

# Friday - Saturday, November 16 - 17, 2018



on Management and Clinical Issues

Symposium Chairs: George L. Berdejo, BA, RVT, FSVU Natalie A. Marks, MD, RPVI, RVT

Symposium Co-Chairmen: Ann Marie Kupinski, PhD, RVT, FSVU Nicos Labropoulos, BSc (Med), PhD, DIC, RVT Laurence Needleman, MD Frank J. Veith, MD

Honorary Chair: Anne M. Jones, RN, BSN, RVT, RDMS, FSVU

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SVU sets the standards for the field. Member input is used in regular updates of Professional Performance Guidelines.

# STAND OUT IN YOUR FIELD

# advocacy

SVU is the united voice of our profession. Part of your member dues support lobbying Congress, government agencies, and state regulators to ensure fair treatment and sensible regulations that do not adversely impact patient care.

# pass it on

SVU and the SVU Foundation provide scholarships and grants to make opportunities available to students, young professionals, and career vascular sonographers.

# make your mark

Get involved! SVU has over 12 committees where you can make great connections and impact your profession, and conducts regular member surveys to glean deep insights into the field.

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The VOICE for the Vascular Ultrasound Profession since 1977

Welcome to

A dvances in
V ascular
I maging and
D iagnosis

29<sup>TH</sup> SYMPOSIUM AND WORKSHOPS ON MANAGEMENT AND CLINICAL ISSUES



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SYMPOSIUM CHAIRS George L. Berdejo, BA, RVT, FSVU Natalie A. Marks, MD, RPVI, RVT SYMPOSIUM CO-CHAIRS Ann Marie Kupinski, PhD, RVT, FSVU Nicos Labropoulos, BSc (Med), PhD, DIC, RVT Laurence Needleman, MD Frank J. Veith, MD HONORARY CHAIR Anne M. Jones, RN, BSN, RVT, RDMS, FSVU, FSDMS SYMPOSIUM MANAGING DIRECTOR Jacqueline M. Simpson, BBA SYMPOSIUM ASSOCIATE DIRECTOR Steven J. Feld, MSW WORKSHOP COORDINATORS Fernando Amador, RVT Richard Dubin, AAS-DMS, RVT, RDMS Kelvin Portalatin, AA, RVT CENTER FOR CONTINUING MEDICAL EDUCATION Steven M. Kawczak, PhD **ACKNOWLEDGMENTS** 

Mindray North America\* Philips Healthcare\*

# DISCLAIMER

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We have made every effort to ensure that the syllabus is accurate. We cannot take responsibility for errors, deletions or omissions.



## Dear Colleague,

Welcome to the 29th Annual *Advances in Vascular Imaging and Diagnosis (AVIDsymposium) Symposium and Workshops on Clinical and Management Issues* in Vascular Ultrasound! The program has been designed to allow attendees to access a broad overview of topics or delve deeply into one or two. In addition, special care has been taken to incorporate protocols and guidelines into the workshop session lectures to demonstrate how and why they should be applied in your daily practice. The Program Committee has collaborated to create an educational experience that is sure to spark the interest of all cardiovascular health professionals. Expert faculty will present novel sessions on:

Adapting guidelines into practice, lab management and career development for technologists, sonographers and physicians. In addition, you will be able to acquire valuable information on advances in technology that have increased the diagnostic capabilities of vascular ultrasound and its increasing role in the evaluation and treatment of vascular disease and the management of the vascular disease patient.

V ascular ultrasound and its role and transition to increasing numbers of specialists who are employing both traditional and newer cutting edge methods and techniques to improve patient care and management. Join us for lunch Saturday to learn about the use of social media and the Internet to ensure that we, and others, can "visualize" the value and utility of Vascular Ultrasound in the "Pearls, Perils, Pitfalls of Social Media, List Serves and the Internet" session.

nteresting case-based learning in the form of "real" clinical cases that will address both technical and interpretive challenges on Friday and Saturday, respectively.

**D**iscussion and debate of the current clinical and philosophical controversial issues in Vascular Ultrasound including a Friday afternoon session on "Appropriate Use" of the Appropriate Use Criteria in Post Intervention Follow-Up, with a "Review of the Current Evidence."

**2018** also brings with it an array of other educational opportunities at the *AVIDsymposium*. They have been organized into thematic tracks that vary not only in content, but also learning methods. In addition to the case-based learning we have planned lectures on emerging new technology and clinical applications of vascular ultrasound and special lunchtime lectures.

The *AVIDsymposium* faculty prides itself on being accessible to attendees. We do this via planned "discussion" periods for each of the sessions as well as in pre- and post-lunch Workshops Friday and Saturday that will provide excellent opportunities for "one-on-one" discussion and allow you to contribute to the conversation. Finally, we offer networking opportunities with leaders in the field, colleagues, and our partners in industry with opportunity to evaluate the most recent advances in ultrasound technology, share experiences and obtain connections.

The *AVIDsymposium* program committee is dedicated to the delivery of quality care to its patients and the education of the medical community at large. We anticipate that this will be another enjoyable and educational experience for all involved. Welcome to New York City!

Sincerely,

George L. Berdejo, BA, RVT, FSVU Symposium Chair

Natalie

Natalie A. Marks, MD, RPVI, RVT Symposium Chair

# **7:00 A.M.**General Registration – Rhinelander Gallery, 2nd Floor<br/>Faculty Registration – Morgan Suite, 2nd Floor<br/>Coffee – South Corridor, 2nd Floor

Plenary Sessions will be held in the Murray Hill Suites on the 2<sup>nd</sup> floor.

# NEEDS ASSESSMENT

Peripheral Vascular Disease (PVD) in the U.S. affects approximately 8 million to 12 million patients a year; some experts in the field believe this may be underestimated. The disease is associated with significant cardiovascular morbidity and mortality, with a high rate of fatal and non-fatal cardiovascular events such as myocardial infarction, stroke, renal failure, limb amputations, abdominal aortic aneurysms, pulmonary embolus and progressive ischemic end-organ dysfunction.

Since atherosclerosis is the most common cause of PVD, patients with PVD have a rate of cardiovascular mortality that is 3 to 4 times higher than age-matched controls. The cardiac mortality in symptomatic PVD is estimated to be 50% at 10 years. The reduction in quality of life from global vasculopathy in many patients can thus be significant.

Prompt and accurate diagnosis of these disease processes is of utmost importance. The AVIDsymposium is designed to address this need by providing the vascular community with continuing medical education in this area. The latest pharmacologic, radiologic, surgical and endovascular techniques and technologies will be presented, along with discussions of when these treatments are justified and indicated and when they are not. Updates on clinical trials and opportunities for dialogue with experts in the field provide insight along with the latest data on the results of the various diagnostic and treatment modalities.

# EDUCATIONAL OBJECTIVES

Advances in Vascular Imaging and Diagnosis 29<sup>th</sup> Symposium and Workshops on Management and Clinical Issues is an intensive two-day course designed to provide a comprehensive update on the diagnosis of vascular disease using real time B-mode imaging, color and spectral Doppler and other noninvasive techniques. The course will also address important issues in the area of Vascular Laboratory management, vascular ultrasound education, reimbursement and laboratory accreditation. An internationally renowned faculty has been assembled to provide the latest in their respective areas of expertise. This will be accomplished via didactic lectures and will be enhanced by ample time for faculty panel discussions designed to provide interaction with the audience. In addition, live scanning demonstrations and hands-on workshops will be supervised by known experts in their fields and will utilize leading edge equipment.

