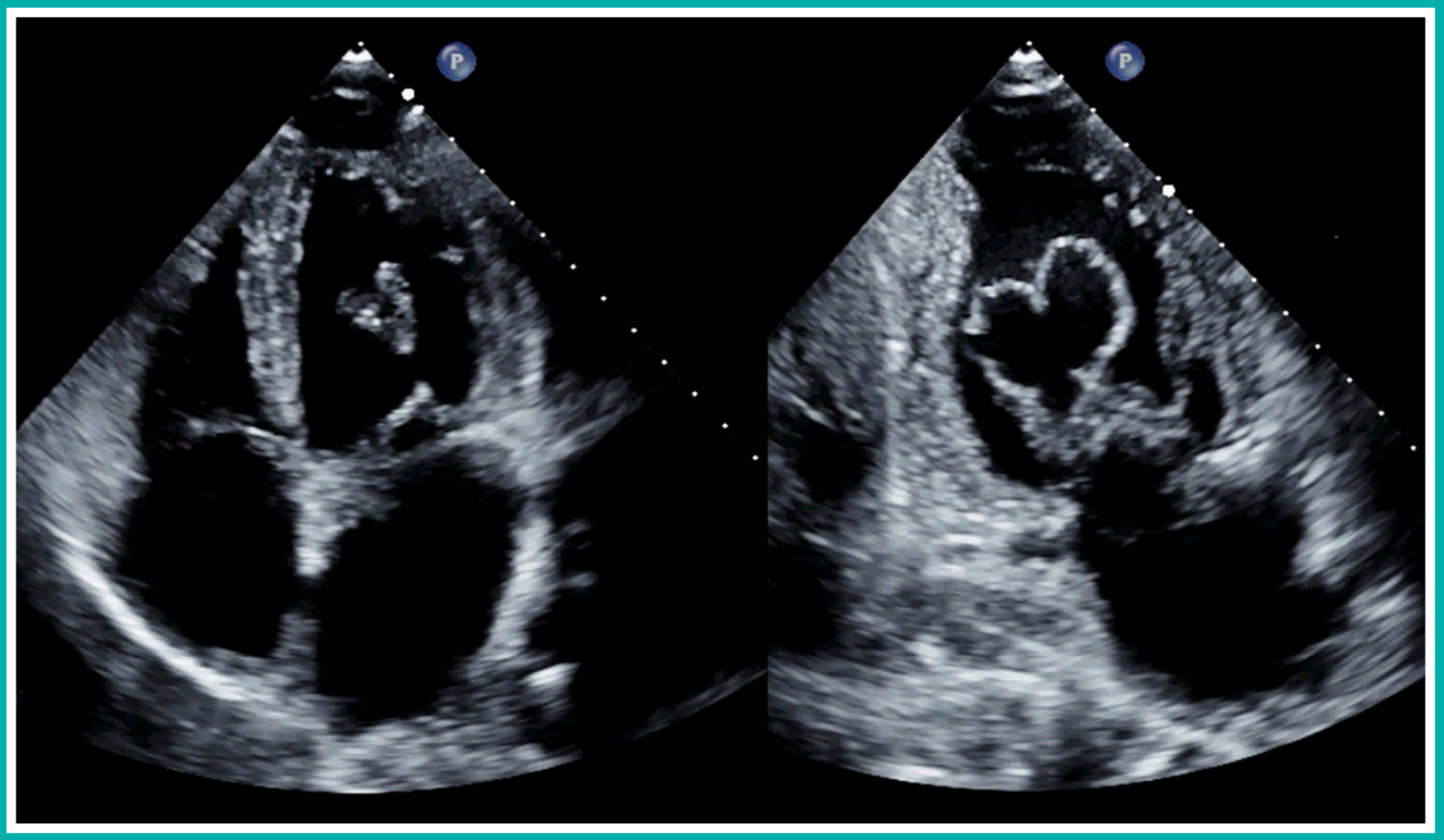
ECHO



VOLUME 12 ISSUE 1 **JANUARY 2023**

2023 EDUCATION CALENDAR

FEBRUARY

Structural Heart Intervention and Imaging 2023: A Practical Approach

February 1-3, 2023
Hyatt Regency La Jolla at Aventine
San Diego, CA

Provided by Scripps Health and in cooperation with ASE

Valve Disease, Structural Interventions, and Diastology Summit

February 2-5, 2023
Eden Roc Miami Beach
Miami, FL

Provided by Cleveland Clinic Educational Foundation and in cooperation with ASE

35th Annual State-of-the-Art Echocardiography

February 17-20, 2023
Westin Kierland Resort & Spa
Scottsdale, AZ

Jointly provided by ASE and the ASE Foundation

MAY

24th Annual ASCeXAM/ReASCE Review Course | VIRTUAL

Content Available May 8, 2023

Jointly provided by ASE and the ASE Foundation

JUNE

34th Annual Scientific Sessions

June 23-26, 2023
Gaylord National Resort & Convention Center
National Harbor, MD

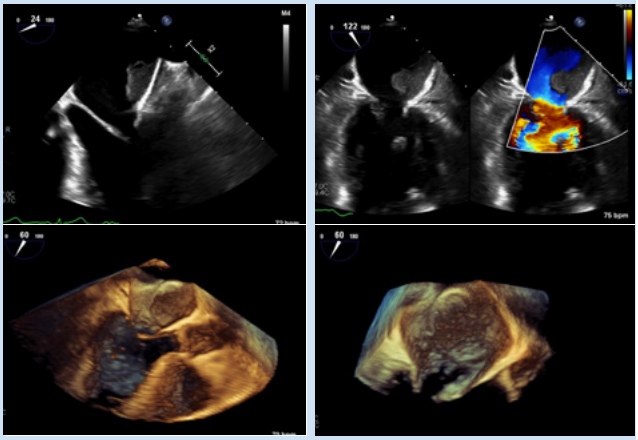
Jointly provided by ASE and the ASE Foundation

OCTOBER

11th Annual Echo Florida

October 7-9, 2023
Disney's Yacht & Beach Club Resort
Orlando, FL

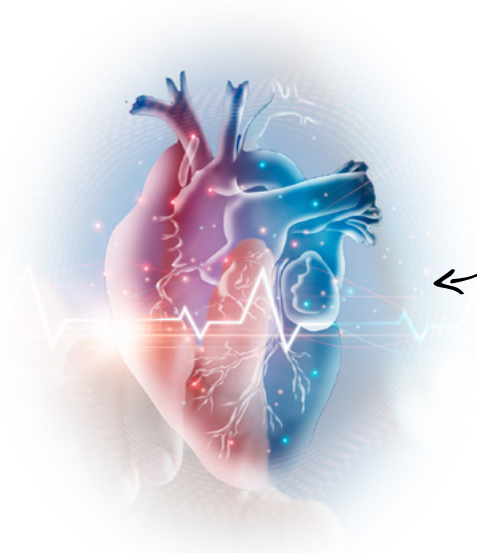
Jointly provided by ASE and the ASE Foundation



Discounted rates for ASE members. ***To learn more and register, visit us at ASEcho.org/Education.***

This text also appears in the January JASE. OnlineJASE.com

Contents



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American Society of Echocardiography

Cover art: "Heart in the Heart from Every Angle" Kana Fujikura, MD, PhD, FASE and Cynthia Taub, MD, MBA, FASE
St. Francis Hospital and Heart Center and Dartmouth Hitchcock Medical Center, Roslyn, New York and Lebanon, New Hampshire

EDITORS' NOTE

ASE is very grateful to our members who contribute to *Echo* magazine and values their willingness to share personal insights and experiences with the ASE community, even if they may not be in total alignment with ASE's viewpoint.

A FOCUS ON THE ASE LEADERSHIP ACADEMY

*Contributed by **Stephen H. Little, MD, FASE**, Cardiology Fellowship Program Director at Houston Methodist Hospital, System Director for Structural Heart, and Professor of Medicine, Weill Cornell Medical College, Cornell University*

How does one acquire leadership skill? For many, there is no easy answer to this question. Those who have developed these skills might describe a pathway of opportunity recognition, mentorship, applied intuition, and trial and error. For our growing Society, a robust leadership pipeline is a key to our long-term success.

> “For our growing Society, a robust leadership pipeline is a key to our long-term success.”

WHAT IS THE LA PROGRAM?

The ASE Leadership Academy (LA) program was developed by the Governance Committee to provide a way to engage our early and mid-career members to develop their leadership skills. It was founded in 2018 by then Governance Chair NeilWeissman,MD, FASE, to support ASE members with leadership aspirations and a demonstrated commitment to cardiovascular ultrasound. We remain indebted to Dr. Weissman for his vision and energy in establishing this highly impactful ASE program. So far, the ASE has supported and graduated two cohorts of the LA program and selected its 3rd cohort which had its inaugural meeting in November 2022.

As in any new initiative, the methods and materials used in the leadership academy program are expected to evolve and continue to improve over time. In the program, leadership skills are acquired through educational modules and other reading materials, monthly group discussions, and in-person retreats. During this 20-month program, participants are matched with a senior advisor, acquire a personalized evaluation of their leadership aptitude, and receive high-quality online tutorials on leadership topics.

In Cohort 2, based on participant feedback from the initial class, we made the following updates to the program:

- Added six Special Guest/Participant-led Lectures.
- Created a Capstone Project requirement.
- Reduced the number of required learning modules.
- Shortened the program from 24 to 20 months to coincide with Scientific Sessions Graduate Recognition.

In Cohort 3, leadership of the program was transitioned to ASE past-president Vera Rigolin, MD, FASE. During the height of the pandemic, we realized that change was needed, and Dr. Rigolin reimagined the didactic modules and pivoted to a contract with Enterprise Learning Solutions. As president and founder of this content delivery organization, Kathy Pearson, PhD, is an adjunct senior fellow at the Leonard Davis Institute of Health Economics and has served as an adjunct associate professor in the operations and information management department at The Wharton School, both at the University of Pennsylvania. This new curated content for the LA program will feature shorter modules, up-to-date case studies, and more interactive content to meet the learning needs of the new cohort. During bimonthly discussions, leaders within the ASE and experts in the field of leadership will work together to lead invigorating sessions.

