THE 21ST EDITION

St. Louis Vascular Symposium

Presented by:
Mercy Heart and Vascular Hospital
Non-Invasive Vascular Laboratory
and Division of Vascular Surgery

February 20 - 23, 2019
The Ritz Carlton Hotel
St. Louis, Missouri

Mercy+
Your life is our life’s work.

National Non-Invasive Diagnosis of Vascular Disease Symposium

A national gathering, this symposium features prominent technologists and physicians who address new and controversial issues in noninvasive testing. An extended basic science course will provide preparation for RVT or RPVI certification as well as a refresher for laboratory educators. Additional time has been incorporated to permit interaction between those attending the conference and faculty, through focused panel discussions. The heart of the symposium is the workshops, allowing multiple opportunities to observe performance of noninvasive studies on patients with vascular pathology. The exhibit hall includes displays and representatives of manufacturers featuring advances in noninvasive technology.

This year we are delighted to partner with the Society for Vascular Ultrasound in a special session on cerebrovascular disease. SVU members can receive preferred pricing. The session will include a presentation of the recent IAC recommendations for carotid artery duplex criteria.
AGENDA

WEDNESDAY, FEBRUARY 20, 2019
5:30 p.m.  Registration
6-8 p.m.  IAC Accreditation Workshop: Quality Improvement - How do we do it? 
Marge Hutchison, BS, RVT, RDCS, RPhS

THURSDAY, FEBRUARY 21, 2019
6:45-8 a.m.  Registration | Exhibit Viewing Continental Breakfast
7-8 a.m.  Principles of Physics: 2D Imaging Principles and Improving Visualization of Small Vessels and Needles 
Frank Miele, MSEE
8:00 a.m.  Welcome
Steve Mackin I President, Mercy Hospital St. Louis
8:06 a.m.  Opening Remarks | Richard C. Pennell, MD, FACS, RPVI, CPE | Program Chair

Session I  Peripheral Arterial
Moderator: R. Eugene Zierler, MD, RPVI, FSVU
8:15 a.m.  Pre and Post Op Imaging of Radial and Ulnar Artery Aneurysms | David M. Williams, BS, RDCS, RVT
8:26 a.m.  Reasonable Lower Extremity Arterial Protocols | George Berdejo, BA, RVTV,FSVU
8:37 a.m.  When is Peripheral Arterial Duplex Appropriate? 
Ketan M. Desai, MD
8:49 a.m.  Optimizing the Interpretation of Arterial Studies in the Vascular Lab | John Gocke, MD, MPH, RVTV, RPVI
9:00 a.m.  Understanding the Impact of Cardiac Conditions on Vascular Lab Testing | Mark W. Vogel, MD, FACC, RPVI
9:20 a.m.  Exhibit Viewing and Break
9:50 a.m.  Lower Extremity Arterial Waveform Analysis 
Patricia Poe, BA, RVTV, FSVU
10:03 a.m.  Non-Atherosclerotic Syndromes of the Lower Extremities | Richard C. Pennell, MD, FACS, RPVI, CPE
10:16 a.m.  SVS Practice Guidelines for Follow-up After Arterial Procedures | R. Eugene Zierler, MD, RPVI, FSVU
10:30 a.m.  Panel Discussion
11:00 a.m.  Workshops:
Ambassador Room  Post Intervention Lower Extremity Arterial Duplex 
Phillip Bendick, PhD, RVTV, FSDMS, FSVU

Promenade Room  Arterial Doppler Upper Extremity | Paula Hegerick, BS, RVTV, RDCS, RPVI, FSVU
Promenade Room  Arterial Doppler Lower Extremity | Anne Marie Kupinski, PhD, RVTV, FSVU, RDCS
Promenade Room  Abdominal Findings - Common and Incidental 
Stephanie Wilson, BS, RDCS, RVTV, FSVU
Pavilion Room  Lower Extremity Arterial Bypass Imaging 
William Schroeder, BS, RVTV, RPVI, FSVU
Pavilion Room  Pelvic Venous Disorders 
Sara Skjonsberg, BS, RVTV, RPVI
Pavilion Plaza  Interpreting with the Masters
Laurence Needleman, MD, Richard C. Pennell, MD, FACS, RPVI, CPE
12:30 p.m.  Lunch