Following this continuing medical education activity, the participants will:

- Describe recent developments in vascular ultrasound technology
- Incorporate the Vascular Laboratory into the management of patients with vascular disease
- Identify and compare noninvasive tests that are available to aid in the diagnosis of vascular disease

# **GENERAL INFORMATION**

- Identify current therapy and their roles for the effective management of peripheral arterial/venous disease; and carotid artery disease
- Utilize duplex ultrasound prior to, during and after endovascular procedures
- Apply issues regarding Vascular Laboratory management, reimbursement and accreditation to their practice.

# TARGET AUDIENCE

This course is intended for:

- Vascular Technologists
- Sonographers
- Vascular Surgeons
- Radiologists
- Neurologists
- Vascular Nurses
- Vascular Interventionalists
- Medical and Ultrasound Students
- Other physicians and allied health professionals with an interest in the diagnosis and treatment of vascular disease.

# ONLINE ACCESS TO ABSTRACTS

Presentation slides will be used as abstracts and will be available on the program page of the AVIDsymposium website at www.AVIDsymposium.org after the meeting. Abstracts will be available on the website for one full year.

# ACCREDITATION STATEMENT

The Cleveland Clinic Foundation Center for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Cleveland Clinic Foundation Center for Continuing Education designates this live activity for a maximum of 17.75 *AMA PRA Category 1 Credits*<sup>TM</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Participants claiming CME credit from this activity may submit the credit hours to the American Osteopathic Association for Category 2 credit.

# FOR ARDMS AND CCI CREDENTIALED VASCULAR TECHNOLOGISTS AND SONOGRAPHERS

For Vascular Technologists and Sonographers, Continuing Medical Education credit hours are available on an hour-for-hour basis and may be used to fulfill the continuing medical education requirements necessary to retain certification with the American Registry for Diagnostic Medical Sonography (ARDMS)<sup>1</sup> and Cardiovascular Credentialing International (CCI)<sup>2</sup> or for accreditation with the Intersocietal Accreditation Commission (IAC).

- 1. http://www.ardms.org/registrant\_resources/cme\_general\_information/ cme\_general\_information
- 2. http://www.cci-online.org/content/ceu-providers

# CME CERTIFICATES AND COURSE EVALUATION FORMS

CME certificates will be available online at www.AVIDsymposium.org. An e-mail with a unique password and instructions on how to obtain the certificate and complete a brief, optional course evaluation will be sent to all registered attendees after the meeting. The e-mail will be sent to the e-mail address that was used to register the attendee. **Please note that CME Certificates must be claimed by February 28, 2019.** Instructions for claiming your certificate are also available in the CME section of this course syllabus.

# FACULTY DISCLOSURE

The Cleveland Clinic Foundation Center for Continuing Education has implemented a policy to comply with the current Accreditation Council for Continuing Medical Education Standards for Commercial Support requiring resolution of all faculty conflicts of interest. Faculty declaring a relevant commercial interest will be identified in this course syllabus.

# ADA STATEMENT

The Cleveland Clinic Foundation Center for Continuing Education complies with the legal requirements of the Americans with Disability Act. If any participant of the AVIDsymposium requires special assistance, please advise a staff member in the registration area in the Rhinelander Gallery on the 2nd floor.

# WORKSHOP SESSIONS

Please see Sessions 3, 14 and 16 for details.

# FOOD SERVICE

Coffee, lunch and refreshments breaks will be served in the South Corridor on the 2<sup>nd</sup> Floor on Friday and Saturday.

# **GENERAL INFORMATION**

# EXHIBITS/PAVILIONS

Exhibitors will display their products in the South Corridor on the 2nd floor, on the 2nd floor Promenade, in the 3rd floor Foyer and Promenade, and in other designated areas.

# NAME BADGES

For the convenience of our exhibitors and attendees, the bar code on your name badge includes your name, address, telephone and fax numbers, and e-mail address. Exhibitors can scan your name badge for this information. Please wear your name badge at all times.

# **FLOOR PLAN**

A Floor Plan of the New York Hilton-Midtown is included in this syllabus to help you find your way more easily.

# HOSPITALITY DESK

The staff will be happy to answer any questions you have, or to make any arrangements that you may require. Staff members are located in the Rhinelander Gallery on the 2nd floor.

# **CELL PHONES AND PAGERS**

As a courtesy to other attendees, please turn off your cell phones and pagers, or set to vibrate.

# COAT CHECK

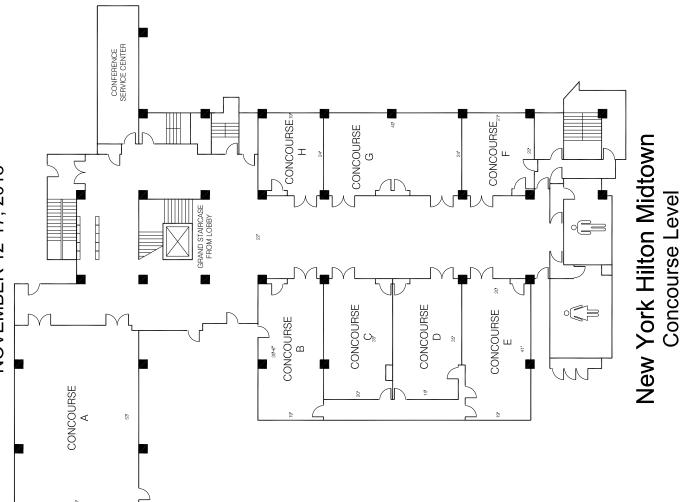
Coat Check is located on the 2nd floor.