WHAT IS THE VALUE TO A LA PROGRAM PARTICIPANT?

The ideal candidate is a Fellow of the American Society of Echocardiography (FASE) (or one who will achieve FASE status by completion of the program), who has shown a commitment to cardiovascular ultrasound and ASE. A successful applicant to the program is one who would benefit from the Leadership Academy in such a way that their professional growth is also expected to benefit the ASE membership for many years. Candidates should have at least two years of experience since the completion of their formal training programs.

Previous LA program participants state that one of the most valuable takeaways is

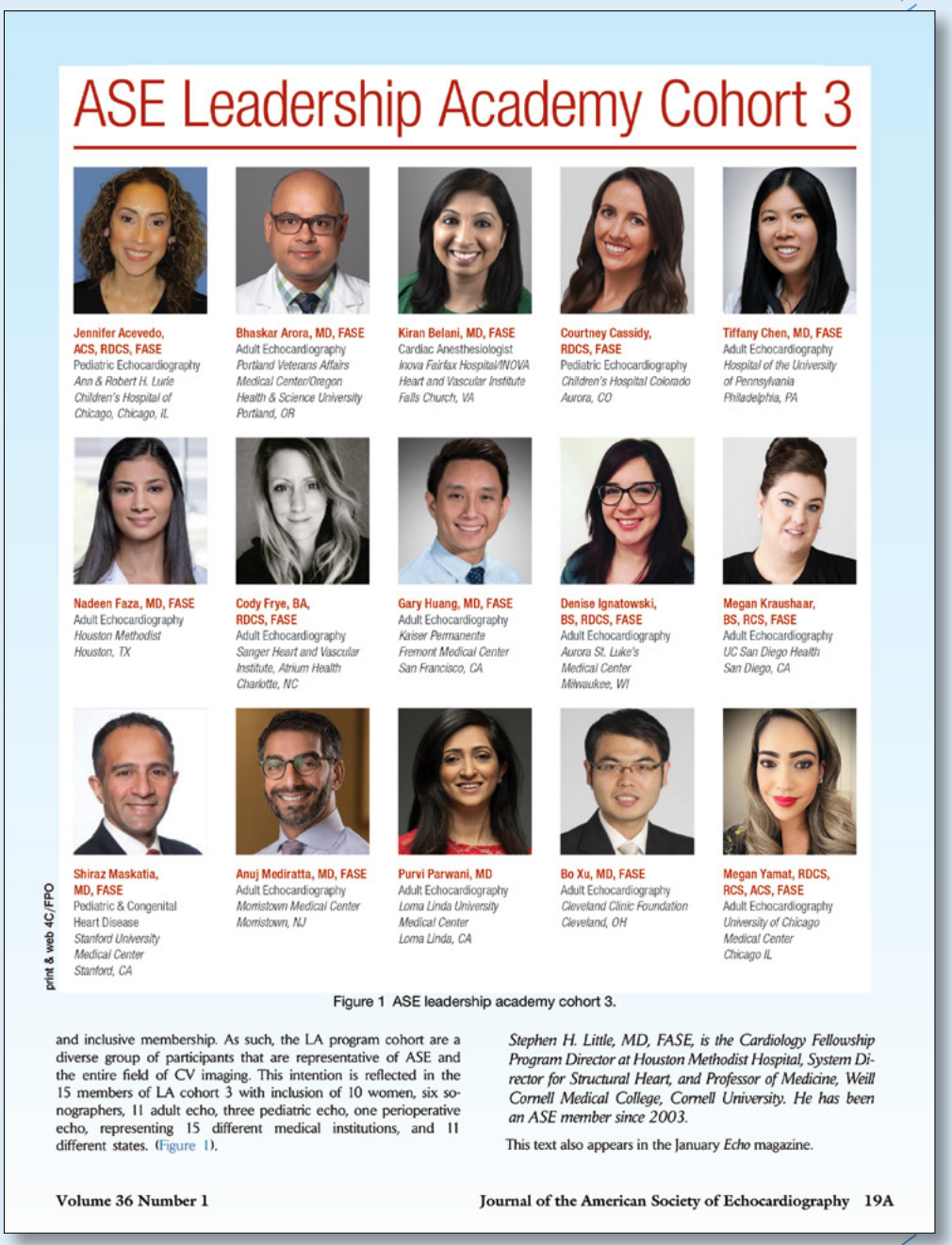
ASE Leadership Academy Cohort 3

Figure 1 ASE leadership academy cohort 3.

and inclusive membership. As such, the LA program cohort are a diverse group of participants that are representative of ASE and the entire field of CV imaging. This intention is reflected in the 15 members of LA cohort 3 with inclusion of 10 women, six sonographers, 11 adult echo, three pediatric echo, one perioperative echo, representing 15 different medical institutions, and 11 different states. (Figure 1).

Stephen H. Little, MD, FASE, is the Cardiology Fellowship Program Director at Houston Methodist Hospital, System Director for Structural Heart, and Professor of Medicine, Weill Cornell Medical College, Cornell University. He has been an ASE member since 2003.

This text also appears in the January *Echo* magazine.

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Figure 1.

the connections they make with their fellow members of the cohort, their interaction with the prior cohorts, and the leadership mentorship created during the program. Discussion sessions are led by some of ASE's most talented leaders within a trusted environment where you can learn and grow. In addition, the didactic content provides an in-depth review of many of the fundamental concepts such as change management, strategic planning, and team leadership.

This *Echo* Magazine Article from June 2022 shares quotes from several participants: "*Participation in the ASE Leadership Academy provided the skill set and tools necessary to accelerate my career to the next level. The people involved, from ASE staff to volunteers to peers, all provided insights, knowledge, and connections invaluable to those interested in progressing to leadership positions.*" Dermot Phelan, MD, PhD, FASE – 2020 Graduate, ASE Leadership Academy

WHAT IS THE VALUE TO ASE?

The ASE investment in our leadership academy is ultimately and intentionally self-serving. These future leaders have immediate impact such as developing near-term projects that pursue ASE goals (e.g., a focused Capstone project). Participants develop social connections that build camaraderie, and many of our most avid Twitterati are LA program alumni. As expected, the graduates of the LA program have been integral to the success of several ASE efforts. Currently LA graduates are serving as Chairs of our Registry and PR Committees, Co-Chairs on the Advocacy, Awards, Nominations, PR, Research, and Scientific Sessions Program Committees, as well as serving in leadership roles on the ASE & ASEF Boards and Council Steering Committees.

The value of having a Leadership Academy graduate serving on the Executive Board cannot be understated - they bring fresh ideas and concerns of our younger members to the forefront. After the success of the first board representative, Jordan Strom, MD, FASE, from Beth Israel, the Nominations Committee recommended changing the bylaws to have the Leadership Academy Representative term on the Board move from one to two years. Sujatha Buddhe, MD, FASE, Seattle Children's Hospital, Seattle, WA, is currently serving in this role.

A REFLECTION OF THE DIVERSITY AND INCLUSIVE MEMBERSHIP OF THE ASE

To truly reflect our entire Society, the selection process for LA program participants recognizes the inherent value of our diverse and inclusive membership. As such, the LA program cohort is a diverse group of participants that are representative of ASE and the entire field of CV imaging. This intention is reflected in the 15 members of LA cohort 3 with inclusion of 10 women, six sonographers, 11 adult echo, three pediatric echo, one perioperative echo, representing 15 different medical institutions, and 11 different states. *(Figure 1)*.

"To truly reflect our entire Society, the selection process for LA program participants recognizes the inherent value of our diverse and inclusive membership."

Stephen H. Little, MD, FASE
ASE President

This text also appears in the January JASE. OnlineJASE.com

Sonographer

VOLUNTEER OF THE MONTH- JANUARY

Congratulations

Joshua Pearson, RCS, FASE, CCSS, CRAT

Phoebe Putney Memorial Hospital, Albany, GA

Q
A

When and how did you get involved with the ASE?

I joined the ASE early in my career for the incredible CME offerings, which is without a doubt the best deal in cardiovascular ultrasound continuing medical education. I quickly realized that the ASE was the sonographer's best resource and advocate! ASE's commitment to improving cardiovascular ultrasound while also providing research and setting guidelines is what has kept me a member for many years.

When and how did you get involved with cardiovascular ultrasound?

I discovered cardiovascular ultrasound while volunteering at the local hospital while I was in college. I had just completed my core classes, and I knew that I wanted to work with ultrasound, but I did not know which modality would be best for me. The staff sonographer (Who happened to be a retired ultrasound instructor) took time with me and showed me different modalities, but I was fascinated when I saw my first echocardiogram. After a few weeks observing, I applied to a CVT program, got accepted, and the rest is history.

What is the name and type of facility/institution at which you work, and what is your current position?

Phoebe Putney Health System is a not-for-profit network of more than 4,500 physicians, nurses, professional staff, and volunteers. I work at the flagship Phoebe Putney Memorial Hospital, which delivers compassionate, high-quality healthcare to more than 500,000 residents in the 41-county region. I am in a supervisory role over noninvasive cardiology for Phoebe's main and north campuses, along with outpatient adult and pediatric testing in our medical tower offices. It has been an extremely rewarding job and position, and I would love for any interested techs to apply as I am always looking for new talent in my growing department.

Why do you volunteer for ASE?

I have always been enthusiastic about volunteering whenever possible. Not only does volunteering help

> “ASE's commitment to improving cardiovascular ultrasound while also providing research and setting guidelines is what has kept me a member for many years.”

the organization to thrive and continue to grow, but it also gives me a chance to learn about upcoming guidelines and standards, allows for networking opportunities, and provides a support system of peers for discussing new techniques and interesting findings.

What is your current role within ASE? In the past, on what other committees, councils or task forces have you served and what have you done with the local echo society?

I am a current member-at-large for the Cardiovascular Sonography Council Steering Committee (2022-2024). This is my first time serving on a council for ASE. I do not have a local echo society, but I did start an ASE CEU education program at my institution. I am enormously proud of the work that ASE is doing for the profession, so being able to serve and give back to the echo community is incredibly rewarding.

What is your advice for members who want to become more involved in their profession or with the ASE?