Session II  Venous | Moderator: Laurence Needleman, MD
1:30 p.m.  Protocols for DVT: SRU Consensus Results
Laurence Needleman, MD
1:40 p.m.  Unpacking the Lower Extremity Venous Reflux Examination
Sara Skjonsberg, BS, RVTV, RPVI
1:50 p.m.  Perforating Veins—Anatomy, Function, and Evaluation
William Schroeder, BS, RVTV, RPVI
2:00 p.m.  Factors Predicting a Positive Venous Duplex for DVT: Are we ordering too many?
Melanie Nukala, MD
2:10 p.m.  Exhibit Viewing and Break
2:40 p.m.  Duplex Diagnosis of Abdominal Venous Compression Syndromes 
R. Eugene Zierler, MD, RPVI, FSVU
3:00 p.m.  Understanding Venous Ultrasound Terminology: Acute, Chronic, and Recurrent DVT
Laurence Needleman, MD
3:10 p.m.  Current Status of Medical Management of DVT
Phillip J. Bendick, PhD, RVTV, FSDMS, FSVU
3:20 p.m.  Impact of Intravascular Catheters on Upper Extremity DVT: A Word of Caution
Jon Orlino, MD
3:30 p.m.  Panel Discussion
4:00 p.m.  Ambassador Room  Cardiac Effects on Peripheral Doppler Waveforms | David M. Williams, BS, RDCS, RVTV
Director's Room  Upper Extremity Venous Duplex | Patricia Poe, BA, RVTV, FSVU
Promenade Room  Imaging Below the Knee 
Stephanie Wilson, BS, RDCS, RVTV, FSVU
Consulate Room  Dialysis Access Imaging
Kelly Byrnes, BS, RVTV, FSVU
Consulate Room  Lower Extremity Venous Duplex | Lisa Wynd, BSRT(R), RDCS, RDMS, RVTV
Pavilion Room  Venous Reflux Exam | Sara Skjonsberg, BS, RVTV, RPVI
Plaza  The Impossible Game: Part I
Anne Marie Kupinski, PhD, RDCS, RDMS, RVTV / Bill Schroeder, BS, RVTV, RPVI, FSVU
5:25 p.m.  Adjourn
5:30 p.m.  Reception in Exhibit Hall

FRIDAY, FEBRUARY 22, 2019
6:45 – 8 a.m.  Registration | Exhibit Viewing Continental Breakfast
7-8 a.m.  Principles of Ultrasound Physics: Doppler Principles and Doppler Angle—the Truth about 60 Degrees
Frank Miele, MSEE

