# Table of Contents

CME Information ......................................................... 2  
ASN Board & Committee Leaders ............................... 4  
Annual Meeting Objectives ......................................... 5  
Program At-a-Glance .................................................. 6  
Annual Meeting Faculty .............................................. 8  
Program Details .......................................................... 10  
Abstract Index ........................................................... 20  
Poster & Exhibitor Map ............................................... 25  
Disclosure Statements ................................................ 28  
Fellowship in the American Society of Neuroimaging (FASN) .... 30  
Award Winners .......................................................... 30
Target Audience. This activity is designed to meet the needs of neurologists, neurosurgeons, neuroradiologists and other neuroscientists.

Method Of Participation. Statements of credit will be awarded based on the participant’s attendance. A statement of credit will be available upon completion of an online evaluation/claimed credit form available at: akhcmec.com/akhcmec/pages/asn. Please claim your credit by March 5, 2018. If you have questions about this CME activity, please contact AKH inc. at goldman@akhcmec.com.

CME Credit Provided by AKH Inc., Advancing Knowledge in Healthcare

Physicians. This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of AKH Inc., Advancing Knowledge in Healthcare and The American Society of Neuroimaging. AKH Inc., Advancing Knowledge in Healthcare is accredited by the ACCME to provide continuing medical education for physicians. AKH Inc., Advancing Knowledge in Healthcare designates this live activity for a maximum of 26.5 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Physician Assistants. NCCPA accepts AMA PRA Category 1 Credit™ from organizations accredited by ACCME.

Planner And Reviewer Disclosures. The following planners and reviewers have no significant financial relationships with pharmaceutical or medical product manufacturers:

- Dorothy Caputo, MA, BSN, RN
- Director of Accreditations
- ASN Staff and Planners
- AKH Inc. Staff and Planners
Commercial Support. This activity is supported by an educational grant from John Wiley & Sons and Philips Healthcare.

Disclosures. It is the policy of AKH Inc. to ensure independence, balance, objectivity, scientific rigor, and integrity in all of its continuing education activities. The author must disclose to the participants any significant relationships with commercial interests whose products or devices may be mentioned in the activity or with the commercial supporter of this continuing education activity. Identified conflicts of interest are resolved by AKH prior to accreditation of the activity and may include any of or combination of the following: attestation to non-commercial content; notification of independent and certified CME/CE expectations; referral to National Author Initiative training; restriction of topic area or content; restriction to discussion of science only; amendment of content to eliminate discussion of device or technique; use of other author for discussion of recommendations; independent review against criteria ensuring evidence support recommendation; moderator review; and peer review.

Disclosure of Unlabeled Use and Investigational Product. This educational activity may include discussion of uses of agents that are investigational and/or unapproved by the FDA. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.

Disclaimer. This course is designed solely to provide the healthcare professional with information to assist in his/her practice and professional development and is not to be considered a diagnostic tool to replace professional advice or treatment. The course serves as a general guide to the healthcare professional, and therefore, cannot be considered as giving legal, nursing, medical, or other professional advice in specific cases. AKH Inc. specifically disclaim responsibility for any adverse consequences resulting directly or indirectly from information in the course, for undetected error, or through participant’s misunderstanding of the content.
ASN BOARD AND COMMITTEE LEADERS

Executive Committee:
David Liebeskind, MD, FAAN, FAVA, FANA
President
Andrej Alexandrov, MD, RVT
Vice-President
Joshua Klein, MD, PhD, FANA, FASN
Secretary
Ryan Hakimi, DO, MS
Treasurer
Michael Hutchinson, MD, PhD
Immediate Past President

Board of Directors:
John Bartlak, MD
Patrick Capone, MD, PhD, FASN
Emma Fields, APRN-CNP
Zsolt Garam, MD, RFVI
William Haege, MD
Gregory Kapinos, MD, MS, FASN
Venkatachalam Mangeshkumar, MD, FRCP (C), FAAN
Amir Mazhari, MD
Jennifer McGivney, MD
Verner Rorwe, MD
Aarti Sarwal, MD
Gabriella Szatmáry, MD, PhD