One of the best ways to start is by obtaining FASE. Not only does the FASE designation show dedication to the field, but it will potentially open more opportunities in the future. Collaborating with mentors is also a wonderful way to get guidance. I would encourage all ASE members to share their thoughts and concerns by joining councils, committees, and participating in the chats/blog discussions.

What is your vision for the future of cardiovascular sonography?

It is hard to predict what will come next in the field, but I know anecdotally my institution is seeing more structural heart cases and many more adult congenital heart disease patients than we have in the past. With technology evolving so rapidly, one can only guess at what TAVR and other minimally invasive procedures will look like in the future. Personally, I can envision ultrasound enhancing agents being used on nearly all echo patients, especially in parts of the world where patients tend to be technically difficult. Global longitudinal strain will be performed on all patients when technically possible, and 3D will also become the norm. I cannot wait to see what the future holds for the field, but I am happy to know that the ASE will be there to help guide us all along the way.

I cannot wait to see what the future holds for the field, but I am happy to know that ASE will be there to help guide us all along the way.

Introducing the Interventional Echocardiography Council Steering Committee

*Contributed by **Nishath Quader, MD, FASE**, Washington University in St. Louis, St. Louis, MO*

Although Interventional Echocardiography (IE) is a relatively recently coined term, the use of echocardiography in guiding structural heart procedures is not a new phenomenon

ALTHOUGH INTERVENTIONAL Echocardiography (IE) is a relatively recently coined term, the use of echocardiography in guiding structural heart procedures is not a new phenomenon. In fact, echocardiography was utilized decades ago to guide valvuloplasties, PFO/ASD/VSD closures, and paravalvular leak closures. IE gained popularity with the rise of transcatheter aortic valve replacement (TAVR) where transesophageal echocardiography (TEE) was utilized extensively to size the aortic annulus, guide valve placement, and assess for complications. These days interventional echocardiographers play a crucial role in transcatheter edge-to-edge repair of mitral and tricuspid valves, transcatheter left atrial appendage occlusion, valve-in-valve procedures, catheter based mitral and tricuspid valve replacement procedures, and many more. ASE has recognized this rapidly advancing field and initially formed an IE Task Force that then transformed into a Special Interest Group (SIG). This group was instrumental in organizing webinars and journal clubs on topics related to IE. Several members from this group were involved in developing guidelines standardizing TEE images for patients being considered for structural heart disease procedures. Due to the important and timely efforts led by the SIG, ASE formed the Interventional Echocardiography Council in January 2023. The following are members of the IE Steering Committee.

Muhamed Saric, MD, PhD, FASE, IE Council Chair, is the Director of Noninvasive Cardiology and a Professor of Medicine at New York University Langone Medical Center. His primary interest is the use of 3D echocardiography in guiding percutaneous repairs of structural heart disease. At NYU, he was part of the team that performed the first transseptal transcatheter mitral valve replacement in the world on June 15, 2016, using Caisson valve system. He was the first to describe the tilt-up-then-left or TUPLE maneuver, which improves the diagnosis of patent foramen ovale and atrial septal defects (ASD) and facilitates their repair. He was the chair of the ASE guidelines writing group for the use of echocardiography in the evaluation of cardiac source of embolism. He has received multiple teaching awards including the 2017 Richard Popp Excellence in Teaching Award from ASE. He is a co-editor of the textbook *ASE's Comprehensive Echocardiography*, 3rd edition.

Nishath Quader, MD, FASE, IE Council Chair-Elect, is an Associate Professor of Medicine in Cardiology at Washington University-St Louis. She is also the director of the imaging fellowship and the director of the structural imaging program at WashU. Since being on faculty, she has trained numerous fellows, faculty, and sonographers in 3D and interventional echocardiography. She has been an active member of ASE for over a decade engaging in various committees, annual sessions, writing groups, and task forces. She was instrumental in advancing the Interventional Echo SIG into an ASE Council. She is looking forward to working with ASE to move this rapidly advancing field forward through education, member recruitment, and advocacy.

Mary Beth Brady, MD, FASE, is the Director of Intraoperative and Interventional TEE program at Johns Hopkins as well as the Vice Chair for Education. She has decades of experience in echocardiography education on a multidisciplinary level including training colleagues in anesthesiology, critical care medicine, cardiology, and cardiothoracic surgery. Dr. Brady has extensive leadership involvement in national and international societies. Free time is spent with her husband, two daughters, and a very enthusiastic Golden Retriever. Dr. Brady loves world travel and photography.

Ruchira ("Ruchi") Garg, MD, FASE, is a Professor in the Departments of Pediatrics and Cardiology at Cedars-Sinai Medical Center and Director of Congenital Noninvasive Imaging. She has been a member of ASE for 15 years, and FASE for a decade. She served on ASE committees and two writing groups including the recently published ASE "Recommended Standards for the Performance of TEE Screening for Structural Heart Intervention." She is also a member of the ASE writing group for the upcoming guideline "Imaging Assessment of the Heart in Pediatric Oncology Patients and Pediatric Cancer Survivors." She is excited to participate in this newly created IE Council to continue to advocate for the essential role of imager in pediatric and structural cardiac interventions. When not imaging, she spends her remaining precious time with her loving husband and two teenage sons, camping, skiing, and cooking.

David Rubenson, MD, FASE, received his medical training at the UCLA School of Medicine, UCSD and subsequent cardiovascular fellowships at the USHS Hospital in Staten Island, NY, and the Stanford University Medical Center where he discovered his passion for echocardiography working with Dr. Richard Popp. He joined the Scripps Clinic Medical Group in La Jolla, CA, in 1981 and was Director of the Cardiac Non-Invasive Laboratory until 2018. His clinical focus on valvular heart disease and structural intervention was fostered by the introduction of TEE imaging in the 1980s, and the encouragement of active collaboration in the operating room with cardiac surgeons Drs. James Oury and Carlos Duran. He has served on numerous committees, task forces for ASE and the ASE Foundation, and served the ASE Board of Directors.

Vera Rigolin, MD, FASE, is currently the Director of the Bluhm Cardiovascular Institute (BCVI) System Echocardiography Quality, Northwestern Medicine and a Past President of ASE (2017-2018). She previously served as the medical director of the echocardiography laboratory at Northwestern Memorial Hospital for 15 years. She also served as the program director for Northwestern's general cardiology fellowship program and the advanced cardiac imaging training program. She is passionate about teaching students, residents, fellows and sonographers. She is thrilled to see the growth of interventional echocardiography and looks forward to contributing to its continued success.

Rebecca Hahn, MD, FASE, is Professor of Medicine at Columbia University, Irving Medical Center in New York, and Chief Scientific Officer of the Echo Core Lab at the Cardiovascular Research Foundation. She is the Director of Interventional Echocardiography at The New York Presbyterian/Columbia Campus Structural & Valve Center. She has served on the Board of Directors for ASE. She has published over 320 articles and 10 book chapters on echocardiography and valvular heart disease and has been on the writing committees for four ASE recommendations/guidelines and four Academic Research Consortium (ARC) documents. She was the National PI for the SCOUT Trial (Trialign Annuloplasty Device) and is the National Co-PI for the Triscend Pivotal Trial (EVOQUE Transcatheter Tricuspid Valve Replacement device).

Amy Dillenbeck, MS, ACS, RDCS, FASE, is the Program Director and Clinical Coordinator for the Cleveland Clinic School of Cardiac Ultrasound. Amy also helps lead the education efforts in the Cleveland Clinic Cardiovascular Imaging lab. She has previously served on the ASE Cardiovascular Sonographer Council, Education Committee, and Membership Committee. Amy is one of the many exercise physiologist-to-cardiac sonographer converts in our discipline. She is excited for the opportunity to learn from and work with some of the most talented cardiologists and sonographers in the field! In her free time, Amy enjoys spending time with her husband, three teenagers and their dog, Gus. She loves traveling, sports, and taking walks.

Where to Begin

LEAN in an Echo Laboratory

Contributed by ***Rita France, RDCS, RDMS, RT, FASE****;* ***Jimmy Lu, MD, FASE****;* ***Shiraz Maskatia, MD, FASE****;* ***Seda Tierney, MD, FASE****;* *Jennifer Hake, RDCS (PE, AE), RDMS (FE), FASE*

What is LEAN?

LEAN systems are focused on eliminating waste and improving workflow with the goal of becoming a high reliability organization.

IN THE *BOOK LEAN HOSPITALS*, author Mark Graban describes LEAN as "a tool set, a management system, and a philosophy that can change the way hospitals are organized and managed."[1] Taiichi Ohno, a Japanese Production Control Expert for Toyota, is recognized as the father of the Toyota Production System, which inspired LEAN in manufacturing and hospitals. LEAN systems are focused on eliminating waste and improving workflow with the goal of becoming a high reliability organization. It is a value stream-based system and in a hospital organization, the value is defined from the patient's point of view. Improvements that provide a continuous flow, eliminating delays and interruptions are driven by the front-line staff or those doing the work. They are provided with a variety of LEAN tools to standardize and support the successful implementation of process changes to accomplish those improvements. Engagement of the staff from front-line to leadership is integral to beginning a LEAN journey. This is accomplished with the integration of the LEAN tools and processes into daily function and by encouraging staff to implement them at all levels of their work. This is enhanced by the emphasis on process as opposed to people as the source of error or issues.

A foundation of the LEAN journey is understanding waste. Waste is any process that does not add value to the patient and can be sorted into three broad categories:

- Unevenness - A high variation in work-load (refers to demand not level)
- Overburden - Of people or equipment
- Non-Value Added – Eight types of waste have been described by the acronym **DOWNTIME**
  - **D– Defect** - when a product is not fit for use, such as an echo that does not answer the diagnostic question
  - **O– Overproduction** - extra supplies, such as creating extra reports that are not utilized
  - **W– Waiting** - for patients, beds, staff
  - **N– Non-utilized Intellect** – staff working below their level of proficiency
  - **T– Transportation** – patient movement
  - **I– Inventory** – having more inventory than is necessary to support a steady flow of work
  - **M– Motion** - unnecessary staff movement during a process
  - **E– Extra processing** - rework/ duplication of data entry, supplies, processes

While thinking through a process being considered for improvement, it is important to keep these types of waste in mind to identify and target areas for improvement.