SESSION III  Joint Session with Society for Vascular Ultrasound - Cerebrovascular Disease
Moderator: Richard C. Pennell, MD, FACS, RPVI, CPE
8:00 a.m.  Daily Update | Richard C. Pennell, MD, FACS, RPVI, CPE
8:05 a.m.  Carotid Duplex: Lessons Learned in the Core Lab
Steve Knight, BS, RVTV, RDCS, RDMS
8:17 a.m.  Role of the Vascular Lab in Diagnosis of Temporal Arteritis | Mina Boutrous, MD
8:29 a.m.  Duplex Evaluation of Radiation induced Cerebrovascular Disease
Adam Ring, MD
8:41 a.m.  Carotid Criteria Confusion—How Did We Get Here?
Laurence Needleman, MD
8:53 a.m.  Report from the Working Group on Carotid Criteria—Where do We Go From Here? | Michael Lilly, MD, RVTV, RPVI
SESSION IV  Abdominal/Visceral/Other Imaging
Moderator: Scott G. Westfall, MD, FACS
1:30 p.m. Imaging of Renal Transplants Anna Marie Kupinski, PhD, RVT, FSVU, RDMS
1:42 p.m. Mesenteric Duplex Imaging Before and After Stenting
Michael Lilly, MD, RVT, RPVI
1:54 p.m. FEVAR: Understanding How Complex Stent Grafts are Constructed—Fenestrations, Snorkels, and Chimneys Vito A. Mantese, MD, FACS
2:06 p.m. pearls for Imaging of Aortic Endografts Cindy Blumenstein, RVT
2:18 p.m. Modern Diagnosis and Treatment of Inflammatory Aortitis and AAA Bradley Bowles, MD
2:20 p.m. Exhibit Viewing and Break
2:50 p.m. Failure Modes of AV Access Procedures Are Predetermined by Access Type | Scott G. Westfall, MD, FACS
3:02 p.m. Volume Flow Measurements in AV Access Evaluation: Now Required | Steve Knight, BSc, RVT, RDCS, RDMS
3:14 p.m. Optimizing Interpretation of Dialysis Access Duplex Studies | Patricia Poe, BA, RVT, FSVU
3:30 p.m. Panel Discussion
4:00 p.m. Workshops: Carotid Duplex Ultrasound - What’s Important Philip Bendick, PhD, RVT, FSDMS, FSVU
4:05 p.m. TCD (Non-Imaging) Patricia Poe, BA, RVT, FSVU
4:10 p.m. Billing and Coding Joseph Hughes, RVT, RVS, FSVU
4:15 p.m. Washko's World - A Complex Vascular Adventure | Patrick Washko, BSRT, RDCS, RDMS, RPhS, FSVU
4:30 p.m. Lower Extremity Arterial Mapping | George Berdeja, BA, RVT, FSVU
4:35 p.m. Dialysis Access Imaging Patricia Poe, BA, RVT, FSVU
4:40 p.m. The Impossible Game: Part II Anne Marie Kupinski, PhD, RVT, RDMS, FSVU/Bill Schroeder, BS, RVT, RPhS, FSVU
5:25 p.m. Adjourn

SUNDAy, FEBRUARY 23, 2019
6:45 - 8 a.m. Registration | Exhibit Viewing Continental Breakfast
7-8 a.m. Principles of Ultrasound Physics: Color Doppler Principles and Optimization Frank Miele, MSEE
8:00 a.m. Screening for AAA: Outcomes and Lessons Learned from Developing a Program Raghu Motaganahalli, MD, FRCS, FACS
8:10 a.m. Venous Hemodynamics—What you Need to know in 2019? | Bill B. Schroeder, BS, RVT, RPhS, FSVU
8:20 a.m. Codifying Duplex Criteria for the Impact of Stents on Arterial Imaging | Marge Hutchisson, BS, RVT, RDCS, RPhS
8:30 a.m. Duplex Ultrasound for Pelvic Venous Disorders | Sara Skjonsberg, BS, RVT, RPhS
8:40 a.m. Point of Care Ultrasound: Where do we Stand Now? | Michael Lilly, MD, RVT, RPVI
8:50 a.m. Comparison of Hyperspectral Imaging to ABI and Toe Brachial Index in Evaluation of Arterial Insufficiency | Raghu Motaganahalli, MD, FRCS, FACS
9:00 a.m. Review of Vascular Ultrasound Literature-2018 Philip Bendick, PhD, RVT, FSDMS, FSVU
9:15 a.m. Panel Discussion
9:45 a.m. Exhibit Viewing and Break

SESSION V  New and Evolving Concepts
Moderator: Phillip J. Bendick, PhD, RVT, FSDMS, FSVU
11:27 a.m. Lessons Learned from a Vascular Geek: Building a Free e-Resource Library Steve Knight, BSc, RVT, RDCS, RDMS
11:40 a.m. Panel Discussion
Noon Adjourn
2019 SYMPOSIUM WORKSHOP OBJECTIVES

Thursday Morning Workshops:
- Demonstrate techniques to improve quality imaging of the lower extremity arterial system.
- Explain the protocol for performing an upper extremity arterial Doppler study and components of Allen’s test and Thoracic Outlet Syndrome.
- Describe the changes in the Doppler waveforms with mild, moderate, and severe peripheral vascular disease.
- Develop better understanding of incidental findings you may discover when performing abdominal vascular imaging.
- Explain the components of arterial bypass graft imaging and the techniques for improved imaging.
- Discuss types of pelvic venous disorders, pelvic venous anatomy, and the types of imaging studies used to diagnose them.
- Better understanding of interpreting difficult noninvasive vascular studies.