Board Advisors:
Madhureeta Achari, MD
John Chawlik, MD
Dara Jamieson, MD
Marc Malkoff, MD
Joseph Masdeu, MD, PhD
Lauda Mechtler, MD, FAAN, FASN
Robert Miletich, MD, PhD
Charles Tegeler, MD
Lawrence Wechsler, MD

Editor-in-Chief, Journal of Neuroradiology
Nahid Bakhsh, MD

Many thanks to the 2018 Program Committee for their work developing this year’s program.

Andrej Alexandrov, MD, RVT - Chair
Madhureeta Achari, MD
Allan Burke, MD
John Bartlak, MD
Emma Fields, APRN-CNP
Eduardo Gonzalez-Toldeo, MD
Ryan Hakimi, DO, MS
Michael Hutchinson, MD
Dara Jamieson, MD
Joshua Klein MD, PhD, FANA, FASN
David Liebeskind, MD, FAAN, FAVA, FANA
Paul Maertens, MD
Marc Malkoff, MD
Lauda Mechtler, MD, FAAN, FASN
Alexander Rozumovsky, PhD, FAHA
Gabriella Szatmáry, MD, PhD
Charles Tegeler, MD
Lawrence Wechsler, MD
ANNUAL MEETING OBJECTIVES

- Discuss latest advances in neuroimaging software and results of clinical trials
- Explain applied physics principles, interpretations and applications of Neurosonology
- Explain applied physics principles, interpretations and applications of MR/CT
- Assess case-based problem solving in neuroimaging
- Apply contemporary carotid Duplex and TCD protocols in common neurovascular disorders, i.e., stroke, extra- and intracranial stenosis, subarachnoid hemorrhage, trauma.
- Identify carotid Duplex and TCD utilization in critical care and during cardiovascular procedures
- Improve patient outcome due to utilization of carotid duplex TCD testing during different clinical pathways
- Identify pitfalls and benefits of the surgical versus neuroendovascular approaches.
- Select the most appropriate neuroendovascular approach on a case-by-case basis.
- Discuss neuroimaging modalities in the management of headaches.
- Describe transcranial Doppler ultrasound and its various neuroimaging applications.
- Describe the significance of neuroimaging in the management of patients presenting with CNS tumors.
- Identify various neuroimaging tools in the management of patients with demyelinating disease
- List some of the applications of functional imaging in stroke, epilepsy, disorders leading to dementia and neoplastic disease.
- Describe the most helpful imaging findings in functional imaging in stroke, epilepsy, disorders leading to dementia and neoplastic disease.
- Evaluate why functional imaging importantly supplements structural imaging in some areas of the practice of neuroimaging.
- Recognize normal brain vascular development and understand variations and pathology of brain vasculature using power Doppler
- Identify some selective vascular abnormalities commonly seen in specific cerebral dysgenesis
- Correlate power Doppler with other vascular modalities.
- Discuss how retinal morphology and the vascular network could be used to assess the conditions of brain function.
- Identify potential capabilities of a fast growing, state of the art optical imaging technique and its application to the field of neurology and neuroimaging.
- Examine possible changes of retinal morphology and microvasculature in complications of neurologic injury and central nervous system disorders, such as Alzheimer’s disease, Parkinson Disease, ALS, MAS and multiple sclerosis.
- Learn latest advances in neuroimaging software and results of clinical trials
- Learn applied physics principles, interpretations and applications of Neurosonology
- Learn applied physics principles, interpretations and applications of MR/CT
- Review case-based problem solving in neuroimaging
## PROGRAM AT-A-GLANCE