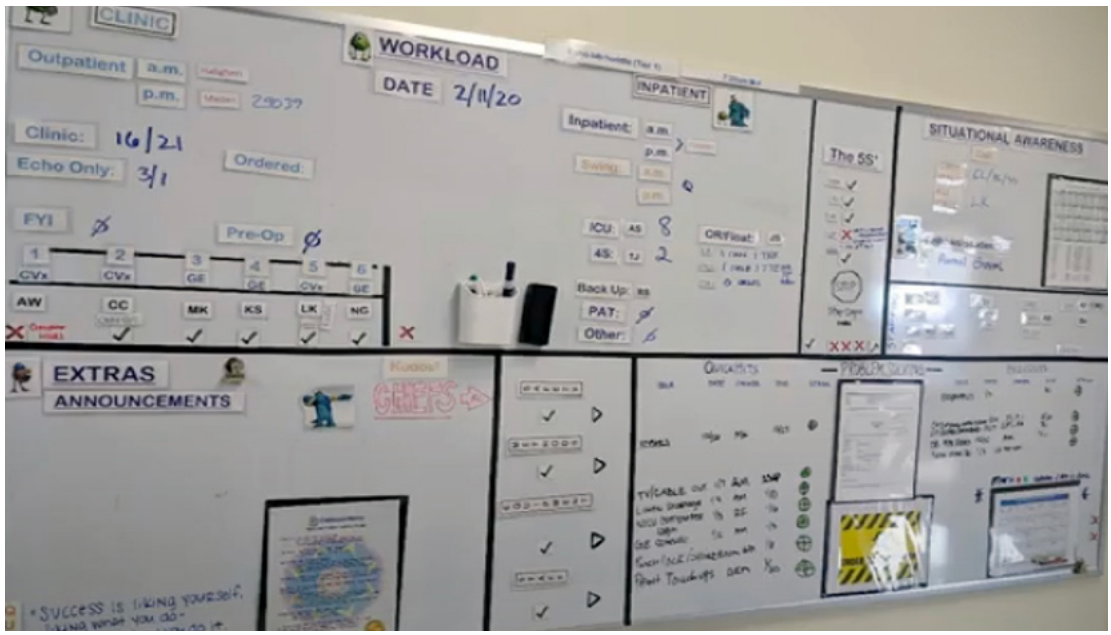
A key component of this process is to establish a **Daily Management System (DMS)**. When successful, DMS systems lead to pro-active improvement of processes instead of reactive attacking of issues when problems arise. To understand how these elements of DMS benefit the lab, let us consider the example of a common form of waste in the echo department- waiting.

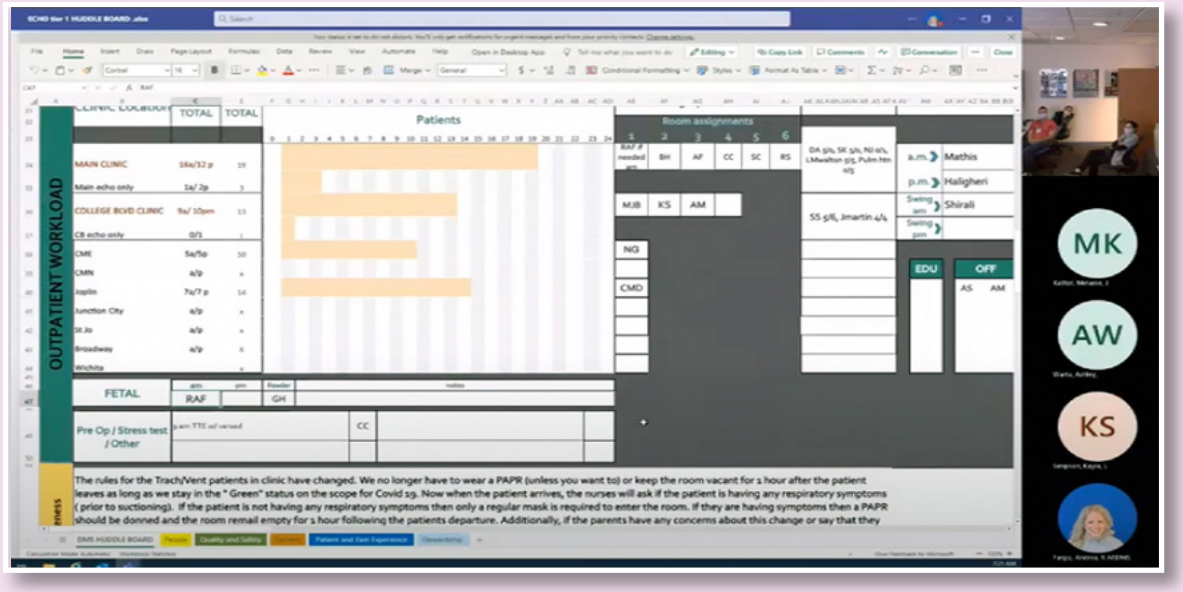
Sample (Case Scenario)

A staff member shares with her supervisor that she experienced multiple delays in the PICU when attempting to scan the patients that had orders for the day and that required sedation to be scanned. There were multiple issues encountered. There was not an order in the chart and the team had to be contacted. When the order was placed, the nurse was not available. When she was available, there was a problem getting the agent from the pharmacy. This amounted to almost an hour delay to scan the patient. The supervisor advises her to add it to Situational Awareness on the next day's huddle board to open a discussion with the staff.

FIGURE 1

Physical, in-Person Huddle White Board





▲ FIGURE 2
Hybrid huddle with a digital board and both in-person and virtual attendees.

Huddle Boards

Huddle boards are visual boards- either a whiteboard (Figure 1) or virtual (Figure 2) board providing a visual display of the DMS components

- Workload
- Situational Awareness- any "roadblocks" staff may encounter. Examples being construction, staff shortages, or an add on sedated or bubble study
- Departmental or Organizational Announcements
- Recognitions- for team members for extraordinary work or team- work
- SMESS- Safety, Methods, Equipment, Supplies, Staffing

Tiered Huddles

The Tiered Huddles are daily briefs (lasting less than 10 minutes) involving the front-line staff (Tier I), Department (Tier II), Division (Tier III), Organizational (Tier IV) and Executive. The tier system provides a path for escalation of issues that are not being solved at lower tiers and are held at scheduled times daily to allow staff, leaders, and visitors to attend.

Case Scenario (Progress)

The staff member is invited to share her experience during the situational awareness portion of the huddle, and it is discovered that several staff have had the same experience. The supervisor leading the huddle advises that they write the issue as a Complex issue on the STP (Situation, Target Proposal) board since it will require collaborating with the readers and other departments. The supervisor assists by reaching out to the other stakeholders to consider the issue.

STP Board

The STP board is where front line staff can bring ideas and issues for discussion during the daily huddle. They are empowered to take ownership of the resolution with mentoring and coaching by Leadership. STP's can be tracked on either a white board or a digital platform as one of the following classifications:

- Quick Hit < 3 days to complete
- Complex Issue < 7 days to resolve with outside collaboration
- Projects > 14 days to complete and may

require additional departments input/cooperation. These are usually completed by scheduling rapid improvement workshops or A3 problem solving teams to tackle. (A3 refers to the size of the paper used to plot the issue)

The most important aspect of LEAN is that it is based on sustainable, standardized continuous improvement.

Case Scenario (Progress)

The team decided that this is a communication issue. They met with the education nurse for the unit and asked what information is needed by the nurse at the bedside to provide the best timing for the echo. The team decided to write a standard work document detailing the process of communication with the reading physician (Figure 3) and developed a job aid which detailed a script to deliver to the nurse to time the echo with sedation (Figure 4). Since this is not completed in seven days and needs outside collaboration to complete, the issue is moved to the Projects section of the board. A rapid improvement workshop is scheduled on a day that representatives of all stakeholders can meet and write the standard work and job aid that will facilitate the new process.

Case Scenario (Follow up)

As a follow up to this project, a survey was sent out a month after initiating the standard work and script to the echo staff, the interpreting cardiologists, and the PICU nursing staff assessed the success of the project and asked for ideas to further improve the process. An audit will be conducted in six months with a report out to the team to confirm that the process is still being used effectively.

▼ FIGURE 3

First page of a process to standardize Inpatient Reader workflow and communication

Task-Level Standard Work: Inpatient Reader Workflow & Communication

Revised: Initials & Date
Anitha Parthiban.
12/17/18

Symbols: Safety, Tip, Critical Step

Purpose: To specify workflow and communication methods for inpatient echoes, excluding TEEs

Standard Work Process

Step	Time	Major Steps (What)	Key Points (How)	Reasons (Why & References)
1	Previous Day	Review and prepare for next day's cases	• OR, Sedated echos, pre-Op PAT (decide on machine preference & communicate to PAT Sonographer for following day) • If you anticipate you need extra help, contact Swing Reader for the day. ○ If no Swing Reader, send email to inpatient echo reading group	Examples: Simultaneous studies requiring your presence anticipated in Cath Lab and OR
2	Day of, 7am-8am	Attend Rounds	• Bring Ascom phone & lap top • Review ordered echoes on multi-patient task list on Cerner and enter notes for Sonographers • If you hear about orders not yet on task list, contact Sonographers via Cureatr • If you know of stat/urgent echo, call Sonographer on Ascom • Prioritize echoes (second tier prioritization, based on patient clinical status)	During rounds, collect information about Cardiac patients needing echoes for the day

3	After Rounds / Conference	Read echoes, until called to OR	○ Prioritize stat/urgent echoes, discharge dependent echoes, CICU echoes
			○ For all Cardiac patients, communicate with ICU/Blue Team Cardiologist by sending a snapshot of report or message via Cureatr
			  ○ For all ICU patients, communicate with ICU Cardiologist, Consult APNs, and Fellow, if any
			  ○ For all Blue Team patients, communicate with Blue Team Cardiologist & APN and Fellow, if any
			○ For Non Cardiac patients with urgent/critical findings, call the ordering team
			○ Text the Swing Reader about echoes they should read
				Tip: Ascom phone has a phone book that has the NICU APNs and PICU Attendings
				