# **FLOOR PLANS**

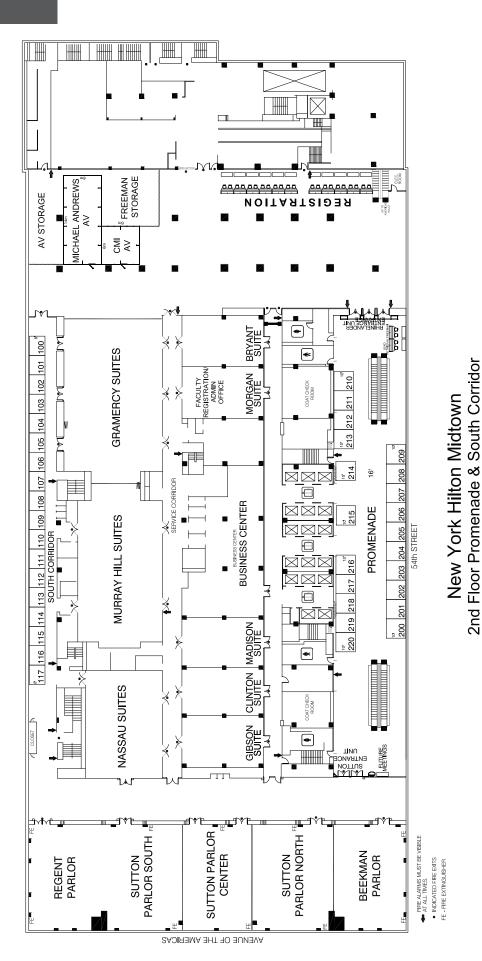


Advances in Vascular Imaging and Diagnosis



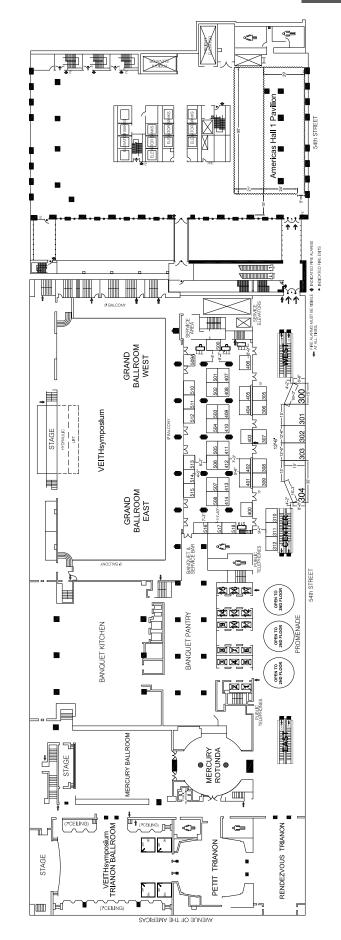


# VEITHsymposium/AIMsymposium/AVIDsymposium NOVEMBER 12-17, 2018



# **FLOOR PLANS**

# FLOOR PLANS

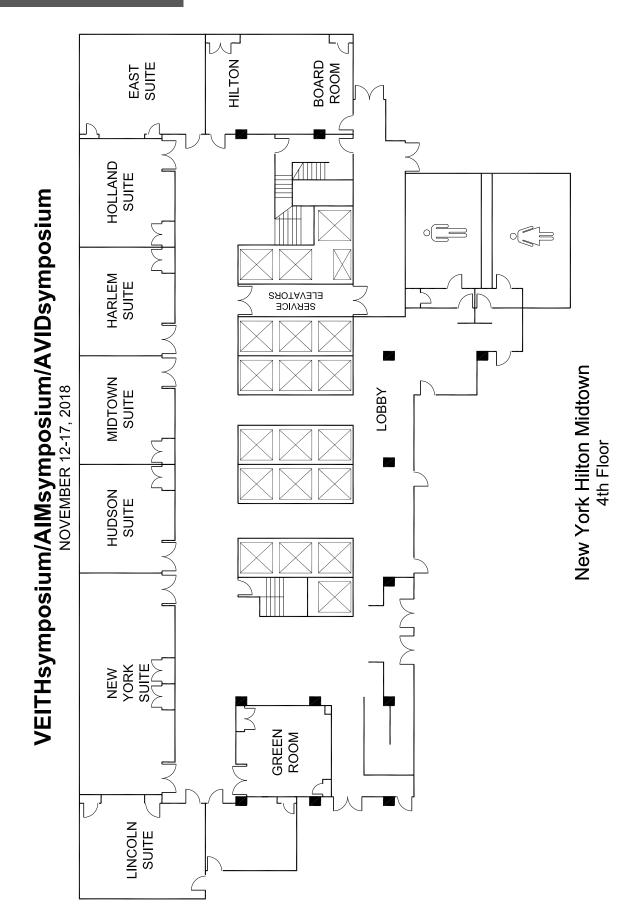


VEITHsymposium/AIMsymposium/AVIDsymposium

NOVEMBER 12-17, 2018

New York Hilton Midtown 3rd Floor Promenade, Foyer & Americas Hall 1

# FLOOR PLANS

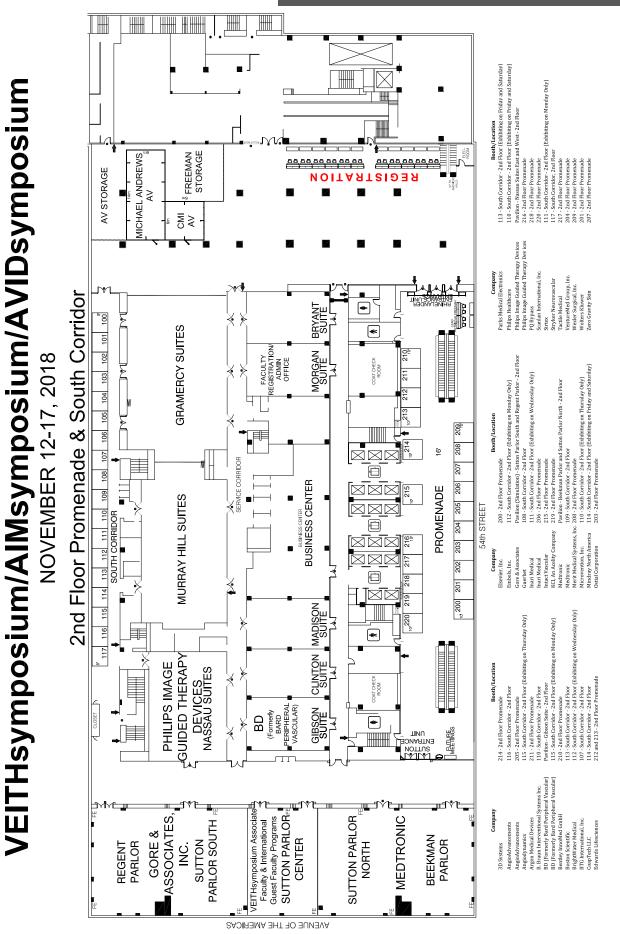


# **EXHIBITS** AND **PAVILIONS**



Advances in Vascular Imaging and Diagnosis

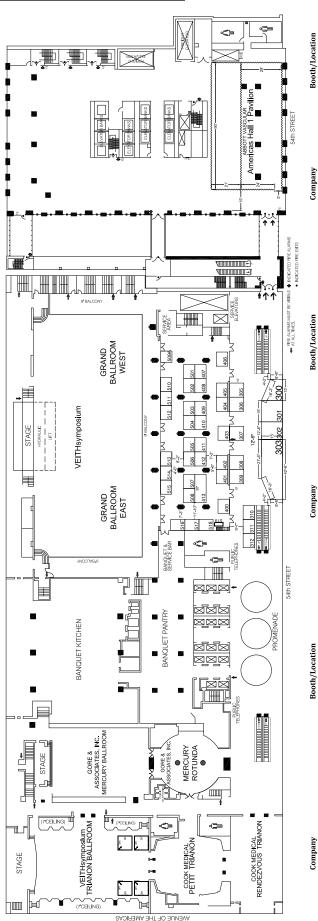
# EXHIBITS AND PAVILIONS



# **EXHIBITS AND PAVILIONS**

VEITHsymposium/AIMsymposium/AVIDsymposium NOVEMBER 12-17, 2018

3rd Floor Promenade, Foyer & Americas Hall 1



Company Abbott Vascular BD (formerly Bard Peripheral Vascular) Boston Scientific BTG Cook Medical Coroik Acardinal Health Company CryoLife CoryoLife CoryoLife Coroular News DIVINE ID / CACVS / iMEET Endologix, Inc.