**SUNDAY, FEBRUARY 4, 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am – 5:30 pm</td>
<td>Registration</td>
<td>Texas Foyer</td>
</tr>
<tr>
<td>10:00 am – 1:30 pm</td>
<td>Neuroimaging in Clinical Practice 2018: From Training to Advanced Practice. Emma Fields, APRN-CNP and Ryan Hakimi, DO, MS</td>
<td>Texas I</td>
</tr>
<tr>
<td>1:30 – 2:30 pm</td>
<td>Lunch on Own</td>
<td>Texas I</td>
</tr>
<tr>
<td>2:30 – 4:30 pm</td>
<td>Neuroendovascular Wrangling 101. Andrei Alexandrov, MD, RVT</td>
<td>Texas I</td>
</tr>
<tr>
<td>4:30 – 5:30 pm</td>
<td>Keynote Lecture: The Business of Neuroimaging. Laszlo Mechtler, MD, FAAN, FASN</td>
<td>Texas I</td>
</tr>
<tr>
<td>5:30 – 7:30 pm</td>
<td>Super Bowl LII Reception with Exhibitors. Sponsored by DENT Neurological Institute</td>
<td>Texas II-IV</td>
</tr>
</tbody>
</table>

**MONDAY, FEBRUARY 5, 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 6:00 pm</td>
<td>Registration</td>
<td>Texas Foyer</td>
</tr>
<tr>
<td>7:00 – 8:00 am</td>
<td>Breakfast with Exhibitors</td>
<td>Texas II-IV</td>
</tr>
<tr>
<td>8:00 – 9:30 am</td>
<td>Ultrasound Physics. Sidney Edelman, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td>9:30 am – 12:30 pm</td>
<td>Current Topics in MR/CT Part I. John Bertelson, MD and Gabriella Szatmáry, MD, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td></td>
<td>Current Topics in Neurosonology Part I. Zsolt Garami, MD, RPVI</td>
<td>Texas V-VII</td>
</tr>
<tr>
<td>12:30 – 1:30 pm</td>
<td>Business Meeting and Awards Ceremony Luncheon</td>
<td>Texas I</td>
</tr>
<tr>
<td>1:30 – 2:00 pm</td>
<td>Sweet Tooth Fix with Exhibitors</td>
<td>Texas II-IV</td>
</tr>
<tr>
<td>2:00 – 4:00 pm</td>
<td>Current Topics in MR/CT Part I - Continued. John Bertelson, MD and Gabriella Szatmáry, MD, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td></td>
<td>Launching Neurovascular Sonographer (NVS) Credential. Alexander Razumovsky, PhD and Colleen Douville, RVT</td>
<td>Texas V-VII</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Location</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>4:00 – 6:00 pm</td>
<td>Poster Session and Guided Tour. Light Reception with Exhibitors</td>
<td>Texas II-IV</td>
</tr>
<tr>
<td>6:00 – 9:00 pm</td>
<td>MRI Hands-On Workshop: Objective Neuroradiology; Cortical Reconstruction and DTI Reconstruction. Eduardo Gonzalez-Toledo, MD, PhD</td>
<td>Texas VII</td>
</tr>
<tr>
<td></td>
<td>Neurosonology Hands-On Workshop. Andrei Alexandrov, MD, RVT and Zsolt Garami, MD, RPVI</td>
<td>Texas V-VI</td>
</tr>
</tbody>
</table>