				Swing Reader Standard work outlines workflow for Swing

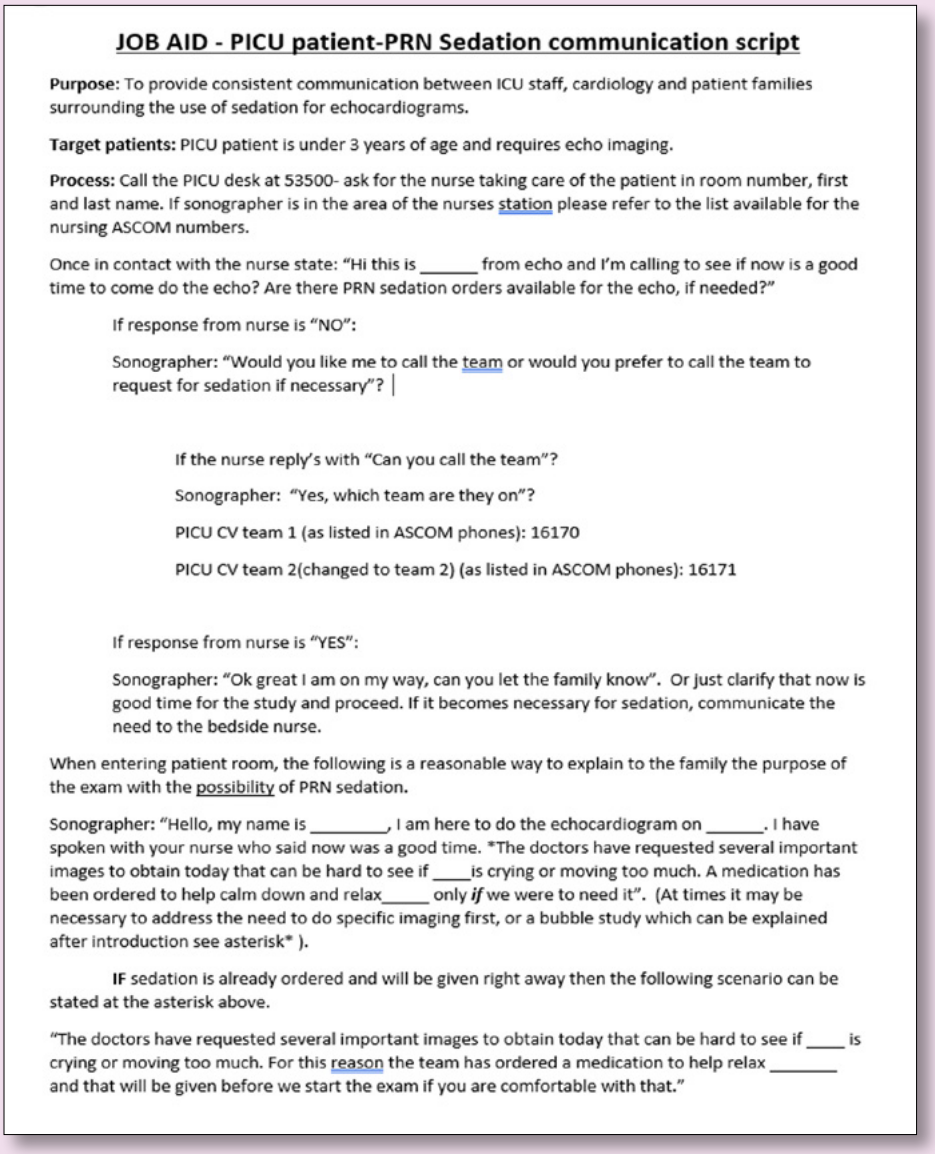
4	When called:	Go to OR for TEE	○ OR Sonographer will communicate to Inpatient Echo Team that you are heading to OR and will be unavailable, by replying to the Cureatr group text that is initiated by the 4S Sonographer each morning. ○ When complete, indicate done to the group ○ After post-op TEE finished, communicate to ICU Cardiologist, Consult APNs, and Fellow via Cureatr text ○ Exception: phone call for complicated case	

"Progress cannot be generated when we are satisfied with existing situations."

–Taiichi Ohno

The most important aspect of LEAN is that it is based on sustainable, standardized continuous improvement. Perfection may never be achieved in the ever-changing environment of healthcare, but the Lean tools and processes provide a foundation to manage that change with the input of all the stakeholders engaged in the process. It breaks down silos within organizations and promotes value- based care from the patient's perspective improving their experience and eliminating waste. *Although this article outlines the very basic DMS elements, every journey must have a beginning and a huddle board, tiered huddles and the STP process highlights where every LEAN journey should begin- with the staff on the front-line initiating change.*

Special thanks to Ashley Warta, RDCS a Tech III/ Educator and the Lean Lead of the Echo Laboratory at Children's Mercy Hospital of Kansas City for contributing her expertise.



JOB AID - PICU patient-PRN Sedation communication script

Purpose: To provide consistent communication between ICU staff, cardiology and patient families surrounding the use of sedation for echocardiograms.

Target patients: PICU patient is under 3 years of age and requires echo imaging.

Process: Call the PICU desk at 53500- ask for the nurse taking care of the patient in room number, first and last name. If sonographer is in the area of the nurses station please refer to the list available for the nursing ASCOM numbers.

Once in contact with the nurse state: "Hi this is _____ from echo and I'm calling to see if now is a good time to come do the echo? Are there PRN sedation orders available for the echo, if needed?"

If response from nurse is "NO":

Sonographer: "Would you like me to call the team or would you prefer to call the team to request for sedation if necessary"?

If the nurse reply's with "Can you call the team"?

Sonographer: "Yes, which team are they on"?

PICU CV team 1 (as listed in ASCOM phones): 16170

PICU CV team 2(changed to team 2) (as listed in ASCOM phones): 16171

If response from nurse is "YES":

Sonographer: "Ok great I am on my way, can you let the family know". Or just clarify that now is good time for the study and proceed. If it becomes necessary for sedation, communicate the need to the bedside nurse.

When entering patient room, the following is a reasonable way to explain to the family the purpose of the exam with the possibility of PRN sedation.

Sonographer: "Hello, my name is _____, I am here to do the echocardiogram on _____. I have spoken with your nurse who said now was a good time. *The doctors have requested several important images to obtain today that can be hard to see if ____is crying or moving too much. A medication has been ordered to help calm down and relax_____ only ***if*** we were to need it". (At times it may be necessary to address the need to do specific imaging first, or a bubble study which can be explained after introduction see asterisk*).

IF sedation is already ordered and will be given right away then the following scenario can be stated at the asterisk above.

"The doctors have requested several important images to obtain today that can be hard to see if ____ is crying or moving too much. For this reason the team has ordered a medication to help relax _____ and that will be given before we start the exam if you are comfortable with that."

▲ FIGURE 4

Job Aid for PICU patient PRN Sedation Communication script

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WHAT'S IMPORTANT TO KEEP IN MIND WHEN VALVES GO NARROWED AND LEAKY?

Insights from the ASE Recommendations for Rheumatic Heart Disease

Contributed by

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This article serves as a practical primer to the recently published "Recommendations for the Use of Echocardiography in the Evaluation of Rheumatic Heart Disease."[1] It summarizes key points presented in this document and aims to support active clinical translation of these guidelines by emphasizing practical aspects pertaining to the evaluation of patients with rheumatic valve disorders.

Back to the Basics: What is ARF & RHD?

Acute rheumatic fever (ARF) is the consequence of an immune-mediated response to pharyngitis caused by Streptococcus pyogenes. Prolonged or multiple recurrent episodes of the illness results in long-term damage to the heart and cardiac valves, referred to as rheumatic heart disease (RHD). While RHD remains the single most common cardiovascular disorder among children and young adults in resource-constrained global settings, it has evolved to impose significant worldwide burden with widespread emigration in recent years.

Why are Recommendations for Echocardiographic Evaluation of RHD necessary?

Echocardiography plays a key role for accurate detection of rheumatic valvulitis and is extensively utilized in worldwide screening programs to assess RHD prevalence. While minimum Doppler echocardiographic diagnostic criteria have been published previously,[2] a guide for comprehensive non-invasive evaluation of rheumatic cardiac lesions is needed. The aim of the recently published recommendations is to provide clinicians and sonographers with guidelines for the use of echocardiography in screening, diagnosis, classification, and risk assessment of RHD.

Let's Get Technical! Instrumentation and Image Optimization

The assessment of a rheumatic valve entails optimization of equipment settings to provide high-resolution diagnostic images. Tissue harmonics should be turned off to avoid overestimating valve thickness, gain settings and dynamic range are to be adjusted to enhance leaflet border delineation, and focus set at the level of the valve being interrogated. A magnified view of the valve is always recommended. Heart rate, rhythm, and blood pressure should be recorded prior to each study. Multiple views of the valve are to be captured for reliable jet characterization. In the setting of atrial fibrillation (AF), at least 5 representative cycles are to be taken into consideration during measurements.

When 3D echocardiography (3DE) is employed, spatial and temporal resolution should be optimized, gain settings set to around 50 dB to avoid image dropout, and compression balanced for detailed valve characterization. Supine bicycle is the preferred stress modality when hemodynamic alterations are studied under exercise. However, if treadmill stress is utilized, images are to be acquired at baseline and within two minutes post exercise. Although Dobutamine stress is less physiological, low-dose Dobutamine may be employed in symptomatic patients when exercise is not feasible.

It's getting hot in here! Screening in Acute Rheumatic Fever

Echocardiographic evidence of valvulitis is a major criterion in the diagnosis of subclinical carditis. Careful inspection of mitral and aortic valve morphology in addition to identification of pathological valvular regurgitation is integral to assessment. Changes in valve morphology may be absent during early ARF presentation. When present, thickening of the free edges of the valve along with nodularity along the leaflet length can be seen. Mitral valve thickness <3 mm in children and <3.5 mm in adults is considered normal. In the absence of non-rheumatic causes, greater than trace MR or AR may be considered pathological if a pansystolic (in MR) or pandiastolic (in AR) jet is seen in multiple views using CW Doppler with peak velocity > 3 m/sec in at-risk populations.