Booth/Location Pavilion - Americas Hall - 3rd Floor 516, 517 and 518 - 3rd Floor Foyer 300 - 3rd Floor Promenade 305 and 306 - 3rd Floor Promenade Pavilion - Petit Trianon and Rendezvous Tianon - 3rd Floor 401 - 3rd Floor Foyer 512 - 3rd Floor Foyer 407 - 3rd Floor Foyer 310, 311 and 312 - 3rd Floor Promenade

Endovascular Toady Getinge Getinge Gore & Associates Gore & Associates Gore & Associates Guerbet HyperMed Imaging, Inc. Janssen Pharmaceuticals, Inc. Medstreaming Oscor, Inc. Penumbra, Inc. Penumbra, Inc.

Booth/Location 519 - 3rd Floor Foyer 513, 514 and 515 - 3rd Floor Foyer Pavilion. Mercury Rotunda and Ballroom - 3rd Floor 302 - 3rd Floor Proyer 411 and 412 - 3rd Floor Foyer 400 - 3rd Floor Foyer 403 and 415 - 3rd Floor Foyer 307 - 3rd Floor Foyer 308 and 309 - 3rd Floor Promenade 308 and 309 - 3rd Floor Promenade 510 - 3rd Floor Promenade 510 - 3rd Floor Foyer

Company Ra Medical Systems, Inc. SAGE Publishing Shockwave Medical Shockwave Medical Semens Healthineers Silk Road Medical STTE Symposium Teruno Aortic / Terumo Medical Vascular Simulations, Inc. Walk Vascular Ziehm Imaging Inc.

413 - 3rd Floor Foyer
408 - 3rd Floor Foyer
408 - 3rd Floor Foyer
403 - 3rd Floor Foyer
301 - 3rd Floor Foyer
503 and 506 - 3rd Floor Foyer
511 - 3rd Floor Foyer
503 - 3rd Floor Foyer
504 - 3rd Floor Foyer
508 - 3rd Floor Foyer
507 and 508 - 3rd Floor Foyer

# COMBINED EXHIBIT HALL for VEITHsymposium, AIMsymposium and AVIDsymposium (MONDAY – FRIDAY/SATURDAY)

#### We acknowledge the participation of the following companies as exhibitors:

COMPANY	LOCATION
3D Systems	. 214 - 2nd Floor Promenade
Abbott	. Pavilion - Americas Hall 1 - 3rd Floor
AngioAdvancements	. 116 - South Corridor - 2nd Floor
AngioAdvancements	. 205 – 2nd Floor Promenade
AngioDynamics	. 115 - South Corridor - 2nd Floor (Exhibiting on Thursday Only)
Argon Medical Devices	. 211 - 2nd Floor Promenade
B. Braun Interventional Systems Inc	. 110 - South Corridor - 2nd Floor
BD (Formerly Bard Peripheral Vascular) .	. Pavilion - Gibson Suite - 2nd Floor
BD (Formerly Bard Peripheral Vascular) .	. 516, 517 and 518 – 3rd Floor Foyer
BD (Formerly Bard Peripheral Vascular) .	. 115 - South Corridor - 2nd Floor (Exhibiting on Monday Only)
Bentley	. 210 - 2nd Floor Promenade
Boston Scientific	. 300 – 2nd Floor Promenade
Boston Scientific	. 113 - South Corridor - 2nd Floor
BrightWater Medical	. 112 – South Corridor – 2nd Floor (Exhibiting on Wednesday Only)
BTG	. 305 and 306 - 3rd Floor Promenade
BTG International Inc	. 107 - South Corridor - 2nd Floor
CoapTech LLC	. 114 – South Corridor – 2nd Floor
Cook Medical	. Pavilion - Petit Trianon & Rendezvous Trianon – 3rd Floor
Cordis, A Cardinal Health Company	. 503 - 3rd Floor Foyer
CryoLife	. 512 - 3rd Floor Foyer
CX 2019/Vascular News	. 503 – 3rd Floor Foyer
DIVINE ID / CACVS / i-MEET	. 407 – 3rd Floor Foyer
Edwards Lifesciences	. 212 and 213 - 2nd Floor Promenade
Elsevier, Inc	. 200 - 2nd Floor Promenade
Embolx, Inc	. 112 - South Corridor - 2nd Floor (Exhibiting on Monday Only)
Endologix, Inc	. 310, 311 and 312 - 3rd Floor Promenade
Endovascular Today	. 519 – 3rd Floor Foyer

# EXHIBITS AND PAVILIONS

COMPANY	LOCATION
Getinge	. 513, 514 and 515 - 3rd Floor Foyer
Gore & Associates	. Pavilion - Mercury Rotunda and Ballroom - 3rd Floor
Gore & Associates	. Simulation Pavilion - Sutton Parlor South and Regent Parlor - 2nd Floor
Guerbet	. 302 – 3rd Floor Promenade
Guerbet	. 108 - South Corridor - 2nd Floor
HyperMed Imaging, Inc	. 411 and 412 – 3rd Floor Foyer
Inari Medical	. 111 - South Corridor - 2nd Floor (Exhibiting on Wednesday Only)
Inari Medical	. 206 – 2nd Floor Promenade
Intact Vascular	. 215 - 2nd Floor Promenade
Janssen Pharmaceuticals, Inc	. 400 - 3rd Floor Foyer
KCI, An Acelity Company	. 219 - 2nd Floor Promenade
Medsteaming	. 404 and 405 - 3rd Floor Foyer
Medtronic	. Pavilion – Beekman Parlor and Sutton Parlor North – 2nd Floor
Medtronic	. 109 - South Corridor - 2nd Floor
Merit Medical Systems, Inc	. 208 - 2nd Floor Promenade
Microvention, Inc	. 110 - South Corridor - 2nd Floor (Exhibiting on Thursday Only)
Mindray North America	. 114 - South Corridor - 2nd Floor (Exhibiting on Friday and Saturday)
Oscor Inc	. 307 - 3rd Floor Promenade
Ostial Corporation	. 203 - 2nd Floor Promenade
Parks Medical Electronics	. 113 - South Corridor - 2nd Floor (Exhibiting on Friday and Saturday)
Penumbra, Inc	. 308 and 309 - 3rd Floor Promenade
Philips Healthcare	. 110 - South Corridor - 2nd Floor (Exhibiting Friday and Saturday)
Philips IGT D	. Pavilion - Nassau Suites East and West - 2nd Floor
Philips Image Guided Therapy Devices .	. 216 - 2nd Floor Promenade
PQ Bypass, Inc	. 218 - 2nd Floor Promenade
Provascular GmbH	. 510 – 3rd Floor Foyer
Ra Medical Systems, Inc	. 413 - 3rd Floor Foyer
SAGE Publishing	. 408 – 3rd Floor Foyer
Scanlan International, Inc	. 220 - 2nd Floor Promenade
Shockwave Medical	. 403 - 3rd Floor Foyer
Siemens Healthineers	. 301 - 3rd Floor Promenade

# EXHIBITS AND PAVILIONS

COMPANY LO	CATION
Silk Road Medical 50	5 and 506 - 3rd Floor Foyer
SITE Symposium	1 - 3rd Floor Foyer
Stryker Neurovascular	7 - South Corridor - 2nd Floor
Tactile Medical	7 - 2nd Floor Promenade
Terumo Aortic / Terumo Medical 30	3 – 3rd Floor Promenade
Vascular Simulations, Inc 50	1 - 511 - 3rd Floor Foyer
VentureMed Group, Inc	4 - 2nd Floor Promenade
Walk Vascular	9A - 3rd Floor Foyer
Wexler Surgical, Inc	9 - 2nd Floor Promenade
Wolters Kluwer	1 - 2nd Floor Promenade
Zero Gravity Skin	7 - 2nd Floor Promenade
Ziehm Imaging 50	7 and 508 - 3rd Floor Foyer