**TUESDAY, FEBRUARY 6, 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 5:00 pm</td>
<td>Registration</td>
<td>Texas Foyer</td>
</tr>
<tr>
<td>8:00 – 9:00 am</td>
<td>Seeing the Brain Through the Eyes of Texas: What is Next for Neuroimaging Applications? Delia Cabrera DeBuc, PhD and Gabriella Szatmary, MD, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td>9:00 am – 12:30 pm</td>
<td>Current Topics in MR/CT Part II. John Bertelson, MD and Gabriella Szatmary, MD, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td></td>
<td>Current Topics in Neurosonology Part II. Alexander Razumovsky, PhD</td>
<td>Texas V-VII</td>
</tr>
<tr>
<td>10:30 – 10:45 am</td>
<td>Break</td>
<td>Texas Foyer</td>
</tr>
<tr>
<td>12:30 – 1:30 pm</td>
<td>Philips Lunch Presentation (non-CME)</td>
<td>Texas I</td>
</tr>
<tr>
<td>1:30 – 3:30 pm</td>
<td>Functional Imaging. Joseph Masdeu, MD, PhD</td>
<td>Texas I</td>
</tr>
<tr>
<td>4:00 – 5:00 pm</td>
<td>Normal Pressure Hydrocephalus. Mark Hamilton, MD and Venkatachalam Mangeshkumar, MD</td>
<td>Texas I</td>
</tr>
<tr>
<td>5:00 – 6:30 pm</td>
<td>Controversies in Neuroimaging. Dane Jameson, MD</td>
<td>Texas I</td>
</tr>
</tbody>
</table>
ASN 2018 ANNUAL MEETING FACULTY

Béla Ajtai, MD, PhD
Dent Neurologic Institute
Amherst, New York

Thomas Alexander, RVT
Southwestern Cerebral Circulatory Dynamics
Tyler, Texas

Andrei Alexandrov, MD, RVT
The University of Tennessee
Health Science Center
Memphis, Tennessee

Konstantin Balashov, MD, PhD
Rutgers-Robert Wood Johnson Medical School
Township, New Jersey

John Bennett, PhD
Wake Forest University
School of Medicine
Winston-Salem, North Carolina

John Bertelson, MD
University of Texas
Austin Dell Medical School
Austin, Texas

Delia Cabrera DeBuc, PhD
University of Miami
Miller School of Medicine
Miami, Florida

W. Andres Camargo, MD
Ascension
Austin, Texas

Esther Collado, RN, RVT
Cardiovascular Surgery Associates, Houston Methodist Hospital
DeBakey Heart and Vascular Center
Houston, Texas

Calli Leighann Cook, APRN-CNP
Emory University
Atlanta, Georgia

Sarah Dones, ACNP-BC
Greenville Health System
Greenville, South Carolina

Colleen Douville, RVT
Swedish Neuroscience Institute
Seattle, Washington

Sidney Edelman, PhD
ESP Ultrasound
The Woodlands, Texas

Elliott Frohman, MD, PhD
University of Texas at Austin
Dell Medical School
Austin, Texas

Teresa Frohman, PA-C
University of Texas at Austin
Dell Medical School
Austin, Texas

Zsolt Garami, MD, RPVI
Houston Methodist Hospital
Houston, Texas

Eduardo Gonzalez-Toledo, MD, PhD
Louisiana State University
Health Sciences Center
Shreveport, Louisiana

Gyanendra Kumar, MD
Mayo Clinic
Phoenix, Arizona

Ryan Hakimi, DO, MS
Greenville Health System
Greenville, South Carolina

Mark Hamilton, MD
St. John Providence
Warren, Michigan

R. Edward Hogan, MD
Washington University
Saint Louis, Missouri

Marge Hutchisson, RVT, RDCS
Intersocietal Accreditation Commission
Elliott City, Maryland

Dara Jamieson, MD
Weill Cornell Medical Center
New York, New York
Rakesh Khatri, MD
Texas Tech University Health Sciences Center
Lubbock, Texas

David Leake, MD
Indiana University Bloomington
Bloomington, Indiana

David Liebeskind, MD
UCLA Stroke Center Comprehensive Stroke Center
Los Angeles, California

Alan Lumsden, MD
Houston Methodist Hospital
Houston, Texas

Paul Maertens, MD
University of South Alabama
Mobile, Alabama

Venkatachalem Mangeshkumar, MD
Neurology and Stroke Associates
Littlc, Pennsylvania