Rigid and Stiff! Evaluation of Rheumatic Mitral Stenosis

A comprehensive approach to the evaluation of mitral stenosis includes a) inspection of mitral cuspal, chordal and commissural morphology, b) accurate determination of mitral valve area (MVA) at the leaflet tips, c) Doppler assessment of pressure half-time, mean mitral gradient and associated pulmonary hypertension, and d) evaluation of associated findings such as left atrial enlargement, presence of thrombi, right ventricular size and function.

Anatomical considerations in the assessment of mitral stenosis have important therapeutic implications on choice of percutaneous or surgical intervention. Diastolic doming of the anterior leaflet is best appreciated in the parasternal long-axis view, and the 'fish mouth' appearance characteristic of commissural fusion leading to a narrowed mitral orifice in the short-axis view. Chordal thickening, shortening and fusion are best appreciated in parasternal and apical views. Planimetry is the preferred method for determination of anatomic MVA. Using 2D echocardiography (2DE), overestimation of MVA can be avoided by scanning carefully from the sub-valvular plane in the short axis view to the level of the mitral leaflet tips. MVA is assessed using a magnified view and gain settings should be optimized to avoid signal dropout (low gain) or MVA underestimation (high gain). 3D echocardiography is more accurate and reproducible than 2DE, offers stronger commissural definition in addition to perspectives from both left atrium (LA) and the left ventricle (LV) (Figure 1).

Hemodynamic assessment includes estimation of MVA using the pressure half-time (PHT) method, evaluation of transmitral pressure gradients and corresponding pulmonary pressures. Cardiac rhythm and heart rate should be documented as part of Doppler assessment. Transmitral gradient

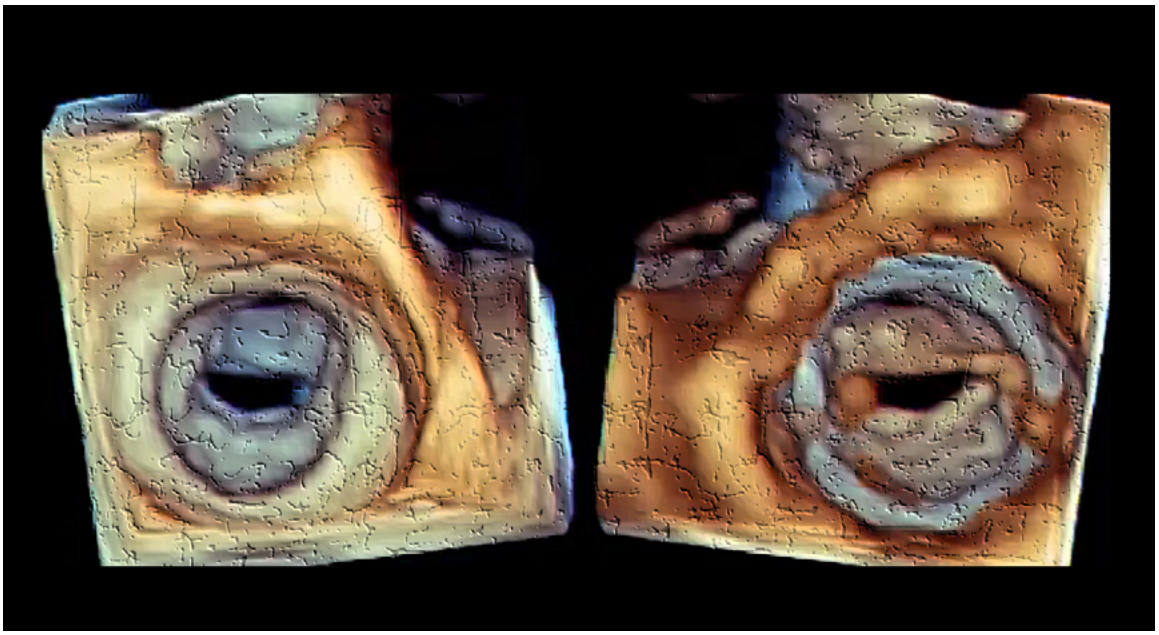

FIGURE 1. Mitral stenosis visualized using 3D real-time imaging providing simultaneous LA (left) and LV (right) perspective

is measured using CW Doppler, aligning the signal coaxially with mitral inflow. In the setting of a bimodal spectral flow pattern, deceleration time should be assessed considering the mid-diastolic slope rather than the early steep decline. Rheumatic MS is defined by a transmitral mean gradient > 4 mmHg in the setting of morphology suggestive of rheumatic aetiology. Severe MS is defined by MVA ≤ 1.5 cm^2, PHT ≥ 150 msec and transmitral mean gradient ≥ 10mmHg.

Doppler-based assessments are, however, not reliable as sole estimates of MS severity. High output states and significant mitral regurgitation result in a disproportionate rise in flow velocity. Reductions in left ventricular compliance in the setting of LV hypertrophy or with concomitant aortic regurgitation (AR) result in a lowered transmitral gradient. When imaging findings and patient symptoms are not congruent, exercise stress testing may help identify patients that benefit from intervention. A transmitral mean gradient > 15 mmHg with exercise, ≥ 18 mmHg with dobutamine infusion, or pulmonary artery systolic pressure > 60 mmHg may be considered as hemodynamically significant.

Achy, Leaky Heart! Evaluation of Rheumatic Mitral Regurgitation

The multi-parametric approach to assessing rheumatic MR includes both semi-quantitative and quantitative evaluation of regurgitant flow as per current recommendations. Anatomic considerations include establishing at least two morphological features of rheumatic MV, classifying MR as primary (attributable to valve abnormality) or secondary (attributable to LV/LA remodelling), and jet orientation as central or eccentric. 3DE with real-time volumetric imaging or when combined with color Doppler provides stronger characterization of the jet origin, extent and trajectory. Quantifiable measures of MR severity are recommended whenever feasible, particularly when jet severity is estimated as more than moderate. Semi-quantitative evaluation of MR severity by vena contracta (VC) using 2DE, or vena contracta area using 3DE are relevant in the setting of eccentric regurgitant jets common to RHD. Quantitative indices include effective orifice regurgitant area (EROA) by PISA, regurgitant volume and regurgitant fraction. Severe rheumatic MR is indicated by a VC ≥ 0.7 cm, VC area ≥ 0.40 cm^2, EROA ≥ 0.4 cm^2, regurgitant volume ≥ 60 ml.

Evaluation of the Rheumatic Aortic Valve

The aortic valve should be evaluated using the Zoom function in the parasternal long- and short-axis views, paying attention to commissural fusion, fibrotic thickening and retraction of the leaflet edges suggestive of rheumatic etiology. Superimposed calcification during early stages generally starts from the leaflet free edges rather than the base. Multiplanar and real-time 3D imaging are useful for detailed characterization of the valve en-face.

When evaluating AS, a multiparametric approach is recommended taking into consideration anatomic aortic valve area (AVA) obtained using planimetery, effective AVA employing the continuity relationship, AVA indexed to BSA, mean pressure gradient, transvalvular peak velocity, Doppler velocity index (DVI) and acceleration time. When employing the continuity equation, 3D multiplanar imaging offers a more accurate measurement of cross-sectional area of the left ventricular outflow tract (LVOT), which may be underestimated using 2DE. Other potential sources of measurement error include malposition of the PW Doppler sample volume, malignment of the CW Doppler signal and subsequent misrepresentation of peak aortic velocity. Blood pressure, BSA, high and low flow states should always be considered. Severe AS is suspected if transaortic flow Vmax ≥ 40 mmHg, AVA < 1 cm^2, indexed AVA < 0.6 cm^2/m^2, and DVI < 0.25.

Assessment of the severity of rheumatic AR takes into consideration qualitative, semi-quantitative and quantitative Doppler measures in addition to LV size and function in keeping with current recommendations. Severe AR is indicated by a dense CW Doppler spectrum, PHT < 200 msec, VC > 0.6 cm, jet width/LVOT width ≥ 65%, regurgitant volume ≥ 60 ml, regurgitation fraction ≥ 50% and EROA ≥ 0.3 cm^2. Flow reversal in the descending aorta and LV enlargement are supportive findings.

Evaluation of the Rheumatic Tricuspid Valve

Tricuspid stenosis (TS) is most often associated with rheumatic mitral or aortic valve disorders. Anatomical characteristics include leaflet thickening, doming and subvalvular shortening seen best in the RV-focused apical view in addition to assessment of right atrial (RA) size and to rule out thrombi. 3DE is useful

In summary, comprehensive echocardiographic evaluation of rheumatic heart disease is invaluable for accurate diagnosis, risk assessment and therapy selection.

to characterize commissural fusion in real-time and to measure tricuspid valve area (TVA) using multiplane imaging. Hemodynamic assessment includes evaluation of mean TV pressure gradient, TVA and associated RA and pulmonary artery (PA) pressure. TS is hemodynamically significant if mean gradient ≥ 5 mmHg, inflow VTI ≥ 60 cm, PHT ≥ 190 ms and TVA ≤ 1 cm^2. Rheumatic tricuspid regurgitation (TR) is classified as primary if attributable to valvulitis, or secondary due to right heart enlargement attributable to left-sided valvular disease. Primary TR is characterized by thickening and doming of the tricuspid valve, in the presence or absence of stenosis. Severe TR is associated with a color Doppler regurgitant area > 10 cm^2 at a Nyquist limit > 50 cm/sec, VC ≥ 0.7 cm in the apical 4-chamber view, VC area > 0.4 cm^2, PISA radius ≥ 0.9 cm, EROA ≥ 0.4 cm^2 and regurgitant volume ≥ 45 ml. Supportive findings include flow reversal in a hepatic vein, tricuspid inflow E-wave velocity > 1.0 cm and a dense spectral regurgitant waveform. In the setting of rheumatic MR and AR, TR may be accentuated owing to elevated pulmonary venous pressure. Both anatomic and hemodynamic considerations are to be integrated to arrive at an accurate diagnosis.

Evaluation of the Rheumatic Pulmonic Valve

Rheumatic pulmonary valve (PV) stenosis is uncommon and always associated with mitral or aortic valve disease. Pulmonary stenosis (PS) is best appreciated in the parasternal short axis view with limited leaflet mobility, thickening and doming suggestive of a narrowed orifice. 3DE offers additional value in capturing an en-face view of all 3 leaflets. Severe PS is suspected when peak velocity > 4 m/sec and mean gradient > 35 mmHg.