# PAVILIONS

# VEITHsymposium, AIMsymposium and AVIDsymposium (Tuesday – Friday/Saturday)

COMPANY				LOCATION
Abbott				Americas Hall 1, 3rd Floor
Bard Peripheral Vascular				Gibson Suite, 2nd Floor
Cook Medical			•	Petit Trianon & Rendezvous Trianon, 3rd Floor
Gore & Associates .			•	Mercury Rotunda & Ballroom, 3rd Floor
Gore & Associates .				Sutton Parlor South and Regent Parlor, 2nd Floor
Medtronic				Beekman Parlor & Sutton Parlor North, 2nd Floor
Philips Image Guided The	rapy	v Dev	vices	Nassau Suites East and West, 2nd Floor



Advances in Vascular Imaging and Diagnosis

# FRIDAY, NOVEMBER 16, 2018

#### 7:50 – 8:00 Welcome And Opening Remarks: Navigating The Meeting And Optimizing Your Experience George L. Berdejo, BA, RVT Natalie A. Marks, MD, RVT, RPVI

# SESSION 1 CASE-BASED LEARNING I: QUERIES, QUANDARIES AND QUAGMIRES IN VASCULAR IMAGING – TECHNICAL TRIALS

#### Moderator: Laurence Needleman, MD

Lessons Learned From Challenging Cases and Missed Diagnoses. Benefit from this seasoned faculty and use their **Quality** *Assurance* experiences to help you become a better clinician. "Case Based Learning" with angiographic, CT and MR Correlation. During this session, the practice of clinical vascular sonography and its relationship to patient management will be highlighted and stressed by experts.

8:00 – 8:12	<b>Lower Extremity Arterial</b> Ann Marie Kupinski, PhD, RVT
8:12 – 8:24	<b>Lower Extremity Venous Reflux Testing</b> <i>Diana L. Neuhardt, RVT, RPhS</i>
8:24 – 8:36	<b>Cerebrovascular</b> Phillip J. Bendick, PhD, RVT
8:36 – 8:48	<b>Hemodialysis Access</b> Kelly R. Byrnes, BS, RVT
8:48 – 9:00	<b>Abdominal Imaging</b> Traci B. Fox, EdD, RDMS, RVT
9:00 – 9:15	Panel Discussion
9:15 – 9:35	Break – Visit Exhibits (2 <sup>nd</sup> and 3 <sup>rd</sup> Floors)

# **SESSION 2**

# VENOUS: THROMBO-EMBOLIC DISEASE

Moderator:Mark A. Oliver, MD, RPVI, RVT9:35 - 9:45Multidisciplinary Recommendations From the Society of Radiologists in Ultrasound<br/>(SRU) Consensus Conference on Ultrasound for Lower Extremity Deep Venous<br/>Thrombosis<br/>Laurence Needleman, MD9:45 - 9:55Long-Term Effects Of Ilio-Femoral Vein Thrombosis<br/>Sareh Rajaee, MD, MPH

#### FRIDAY SESSIONS 2–3

9:55 – 10:05	<b>Role Of The Vascular Lab In The Expanding Interventional Treatment Of Iliocaval</b> <b>Venous Occlusion</b> <i>Richard C. Pennell, MD, RPVI</i>		
10:05 — 10:35	Panel Discussion Super Panel on Venous Thromboembolic Disease And The SRU Consensus Recommendations		
	Moderator:	Mark A. Oliver, MD, RPVI, RVT	
	Panelists:	Nicos Labropoulos, BSc (Med), PhD, DIC, RVT Laurence Needleman, MD Diana L. Neuhardt, RVT, RPhS Richard C. Pennell, MD, RPVI Sareh Rajaee, MD, MPH Brian Sapp, RVT, RPhS	
10:35 - 10:45	Break - Visit E	xhibits (2 <sup>nd</sup> Floor and 3 <sup>rd</sup> Floors)	
	Transition to Workshops (Americas Hall 2, 3 <sup>rd</sup> Floor)		

# SESSION 3 WORKSHOP ROTATION 1

# Location: Americas Hall 2, 3rd Floor

Scation: Ameri	icas fiai 2, 510 Fi001
10:45 – 11:45	
ROOM 1	<b>1. Color Optimization</b> <i>Frank Miele, MSEE</i>
	Color Doppler has some similarities to spectral Doppler, some similarities to B-mode imaging, and some unique characteristics. As such, optimizing color and understanding color artifacts is somewhat different than understanding imaging or spectral Doppler. In this lecture (workshop) you will be shown color situations and then asked how to best improve the image or eliminate the artifact(s).
ROOM 2	<b>2. Quality Matters – Manage It Well</b> <i>Richard Dubin, AAS-DMS, RVT, RDMS</i> <i>Angela Rodriguez-Wong, MD, RPVI, RVT</i>
	This lecture/workshop will discuss basic and advanced setup of presets for venous, arterial and carotid duplex examinations. What are the common B-Mode, Spectral and Color Doppler and basic dynamic optimization parameters and how to quickly adjust them for maximum performance. The setup for more advanced needs – Visceral, Dialysis Access, Transcranial Doppler Duplex and EVAR Duplex will also be covered.
ROOM 3	<b>3. Cardiac Effects On Duplex Vascular Ultrasound Testing</b> Heather L. Gornik, MD David M. Williams, MS
	The effect of cardiac pathologies on flow patterns in the venous and arterial circulations and their impact of the peripheral duplex examination and interpretation will be discussed. This will be a case study lecture/workshop.

ROOM 4	<b>4.</b> Principles Of Duplex Diagnosis Laurence Needleman, MD Richard C. Pennell, MD, RPVI
	This workshop will discuss the step-by-step protocol for interpreting the vascular ultrasound study with attention to potential pitfalls in a variety of basic and difficult vascular cases.
ROOM 5	<b>5. Ergonomics</b> <i>Matthew Hernandez, BSc, DPT, CSCS</i>
	Work postures are the one solution over which sonographers have the most control. Regardless of the work schedule or the work station equipment, if sonographers fail to make changes in how they perform exams, they will continue to be at risk for occupational injuries. This workshop will provide practical solutions and advice for maximizing your ergonomic experience in order to reduce the long-term negative effects of WRMSDs.
ROOM 6	6. Doppler Facts And Misconceptions Traci B. Fox, EdD, RDMS, RVT
11:45 – 12:05	Pick up Lunch in the South Corridor Exhibit Area (2nd Floor) and return to the Murray Hill Suites for the Luncheon Program.