Joseph Masdeu, MD, PhD
Houston Methodist Hospital
Houston, Texas

Alberto Maud, MD
Texas Tech University Health Sciences Center
Lubbock, Texas

Laszlo Mechtler, MD, FAAN, FASN
Dent Neurologic Institute
Amherst, New York

Robert Miletich, MD, PhD, FAAS
SUNY at Buffalo
Buffalo, New York

Jefferson Miley, MD
University of Texas – Austin Dell Medical School
Austin, Texas

Adnan Qureshi, MD
Zeenat Qureshi Stroke Institute
Saint Cloud, Minnesota

Anantha Ramana Vellipuram, MD
Texas Tech Univ. Health Sciences Ctr.
Lubbock, Texas

Alexander Razumovsky, PhD, FAHA
NeuroCare
Hunt Valley, Maryland

Brenda Rinsky, RVT, RDMS
Cedars-Sinai Medical Center
West Hills, California

Tatjana Rundek, MD, PhD
University of Miami
Health System
Miami, Florida

Gabriella Szatmáry, MD, PhD
Hattiesburg Clinic
Hattiesburg, Mississippi

Charles Tegeler, MD
Wake Forest University
School of Medicine
Winston-Salem, North Carolina

Steven To, RVT, RDMS
Houston Methodist Hospital
Houston, Texas

John Volpi, MD
Houston Methodist Hospital
Weill Cornell Medical College
Houston, Texas

Min Wang, MD, PhD
Clinical Pathology Associates
Austin, Texas

Steven Warach, MD
University of Texas
Austin Dell Medical School
Austin, Texas

Robin Whitehall, MD
Ascension
Austin, Texas

Mateo Ziu, MD, FAANS
University of Texas
Austin Dell Medical School
Austin, Texas
Sunday, February 4

Neuroimaging in Clinical Practice 2018: From Training to Advanced Practice

CME: 3.5
10:00 am – 1:30 pm, Texas I

Course Directors: Emma Fields, APRN-CNP and Ryan Hakimi, MS, DO

Course Description: This course is intended for providers in training as well as the advanced practice providers (Physician Assistants, Nurse Practitioners and Clinical Nurse Specialists) practicing in both outpatient and acute care settings to be knowledgeable in interpreting neuro-imaging for accurate diagnosis and timely interventions to ensure better patient outcomes.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:45 am</td>
<td>Neuroimaging Modalities in a Headache Patient - Calli Leighann Cook, APRN-CNP</td>
</tr>
<tr>
<td>10:45 - 11:20 am</td>
<td>Spine Imaging – Sarah Denes, ACNP-BC and Ryan Hakimi, MS, DO</td>
</tr>
<tr>
<td>11:20 - 11:45 am</td>
<td>Introduction to TCDs – Ryan Hakimi, MS, DO</td>
</tr>
<tr>
<td>11:45 am – 12:30 pm</td>
<td>Imaging Scoring in Hemorrhagic Stroke - Alberto Maud, MD</td>
</tr>
<tr>
<td>12:30 - 1:15 pm</td>
<td>Imaging Scoring in Ischemic Stroke - Anantha Ramana Vellipuram, MD</td>
</tr>
<tr>
<td>1:15 - 1:30 pm</td>
<td>Panel discussion</td>
</tr>
</tbody>
</table>

Modalities: MR, CT, TCD, and Angiography

Neuroendovascular Wrangling 101

CME: 2.0
2:30 – 4:30 pm, Texas I

Course Director: Andrei Alexandrov, MD, RVT

Course Description: Standard guidelines for stroke treatment currently recommend clot removal only within six hours of stroke onset. But a milestone study with results published in the New England Journal of Medicine shows that clot removal up to 24 hours after stroke led to significantly reduced disability for properly selected patients. This study is known as the DAWN trial. In addition, DEFUSE 3 trial was presented at ISC 2018. This session will discuss the use of multimodal neuroimaging to select patients at an extended time window.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 – 2:55 pm</td>
<td>The DAWN of the New Era – Speaker TBA</td>
</tr>
<tr>
<td>2:55 – 4:30 pm</td>
<td>Imaging of Acute Stroke Panel – Andrei Alexandrov, MD, RVT, David Liebeskind, MD, and Steve Warach, MD</td>
</tr>
</tbody>
</table>