Significant isolated pulmonary regurgitation (PR) has not been reported in large RHD cohorts. Severe PR is identified as having a jet width/annular diameter ≥ 70%, PHT < 100 msec and deceleration time < 260 msec in keeping with published recommendations.

Assessment of Secondary Pulmonary Hypertension

Pulmonary hypertension is common in the setting of rheumatic mitral valve disorders and left ventricular dysfunction associated with aortic valve disease. Echocardiographic evaluation of PA systolic pressure in addition to right heart size and function should be included during assessment. The dense, well-defined spectral envelope that reflects modal velocities is to be considered when measuring TR gradient. Extra systolic beats are to be avoided. RA pressure is estimated using IVC size and collapsibility in keeping with current recommendations.

Echocardiographic Guidance for Percutaneous and Surgical Intervention

Selection for percutaneous balloon mitral valvuloplasty (PBMV) includes assessment of degree of thickening and calcification of leaflets, extent of commissural fusion, severity of subvalvular disease, grade of MR and the presence/absence of thrombi. Immediately post procedure, transmitral gradient and MVA should be measured using planimetry. The PHT method is not recommended within 24 hours of PBMV owing to acute alterations to left heart chamber compliance. Additionally, complications such as an overtly large iatrogenic septal defect, significant MR and tamponade should be ruled out.

In summary, comprehensive echocardiographic evaluation of rheumatic heart disease is invaluable for accurate diagnosis, risk assessment and therapy selection. Sole reliance on isolated measurements is strictly not advisable and a multi-parametric approach including both qualitative and quantitative measures is recommended. Finally, an echocardiographic assessment is incomplete in the absence of a larger clinical context that includes medical history, symptoms, physical evaluation and vital signs.

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INTRACARDIAC ECHOCARDIOGRAPHY TASK FORCE – 2D AND THE THIRD DIMENSION (3D)!

Contributed by

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Markus Scherer, MD, FASE, Carolinas Healthcare System, Sanger Heart and Vascular Institute, Charlotte, NC

The Intracardiac Echocardiography (ICE) Task Force was recently established by ASE. Led by Dr. Muhamed Saric (chair) and Dr. Markus Scherer (co-chair), the task force is charged with determining the role of the intra-procedural imager during structural and congenital heart disease procedures guided by 2D and 3D ICE, and establishing an appropriate compensation model for this role.

Two developments in structural heart disease have led to the growing use of 3D ICE; first, the desire to reduce the complexity of the procedures by moving toward a minimalist approach (fewer operators and more use of only moderate sedation), and second the need for adjunctive imaging of anatomy that is inadequately defined by transesophageal echocardiography. Despite the limited field of view inherent in the size of the catheter, the ability to position the ICE probe adjacent to structures of interest improves the anatomic definition of, for instance, devices or prostheses in the pulmonary valve ***(Figure A)***, the left atrial appendage ***(Figure B)***, and the tricuspid valve ***(Figure C)***. The 3D ICE probes can utilize advanced software for image manipulation, a task most appropriate for interventional echocardiography. However, there is currently no compensation for the imager in these procedures.

The Task Force hopes to develop a consensus amongst members of the heart team for the optimal use of 3D ICE and the role of the interventionalist and imager in cardiac procedures.

The Task Force hopes to develop a consensus amongst members of the heart team for the optimal use of 3D ICE and the role of the interventionalist and imager in cardiac procedures. In turn, the taskforce may provide advocacy for changes in procedural billing and compensation. Education and training are also important components of the taskforce which aims to develop a variety of learning activities related to 3D ICE imaging. Toward that end, there will be a session of 3D ICE at the ASE Scientific Sessions, June 23-26, in National Harbor, Maryland. Please come join us in this session to learn more about the new exciting emerging field of 3D intracardiac echocardiography.

ICE TASK FORCE MEMBERS

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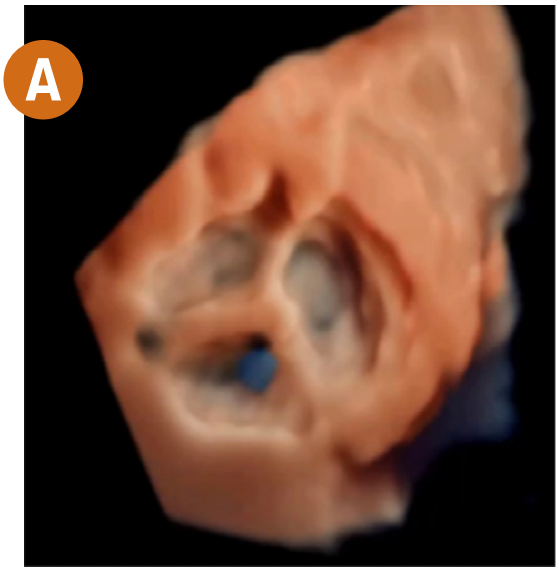
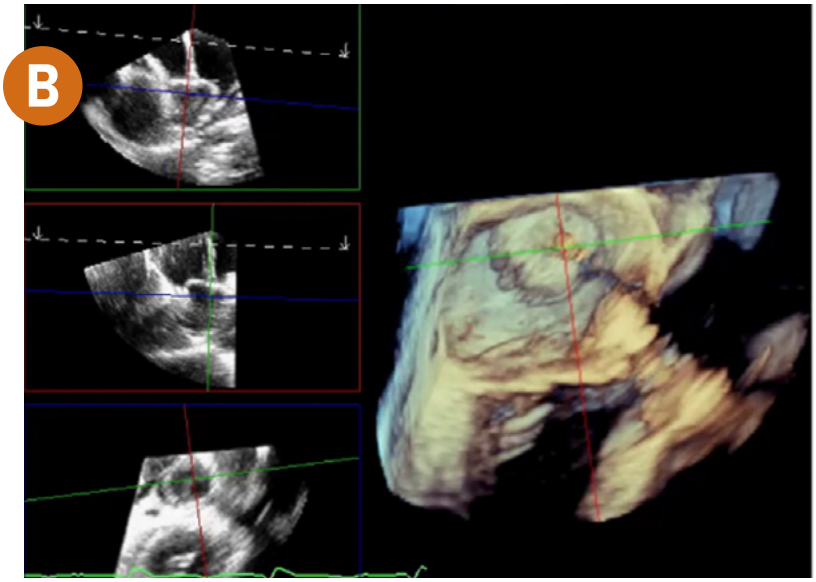
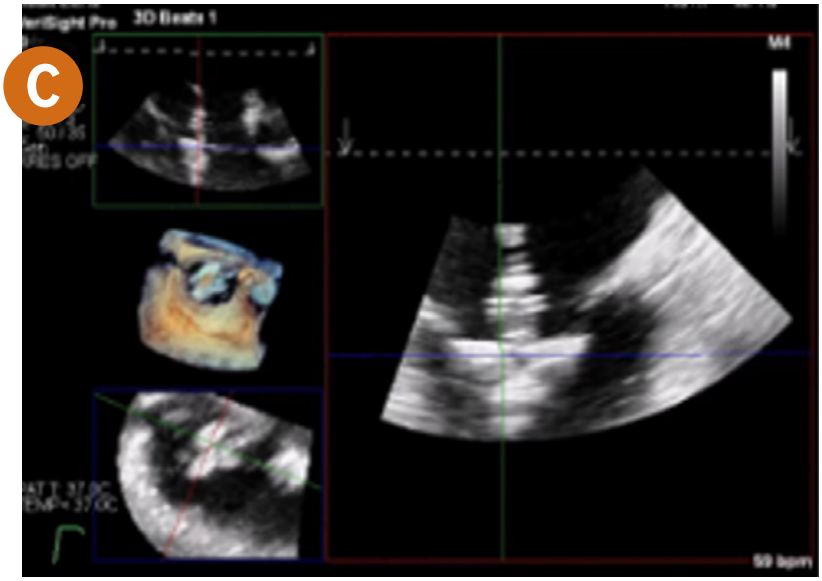
Steven Romero, MD, FASE
Staff Liaison: Irene Butler, MPP

Images of the 3D ICE







INSIGHTS ON UNDERSTANDING AND NEGOTIATING CONTRACTS

ASE's Women in Echocardiography (WIE) Forum hosted a webinar "Knowledge is Power, Understanding and Negotiating Contracts" on November 7, 2022. Ritu Thamman MD, FASE, ASE's WIE chair, moderated the session where her sister Renu Thamman, an attorney, was the featured speaker. This webinar was especially timely given the increasing trend of physicians and sonographers becoming more employees and less independent practitioners.

Renu Thamman, an employment attorney practicing for 25 years in Chicago, Illinois, with extensive experience reviewing physician contracts, discussed that the first step in finding a job is to first identify the right position by determining your short-term and long-term goals: financial, lifestyle, and practice setting. As Ritu later points out in the Q and A, knowing your goals and your limitations also helps you negotiate better for the non-financial aspects of the contracts – like scribes, nurse practitioners, CME days, and CME funds which eventually help with reducing burn out and improving retention. The second step is to understand the culture of the workplace to see if that is the culture you would like to join. Doing your homework and researching the place in detail are critical steps to understand the job well prior to the interview. At the interview, Renu emphasizes the need for you to understand as much about the place as they want to know about you. Especially for women, it is important to understand your own worth, your training, and what you bring to the job, which is why they are also interested in you. While moderating the Q and A, Ritu brings up the importance of practicing and probably role playing before a negotiation with your partner or close friend or even writing it down to boost your confidence.

Contributed by **Mahi Ashwath, MD, MBA, FASE**, Imaging Cardiologist and Clinical Professor at the University of Iowa

"Everything is rosy when you start a new job. Contracts are there in case things go sour. Read your agreement! All of it!!"

After the interview, as you look at the contract, Renu points out that it is important to notice how long the contract is for, what are the duties included in it, and what happens when the duties increase. Is there is going to be additional compensation? As Renu points out, it is important, especially for women, to advocate for yourself and realize your worth.