# **SESSION 4**

# LUNCHEON PROGRAM: WOUND CARE AND DIABETIC FOOT PRINCIPLES

Moderators:	George L. Berdejo, BA, RVT William D. Suggs, MD
12:05 – 12:14	<b>Doppler In Wound Care Clinics: Microcirculatory Assessment: Why, When, How</b> <i>Sergio X. Salles-Cunha, PhD, RVT</i>
12:15 – 12:24	<b>Differences In Venous, Arterial And Combination Ulcers And Why It's Important</b> <i>William D. Suggs, MD</i>
12:25 – 12:34	<b>Evaluation And Testing For Diabetic Foot Complications</b> <i>Phillip J. Bendick, PhD</i>
12:35 – 12:44	Impact Of Vein And Artery Disease Ratna C. Singh, MD, RPVI
12:45 - 12:55	Panel Discussion
12:55 – 1:10	Break – Visit Exhibits (2 <sup>nd</sup> Floor and 3 <sup>rd</sup> Floors)

#### FRIDAY SESSIONS 5-6

# SESSION 5

PRACTICE ENHANCEMENTS I: "APPROPRIATE USE" OF THE APPROPRIATE USE CRITERIA IN POST INTERVENTION FOLLOW-UP: REVIEW OF THE EVIDENCE

Moderator:	Ann Marie Kupinski, PhD, RVT
1:10 – 1:19	<b>Lower Extremity Angioplasty And Stenting</b> <i>Phillip J. Bendick, PhD, RVT</i>
1:20 – 1:29	<b>Lower Extremity Bypass Grafts</b> Ann Marie Kupinski, PhD, RVT
1:30 – 1:39	<b>Carotid Endarterectomy And Carotid Artery Stenting</b> <i>Ali F. AbuRahma, MD</i>
1:40 – 1:49	<b>Endovascular Aortic Aneurysm Repair</b> <i>Keith D. Calligaro, MD</i>
1:50 – 1:59	<b>Vein Ablation Procedures</b> <i>Thomas F. O'Donnell, Jr., MD</i>
1:59 – 2:11	Panel Discussion

# SESSION 6

## CURVEBALLS AND CONTROVERSIES

Moderators:	George L. Berdejo, BA, RVT Natalie A. Marks, MD, RPVI, RVT
2:12 – 2:22	<b>Things You Are Doing Wrong In Vascular Ultrasound</b> <i>Traci B. Fox, EdD, RDMS, RVT</i>
2:22 – 2:32	Knobology Alters Velocity Measurements, Instruments May Vary: Quality Control Is Mandatory Sergio X. Salles-Cunha, PhD, RVT
2:32 – 2:42	Unusual Causes Of Leg Pain And Swelling: (Things Besides DVT And Reflux) Case Study Presentation Leslie M. Scoutt, MD
2:42 – 2:52	<b>Calf Vein Imaging: My 5 Top Tips And Why You Should Be Doing It</b> <i>Brian Sapp, RVT, RPhS</i>
2:52 – 3:02	Current Status Of Point Of Care Ultrasound – Should There Be Better Oversight And What Does This Look Like R. Eugene Zierler, MD, RPVI

#### FRIDAY SESSIONS 7-9

# SESSION 7 ARTERIAL EVALUATION

Moderator:	Sergio X. Salles-Cunha, PhD, RVT
3:03 – 3:13	<b>Arterial Pressure: How To Measure It Correctly And Differences Between</b> <b>Oscillometric And Doppler Ultrasonic Measurements</b> <i>Sergio X. Salles-Cunha, PhD, RVT</i>
3:13 – 3:23	<b>Review Of Non-Atherosclerotic Arterial Syndromes Of The Lower Extremities</b> <i>Richard C. Pennell, MD, RPVI</i>
3:23 – 3:33	<b>Uncommon Aneurysm Case Studies</b> David M. Williams, MS
3:33 – 3:43	<b>Imaging For Aortoiliac Pathology</b> Nicos Labropoulos, BSc (Med), PhD, DIC, RVT
3:43 – 4:00	Panel Discussion – Combined Sessions 6 and 7

# SESSION 8

# MISCELLANEOUS TOPICS IN VASCULAR ULTRASOUND

Moderators:	George L. Berdejo, BA, RVT Angelique Hernandez, AS, RVT
4:01 – 4:11	Can Duplex Ultrasonography Evaluate Unsuspected Subclinical Axillary/Subclavian Stenosis Before Axillo-Bifemoral Bypasses Or Is Angiography Always Mandatory Keith D. Calligaro, MD
4:11 – 4:21	<b>Duplex Diagnosis Of Abdominal Venous Compression Syndromes</b> <i>R. Eugene Zierler, MD, RPVI</i>
4:21 – 4:31	<b>How To Avoid Common Doppler Mistakes</b> David M. Williams, MS

# **SESSION 9**

MORE ON VENOUS EVALUATION: CHRONIC VENOUS INSUFFICIENCY (CVI)

Moderator:	Nicos Labropoulos, BSc (Med), PhD, DIC, RVT
4:31 – 4:41	Patterns Of Lower Extremity Vein Reflux: Segmental, Multi-Segmental, Diffuse, Proximal, Distal Non-Saphenous Reflux Diana L. Neuhardt, RVT, RPhS
4:41 – 4:51	Patterns Of Pelvic Vein Reflux And When To Be Suspicious Based On The Thigh Examination, History, And Findings Sergio X. Salles-Cunha, PhD, RVT
4:51 – 5:01	<b>When To Treat 50% Area Reduction In Non-Thrombotic Iliac Veins</b> <i>Alan M. Dietzek, MD, RPVI</i>

#### SATURDAY SESSION 9

5:01 – 5:11	Effect Of Iliac Vein Stenting On Infrainguinal Reflux	
	Anil P. Hingorani, MD	

- 5:11 5:25 Panel Discussion Combined Sessions 8 and 9
- 5:25 5:30 Summary of the Day

# SATURDAY, NOVEMBER 17, 2018

# **SESSION 10**

PRINCIPLES TUNE-UP: HOW SHARP ARE YOU - PART I

Moderators: George L. Berdejo, BA, RVT Fernando Amador, RVT

7:00 – 7:40	Principles Tune-Up
	Frederick Kremkau, PhD

# SESSION 11

# MORE ON VENOUS DISEASE: DIAGNOSTIC VENOUS MIX

Moderator: Nicos Labropoulos, BSc (Med), PhD, DIC, RVT

7:40 – 7:48	<b>Venous Anatomic Variations And Their Importance</b> <i>Angela A. Kokkosis, MD, RPVI</i>
7:48 – 7:56	<b>Diagnostic Issues In Venous Disease</b> Nicos Labropoulos, BSc (Med), PhD, DIC, RVT
7:56 – 8:04	<b>Use Of CT And MR In Venous Disease</b> Neil M. Khilnani, MD
8:04 – 8:12	<b>Role Of IVUS</b> Antonios P. Gasparis, MD
8:12 – 8:20	How Do I Use Venography Mark H. Meissner, MD
8:20 - 8:28	<b>Evaluation Of Vein Compression Syndromes</b> <i>Thomas S. Maldonado, MD</i>
8:28 – 8:36	<b>Imaging For Interventions</b> <i>Steve Elias, MD</i>
8:36 – 8:44	<b>Venous Inflammation: Seeing The Microcosm</b> Joseph D. Raffetto, MD
8:44 - 9:00	Panel Discussion
9:00 - 9:20	Break – Visit Exhibits (2 <sup>nd</sup> Floor and 3 <sup>rd</sup> Floors)

#### SATURDAY SESSIONS 12-13

#### **SESSION 12**

THE CURRENT HEALTH CARE ENVIRONMENT EVOLVES: REIMBURSEMENT; IMPACT OF OBAMACARE (ACA), ACOs, ETC. AND THE IMPACT ON VASCULAR ULTRASOUND