Thursday Afternoon Workshops:
- Describe how some cardiac syndromes affect the peripheral Doppler waveforms.
- Apply techniques demonstrated to improve quality imaging of upper extremity veins and the central veins.
- Develop techniques for improving image quality of the lower extremity vessels below the knee.
- Define updated protocol for dialysis access imaging and performing volume flows.
- Describe protocol for lower extremity venous study and the different characteristics of acute versus chronic deep vein thrombosis.
- Demonstrate technique and discuss tips for performing venous reflux studies.

Friday Morning Workshops:
- Explain the proper technique and protocol for renal artery imaging and tips to improve image quality.
- Better understanding of temporal artery imaging, how to perform, and what you are looking for.
- Demonstrate proper technique and application settings to obtain quality TCD imaging.
- Apply techniques demonstrated to improve image quality of aortic stent grafts.
- Recognize different strategies for improving the management of your vascular lab.
- Describe techniques to improve your ergonomics and increase your safety.
- Better understanding of hemodialysis access grafts and fistulas through case study review.

Friday Afternoon Workshops:
- Describe the basics of carotid imaging and discuss important components.
- Discuss protocol and application settings for a quality TCD.
- Understand the current billing and coding issues and how to get proper reimbursement for the vascular lab.
- Apply techniques demonstrated to improve quality imaging of the lower extremity arterial system.
- Discuss criteria for a proper functioning fistula and gain better understanding of volume flows.
- Increase your knowledge of unique vascular cases through case study presentations.
LEARNING OBJECTIVES GENERAL SESSIONS

Upon completion of this symposium attendee should be better able to:

**Abdominal/Visceral/Other Imaging Session**
- Describe the various types of complex aortic stent grafts including fenestrations, snorlkes, and chimney.
- Recognize the failure modes of different types of AV access procedures.
- Understand the duplex diagnostic differences between native mesenteric arteries and those previously treated with stents.

**Cerebrovascular Session**
- Summarize recent changes in the IAC Consensus criteria for carotid artery duplex imaging.
- Characterize the duplex findings in the diagnosis of Temporal Arteritis.
- Understand the principles of duplex imaging of radiation induced carotid artery disease.

**IAC Accreditation Workshop**
- Discuss the history of IAC and its mission.
- Recognize the new 2018 standards and their relationship to the application process.
- Utilize the electronic application process for accreditation.

**New and Evolving Concepts Session**
- Understand venous hemodynamics and its impact on treatment of venous disease.
- Describe the impact of stents on duplex diagnostic criteria.
- Recognize the current status of point of care ultrasound.

**Principles of Ultrasound Physics**
- Describe techniques for improving visualization of small blood vessels and 2D imaging.
- Understand Doppler principles including the significance of the 60 degree Doppler angle.
- Understand Color Doppler principles.

**Peripheral Arterial Session**
- Describe the impact of cardiac conditions on vascular lab testing.
- Discuss SVS Practice Guidelines for follow up after arterial procedures.
- Utilize a more efficient lower extremity arterial protocol.

**Vascular Laboratory Management and Government Relations Session**
- Describe the impact of social media on the practice of vascular ultrasound.
- Manage diversity in the vascular workplace.
- Understand the value of vein center accreditation and how best to achieve accreditation of their program.

**Venous Session**
- Discuss SRU Consensus protocols for venous imaging.
- Make the diagnosis of abdominal venous compression syndromes.
- Describe the current status of medical management of DVT.