Also pay attention to sign-on bonuses and the terms linked to it about early departure. It is important to pay close attention to non-solicitation and non-compete clauses. As Ritu and Renu discuss in the Q and A, solicitation is soliciting patients and coworkers, where even announcing a move on social media can make it seem like inappropriate solicitation. Non-compete on the other hand can become a significant issue with the trend for the hospitals acquiring other smaller practices/hospitals. So, it is important to clarify which location this non-compete applies. Hospitals can also have language in the contract that you may be responsible for their lawyer fees if you break a non-compete, which can become a significant amount, so it is important to pay attention to this detail in the contract.

Be aware of the termination language, with and without cause, and for the duration involved with both terminations for both parties. Also of note is mandatory arbitration, which means you cannot take a case to court but must go through a private process that is governed by a certain set of rules. In addition to the benefits which might be common language for the institution, Renu suggests you pay attention to your work hours and if you have any research/administrative support/time.

This brings us to the important part after receiving the contract of negotiation. Renu points out that it is helpful to identify your and the other party's negotiation styles. The five common styles of negotiation include collaboration, accommodation, compromising, avoiding, and competing. "Use a negotiation style that complements your personality and use good communication skills to create win-win solutions."

As you close, capture all terms in writing and don't rely on oral promises. As Renu points out "Everything is rosy when you start a new job. Contracts are there in case things go sour. Read your agreement! All of it!!" You can have your contracts reviewed by someone your trust but would also help to have it reviewed by someone in your own state who is more familiar with the state rules.

In summary, Renu and Ritu bring the important issue of contracts and negotiations to the forefront and discuss issues which are very relevant to the audience including physicians and sonographers. The webinar was very well attended and very well received and is available on ASE's YouTube Channel.

Doing your homework and researching the place in detail are critical steps to understand the job well prior to the interview.

ASE American Society of Echocardiography
Sound Saves Lives

THANK YOU!

Words of Gratitude

from some of the JASE editorial team over the last five years, to Dr. Picard as he retires as the Editor-in-Chief.

Mike's humanity, vision, and leadership style brought out the best in all of us on the JASE editorial team. I am truly grateful for the many lessons learned from him that will impact the remainder of my career. All the best to you Mike – you've certainly earned it!

Benjamin W. Eidem, MD, FASE

I've been a big Mike Picard fan for decades. He looked after family hospitalized at the MGH, he and I worked together on many ASE Advocacy issues, and he followed deftly in Ned Weyman's footsteps by maintaining the MGH Echo Lab's status at the pinnacle of academic excellence. Hence, I am not surprised at the stellar job he has done as JASE Editor-in-Chief, enhancing the Journal's quality and achieving its highest impact factor ever! Mike, you've set a high bar, and will be missed.

Alan S. Pearlman, MD, FASE

In 2017, I vividly recall the invitation from Mike to serve as an Associate Editor for JASE where he carefully presented the responsibilities of an AE while outlining his plans for new initiatives to "keep the Journal vibrant and reader interest high." I spent the subsequent few years learning from his leadership where he emphasized the need for manuscripts to be "readable, accurate, and relevant." I witnessed many developments including article highlights, brief research communications, podcasts, and social media efforts to attract new readers. When 20 inches of snow fell on his newly reshingled house or the pandemic created a lock-down, he simply dedicated extra time to the Journal. Mike, not only did you make the Journal better, but through your carefully prepared feedback, you made the reviewers, the authors, and the AEs better. Thank you!

Vincent L. Sorrell, MD, FASE

Mike, the entire echo community has benefited from your wisdom and leadership of JASE. It is a joy for me to inherit a journal in such excellent condition. Thank you for the last six months of mentoring; I am inspired to continue building on your successes. All the best in your new endeavors!

Patricia A. Pellikka, MD, FASE

Mike – hard to believe it's been five years. I am personally grateful for and have benefited enormously from your insights, exceptional knowledge base, leadership, and integrity. Thinking back to the early days of the pandemic, I am reminded of the cinnamon chip snickerdoodle bars enhanced by bourbon-flavored vanilla. Whatever gets us through!

Priscilla J. Peters, BA, RDCS, FASE

When working with an EIC
With no one else I'd rather be
Than in the hands with someone like
The editor we know as Mike

Unwaveringly fair, smart as a whip
I'll leave you with this little tip
Buckle down and study hard
You just might work witha
Mike Picard

Brian D. Hoit, MD, FASE

Mike – Thank you for your service to ASE and for your devotion to the mission of JASE. We have all benefited from your effort and expertise, but Douglas Adams said it best, "To give real service you must add something which cannot be bought or measured with money, and that is sincerity and integrity."

Stephen H. Little, MD, FASE

Hello Mike, It has been an honor to work with you at the Journal. Whether or not their studies ended up in JASE, you have helped thousands of researchers make their work more meaningful. So impressive how you dedicated yourself to sifting through hundreds of studies, evaluating the strengths and shortcomings of each work, picking up the gems, staying fair, while at the same time recognizing the amount of work and dedication put into each submission and encouraging the investigators. Wishing you the very best for the next chapters!

Marielle Scherrer-Crosbie, MD, PhD, FASE

Mike, it has been an honor to work with you and learn from you. Your extensive knowledge, integrated with keen wisdom, common sense, professionalism, integrity, patience, support of your team, and willingness to listen to others are qualities of a wonderful mentor and leader. Your ability to see the big picture and key issues while maintaining attention to detail led JASE from strength to strength. Your dedication and hard work shone through. I was proud to be on your team! Congratulations on a successful and productive tenure.

Mark K. Friedberg, MD, PhD, FASE

Bringing the new technologies to JASE, including podcasts and social media posts, has modernized the Journal and has been a great initiative of Mike Picard to spread the scientific research on echocardiography. Mike has gone the extra mile to strengthen the articles and to showcase them masterfully in every issue of the Journal. For an editor it is a great reward to see such an excellent result, polishing the articles under such a superb leadership! And I cannot imagine the great joy the authors may feel!

Victoria Delgado, MD, PhD

Michael H. Picard, MD, FASE

for your exceptional leadership in steering and enhancing a dynamic publication that informs and advances the field of echocardiography.

Just as with everything he touches, Dr. Michael Picard has shepherded JASE through the past five years with his signature thoughtfulness, integrity, attention to detail, and forward-thinking leadership style. Building on the incredible foundation that Alan had built over the previous decade, Mike has succeeded in elevating the scientific profile of JASE to the next level, even in the face of a global pandemic. Congratulations and thank you Mike,

JASE and ASE have benefited tremendously from your expertise!

Danita M. Yoerger Sanborn, MD, MMSc, FASE

I am forever inspired by Dr. Picard's energy, responsiveness, and organizational superpowers. He presided over the leadership of JASE during unprecedented times — with the early uncertainty of COVID-19 sequelae, a tsunami of new information and reports, and the critical need to succinctly and rapidly disseminate accurate information to a panicked globe, likely saving lives given the central role of CV ultrasound to clinical workflow during the pandemic. I contributed to JASE precisely because of the immense impact

Dr. Picard has had on our field, our Society, and as Editor-in-Chief of our Journal. Thank-you!

Amer M. Johri, MD, FASE

Mike, you have always impressed me with your ability to quickly grasp the big picture of any manuscript while simultaneously paying exquisite attention to manuscript details. With your leadership, JASE has reached an even higher prestige in the field of echocardiography. It was such a pleasure

working and learning from such an outstanding Editor-in-Chief.

Muhammed Saric, MD, PhD, FASE

After stepping into the chief editorship five years ago, Dr. Picard used his unparalleled "sixth sense" to lead our team of editors in a way that made us feel that he is the boss anyone would want to work for. Personally, not a single moment throughout these years have I felt uncomfortable expressing my opinion, at the risk of showing my clinical ignorance as a physicist. Mike treats people on his team with utmost respect for what they have to offer, while being acutely aware of their uniqueness. Thank you, Mike, for being a superb leader, and for masterfully

navigating the JASE ship to where it is. I am truly proud of our work together.

Victor Mor-Avi, PhD, FASE

Mike is the consummate Editor-in-Chief who leads by example. He has an encyclopedic knowledge of the literature that helps place every submission to JASE into its proper context. He leads us by asking us to consider all the potentially positive aspects of each submission. He continues the JASE tradition of critical, detailed, and fair reviews of all manuscripts, whether accepted or not. His goal and therefore our goal as associate editors is to improve every submission we receive. Thanks for all of your wonderful mentoring, best wishes for the next stage

of your career. Perhaps now, your life can escape organization into two-week segments!

Peter S. Rahko, MD, FASE

It was a pleasure to work with Mike over the past few years. He was always prompt, courteous, and very receptive to vastly different opinions. He tried to bring the best out of every manuscript. He was most respectful to authors and strived to always provide

them with a positive message, irrespective of the decision rendered on their manuscript.

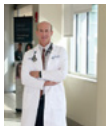
Sherif F. Nagueh, MD, FASE

Congratulations Mike on a job well done! You more

than maintained the stature of JASE, you enhanced it. You have set a very high bar for your successor.

Harvey Feigenbaum, MD, FASE

Mike Picard has been a joy to work with as the editor of JASE. He is the consummate team leader. He is quietly confident, firm, fair, and compassionate. His knowledge of echo is extremely deep and he provides great insights into effective ways to help authors improve their manuscripts (in terms of style, content, and presentation). A unique aspect of the JASE editorial meetings is that we are always looking for the good things in the articles that we review, rather than searching for reasons to reject papers. The focus on the positive is refreshing and enlightening. JASE has continued to evolve and thrive under Dr. Picard's leadership. This is reflected in the growing number of submissions and the improving impact factor of the journal. My five years as an associate editor of JASE has been a time of continuous learning from Dr. Picard and the other talented AEs on the team. JASE is extremely fortunate to be supported by a group of committed



individuals who carry out the day-to-day operations of creating and running a top tier cardiology journal.

Sheldon E. Litwin, MD, FASE

Mike is an extraordinarily impressive editor — he can get to the core of the research message and takes every care to ensure thorough and fair review of all papers. He also seeks to add value to papers so that the final publication is the very best that

it can be. This is all done with wit, patience, and charm. Best wishes for the future.

John Simpson, MD, FRCP

ECHO

ASE'S MISSION

To advance cardiovascular ultrasound and improve lives through excellence in education, research, innovation, advocacy, and service to the profession and the public.