Anne M. Jones, RN, BSN, RVT, RDMS Moderator: 9:20 - 9:29 Critical Issues For The Vascular Ultrasound Professional And Introduction To The Session Anne M. Jones, RN, BSN, RVT, RDMS **Super Panel Discussion** 9:29 - 10:00 *Moderator:* Anne M. Jones, RN, BSN, RVT, RDMS Panelists: Kelly R. Byrnes, BS, RVT Alan M. Dietzek, MD, RPVI Joseph P. Hughes, RVT, RVS Laurence Needleman, MD Sean P. Roddy, MD Robert M. Zwolak, MD, PhD

# SESSION 13 PRACTICE ENHANCEMENTS II

Moderators:	George L. Berdejo, BA, RVT Anne M. Jones, RN, BSN, RVT, RDMS
10:00 - 10:09	<b>A Common Sense Approach To Classification Of Arterial Doppler Waveforms</b> <i>R. Eugene Zierler, MD, RPVI</i>
10:10 - 10:19	<b>Implications Of Poor Patient Compliance After EVAR</b> <i>Keith D. Calligaro, MD</i>
10:20 - 10:29	Ultrasound Ergonomics: How To Save Your Neck And Back And Prolong Your Career: Vascular Sonographer Ergonomics Matthew P. Hernandez, BSc, DPT, CSCS
10:30 – 10:39	The New Paradigm For Understanding And Teaching Sonographic Principles Required By The Massive Post-Processing In Contemporary Sonographic Instruments Frederick Kremkau, PhD
10:40 - 10:49	<b>Update On Vein Center Accreditation</b> <i>Alan M. Dietzek, MD, RPVI</i>
10:49 - 11:00	Panel Discussion – Combined Sessions 10 and 11
11:00 – 11:10	Transition to Workshops (2 <sup>nd</sup> Floor)

#### SATURDAY SESSIONS 14-15

# **SESSION 14 WORKSHOP ROTATION 2**

11:10 - 12:10	
Murray Hill Suite	<b>Principles Tune-Up: How Sharp Are You - Part II</b> Frederick Kremkau, PhD
Gibson Suite	<b>Cerebrovascular Ultrasound</b> Ann Marie Kupinski, PhD, RVT Kelvin A. Portalatin, AA, RVT
Clinton Suite	<b>The Hemodialysis Access Examination</b> <i>Kelly R. Byrnes, BS, RVT</i> <i>Angelique Hernandez, AS, RVT</i>
Madison Suite	<b>The Renal Artery Evaluation</b> <i>Traci B. Fox, EdD, RDMS, RVT</i> <i>Diana L. Neuhardt, RVT, RPhS</i>
Nassau Suite East	<b>The Reflux Examination</b> <i>Diana L. Neuhardt, RVT, RPhS</i>
Nassau Suite West	<b>Physiologic Testing</b> Fernando Amador, RVT Steven J. Knight, BSc
12:10 - 12:30	Pick up Lunch in the South Corridor Exhibit Area (2nd Floor) and return to the Murray Hill Suites for the Luncheon Program.

# **SESSION 15**

LUNCHEON PROGRAM: PEARLS, PERILS, PITFALLS OF SOCIAL MEDIA, LIST SERVES AND THE INTERNET

Moderators:	George L. Berdejo, BA, RVT Kelvin Portalatin, AA, RVT	
12:30 - 12:40	<b>Facebook Administrator And User Perspective</b> <i>Brian Sapp, RVT, RPhS</i>	
12:40 – 12:50	<b>Twitter</b> Heather L. Gornik, MD	
12:50 – 1:00	<b>List Serves</b> Steven J. Knight, BSc	
1:00 – 1:10	<b>The Internet</b> Ann Marie Kupinski, PhD, RVT	
1:10 – 1:20	Panel Discussion	
1:20 – 1:30	Transition to Workshops (2 <sup>nd</sup> Floor)	

#### SATURDAY SESSIONS 16-17

# SESSION 16 WORKSHOP ROTATION 3

1:30 - 2:30	
Murray Hill	Interpretation Of Vascular Studies: Case Reviews Laurence Needleman, MD R. Eugene Zierler, MD, RPVI Richard C. Pennell, MD, RPVI
Gibson Suite	<b>Cerebrovascular Ultrasound</b> Ann Marie Kupinski, PhD, RVT Kelvin Portalatin, AA, RVT
Clinton Suite	<b>The Hemodialysis Access Examination</b> <i>Kelly R. Byrnes, BS, RVT</i> <i>Angelique Hernandez, AS, RVT</i>
Madison Suite	<b>The Renal Artery Evaluation</b> <i>Traci B. Fox, EdD, RDMS, RVT</i>
Nassau Suite East	<b>The Reflux Examination</b> <i>Diana L. Neuhardt, RVT, RPhS</i>
Nassau Suite West	<b>Physiologic Testing</b> Fernando Amador, RVT Steven J. Knight, BSc
2:30 - 2:40	Transition to Plenary Sessions (Murray Hill Suites, 2nd Floor)

# SESSION 17 HEMODIALYSIS ACCESS

Mode	erator:	Phillip J. Bendick, PhD, RVT
2:40	0 – 2:48	<b>Volume Flow Or Velocity: Which Predicts Access Failure Better?</b> <i>Clifford M. Sales, MD, MBA</i>
2:48	8 – 2:56	Routine Use Of Ultrasound To Avert Mechanical Complications During Placement Of Tunneled Dialysis Catheters For Hemodialysis: An Analysis Of 2805 Cases Anil P. Hingorani, MD
2:56	6 – 3:04	<b>Duplex Assessment Of Dialysis Access Maturation</b> <i>R. Eugene Zierler, MD, RPVI</i>
3:04	4 – 3:12	Access Site Cannulation Mapping: Why It's Important And How It Helps The Patient And The Dialysis Staff Ratna C. Singh, MD, RPVI
3:12	- 3:20	A Novel Technique For Duplex-Guided Office-Based Interventions For Patients With Acute Arteriovenous Fistula Occlusion Anil P. Hingorani, MD

#### SESSION 18 CASE-BASED LEARNING II: QUERIES, QUANDARIES AND QUAGMIRES IN VASCULAR IMAGING – INTERPRETATION CHALLENGES

Moderators: Phillip J. Bendick, PhD, RVT Natalie A. Marks, MD, RPVI, RVT

Lessons Learned from Challenging Cases and Missed Diagnoses. Benefit from this seasoned faculty and use their Quality Assurance experiences to help you become a better clinician. "Case Based Learning" with angiographic, CT and MR correlation. During this session, the practice of clinical vascular sonography and its relationship to patient management will be highlighted and stressed by experts.

3:20 - 3:30	<b>Cerebrovascular</b> Laurence Needleman, MD
3:30 – 3:40	<b>Lower Extremity Arterial</b> Ann Marie Kupinski, PhD, RVT
3:40 – 3:50	<b>Upper Extremity Venous And Hemodialysis Access</b> <i>Natalie A. Marks, MD, RPVI, RVT</i>
3:50 – 4:00	<b>Abdominal Vascular Imaging</b> <i>Leslie M. Scoutt, MD</i>
4:00 - 4:10	Panel Discussion – Combined Sessions 17 and 18

#### SESSION 19 CEREBROVASCULAR

Moderator:	Laurence Needleman, MD
4:10 – 4:20	<b>Update On The IAC Carotid Criteria Project: Is This Any Closer To Reality</b> <i>Heather L. Gornik, MD</i>
4:20 – 4:30	The "Other" Carotid Duplex Criteria – Common Carotid, External Carotid, And Vertebral R. Eugene Zierler, MD, RPVI
4:30 – 4:40	<b>Diagnosis Of ICA String Sign, Pseudo-Occlusion Or True Occlusion: Is Duplex</b> <b>Ultrasound Sufficient To Determine Accurately Patency And Operability</b> <i>Natalie A. Marks, MD, RPVI, RVT</i>
4:40 – 4:50	Vertebral Artery Pathologies Laurence Needleman, MD
4:50 – 5:00	<b>Complementary Role Of Transcranial Doppler In Patients With Carotid Artery Disease</b> Joseph P. Hughes, RVT, RVS
5:00 – 5:10	<b>Non-Atherosclerotic Pathology In The Carotid Arteries</b> <i>Leslie M. Scoutt, MD</i>

### PROGRAM SCHEDULE

#### SATURDAY SESSION 19

5:10 – 5:25	Panel Discussion
5:25 – 5:30	Closing Remarks
	George L. Berdejo, BA, RVT
	Natalie A. Marks, MD, RVT, RPVI
5:30	Raffle Drawing – You Must Be Present To Win
5:30	Symposium Ends

# FACULTY LISTING AND FACULTY DISCLOSURE STATEMENT



#### FACULTY LISTING

#### A

**Ali F. AbuRahma, MD** *Charleston, West Virginia* 

**Fernando Amador, RVT** *New York, New York* 

#### B

**Phillip J. Bendick, PhD, RVT, FSVU** *Royal Oak, Michigan* 

**George L. Berdejo, BA, RVT, FSVU** *White Plains, New York* 

Kelly R. Byrnes, BS, RVT, FSVU Louisville, Kentucky

#### С

**Keith D. Calligaro, MD** *Philadelphia, Pennsylvania* 

#### D

**Alan M. Dietzek, MD, RPVI, FACS** *Danbury, Connecticut* 

**Richard Dubin, AAS-DMS, RVT, RDMS** *Bronx, New York* 

#### E

**Steve Elias, MD** *Englewood, New Jersey* 

#### F

**Traci B. Fox, EdD, RDMS, RVT** *Philadelphia, Pennsylvania* 

#### G

Antonios P. Gasparis, MD Stony Brook, New York

**Heather L. Gornik, MD** *Cleveland, Ohio* 

#### Н

**Angelique Hernandez, AS, RVT** *Danbury, Connecticut* 

Matthew P. Hernandez, B.Sc, DPT, CSCS New York, New York

**Anil P. Hingorani, MD** *Brooklyn, New York* 

Joseph P. Hughes, RVT, RVS, FSVU Taunton, Massachusetts

#### J

**Anne M. Jones, RN, BSN, RVT, RDMS, FSVU, FSDMS** *Winston-Salem, North Carolina* 

#### Κ

Neil M. Khilnani, MD New York, New York

**Steven J. Knight, BSc** *Boston, Massachusetts* 

**Angela A. Kokkosis, MD, RPVI** Stony Brook, New York

**Frederick Kremkau, PhD** *Winston-Salem, North Carolina* 

**Ann Marie Kupinski, PhD, RVT, FSVU** *Albany, New York* 

#### FACULTY LISTING

L

Nicos Labropoulos, BSc (Med), PhD, DIC, RVT Stony Brook, New York

#### Μ

**Thomas S. Maldonado, MD** *New York, New York* 

Natalie A. Marks, MD, RPVI, RVT, FSVM Brooklyn, New York

Mark H. Meissner, MD Seattle, Washington

**Frank Miele, MSEE** *Forney, Texas* 

#### Ν

**Laurence Needleman, MD** *Philadelphia, Pennsylvania* 

Diana L. Neuhardt, RVT, RPhS, FSVU Phoenix, Arizona

#### 0

**Thomas F. O'Donnell, Jr., MD** *Boston, Massachusetts* 

Mark A. Oliver, MD, RPVI, RVT, FSVU Morristown, New Jersey

#### P

**Richard C. Pennell, MD, RPVI, FACS** *St. Louis, Missouri* 

**Kelvin Portalatin, AA, RVT** *Bronx, New York* 

#### R

Joseph D. Raffetto, MD West Roxbury, Massachusetts

Sareh Rajaee, MD, MPH Brooklyn, New York

Sean P. Roddy, MD Albany, New York

**Angela Rodriguez-Wong, MD, RPVI, RVT** *Bronx, New York* 

#### S

**Clifford M. Sales, MD, MBA, FACS** *Summit, New Jersey* 

Sergio X. Salles-Cunha, PhD, RVT, FSVU Jackson Beach, Florida

Brian Sapp, RVT, RPhS Newnan, Georgia

**Leslie M. Scoutt, MD** *New Haven, Connecticut* 

Ratna C. Singh, MD, RPVI White Plains, New York

William D. Suggs, MD White Plains, New York

#### W

**David M. Williams, MS** *Florence, South Carolina* 

### FACULTY LISTING

Ζ

#### **R. Eugene Zierler, MD, RPVI** *Seattle, Washington*

**Robert M. Zwolak, MD, PhD** *Lebanon, New Hampshire* 

#### ADVANCES IN VASCULAR IMAGING AND DIAGNOSIS (AVIDsymposium)

NOVEMBER 16-17, 2018

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## The following faculty have indicated that they may have a Relationship(s) which, in the context of their presentation(s) could be perceived as a potential conflict of interest:

#### **Steve Elias**

Company(ies): Medtronic Inc., Vascular Insights LLC, LeMaitre Inc., Hancock Jaffe Labs Relationship(s): Consulting **Heather L. Gornik** Company(ies): CVR Global Relationship(s): Research

#### Antonios P. Gasparis

Company(ies): Philips Relationship(s): Consulting, Teaching and Speaking

## The following faculty have indicated they have no Relationship(s) which, in the context of their presentation(s), could be perceived as a potential conflict of interest:

Ali F. AbuRahma	Ann Marie Kupinski	Brian Sapp		
Fernando Amador	Nicos Labropoulos	Nicos Labropoulos Leslie M. Scoutt		
Phillip J. Bendick	Thomas S. Maldonado	Ratna C. Singh		
George L. Berdejo	Natalie A. Marks	William D. Suggs		
Kelly R. Byrnes	Mark H. Meissner David M. Williams			
Keith D. Calligaro	Frank Miele R. Eugene Zierler			
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Richard Dubin	Diana L. Neuhardt			
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Angelique Hernandez	Mark A. Oliver			
Matthew P. Hernandez	Richard C. Pennell			
Anil P. Hingorani	Kelvin Portalatin			
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Advances in Vascular Imaging and Diagnosis

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on Management and Clinical Issues

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Symposium Co-Chair Ann Marie Kupinski, PhD, RVT, FSVU Nicos Labropoulos, BSc (Med), PhD, DIC, RVT Laurence Needleman, MD Frank J. Veith, MD

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