Modalities: CT, CTA, CTP; multimodal MRI
Keynote Lecture: The Business of Neuroimaging
CME: 1.0
4:30 – 5:30 pm, Texas I
Keynote Speaker: Laszlo Mechtler, MD, FAAN, FASN
Course Description: Neuroimaging is essential for all Neurologists; it is of the utmost importance in the treatment of our patient population. Without the overall knowledge of Neuroimaging, we would be dependent on the knowledge of radiologists, who do not have the expertise that Neurologists can depend on. In addition, the burn out rate of Neurologists is one of the highest among specialists. A greater stake in the use of Neuroimaging among Neurologists would not only improve recruitment in residency programs, but also would improve the fiscal health of Neurologists. This discussion will offer Neurologists a different perspective on how Neuroimaging can change the way Neurology is perceived and practiced.
Modalities: MR, CT, and Ultrasound

Monday, February 5
Ultrasound Physics
CME: 1.5
8:00 – 9:30 am, Texas I
Featured Speaker: Sidney Edelman, PhD
Course Description: The physical principles that form the basis for ultrasound imaging and Doppler evaluations will be presented in simple everyday language. It is focused on the needs of physicians who rely on these technologies in the clinical arena. Physical principles related to image creation and Doppler evaluation of hemodynamics will be presented. This lecture will form the basis for understanding the application and limitations of clinical ultrasoundography, including the rationale for transducer selection, image optimization, technical limitations and pitfalls. We will contrast and compare the competing requirements and goals of imaging and pulsed wave, continuous wave and Color Doppler.
Modalities: Ultrasound
Current Topics in MR/CT Part I

CME: 3.0
9:30 am – 12:30 pm, Texas I

Course Directors: John Bertelson, MD and Gabriella Szatmáry, MD, PhD

Course Description: Comprehensive review course that includes neuroimaging tools necessary to diagnose and manage neurological patients affected by various disorders.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 - 10:15 am</td>
<td>Approach to Neuroimaging - Béla Ajtai, MD</td>
</tr>
<tr>
<td>10:20 - 11:00 am</td>
<td>Vascular Anomalies - Paul Maerlens, MD</td>
</tr>
<tr>
<td>11:15 am - 12:00 pm</td>
<td>Intracranial Infections Radiologic and Pathology Correlation - David Leake, MD and Min Wang, MD, PhD</td>
</tr>
<tr>
<td>12:00 - 12:10 pm</td>
<td>Resident Cases - Andres Camargo, MD</td>
</tr>
<tr>
<td>12:10 - 12:20 pm</td>
<td>Resident Cases - Robin Whitehall, MD</td>
</tr>
<tr>
<td>12:20 - 12:30 pm</td>
<td>Q &amp; A</td>
</tr>
</tbody>
</table>

Modalities: The course focuses on magnetic resonance (MR) imaging (MRI) and related various modalities such as MR angiography and venography, functional MR-based imaging techniques like diffusion tensor imaging, MR spectroscopy, and functional MRI. In addition, it will include newest CT-based techniques, such as CT angiography.

Current Topics in Neurosonology Part I

CME: 3.0
9:30 am – 12:30 pm, Texas V-VII

Course Director: Zsolt Garami, MD, RPVI

Course Description: This course will highlight basics of Transcranial Doppler (TCD) and carotid ultrasound physics as well as techniques of examinations, their clinical applications, and interpretations. Part I is for individuals seeking basic knowledge of Neurosonology.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 - 9:20 am</td>
<td>Waveform Recognition - Andrei Alexandrov, MD, RVT</td>
</tr>
<tr>
<td>9:20 - 9:40 am</td>
<td>Transcranial Doppler Protocol - Steven To, RVT, RDMS</td>
</tr>
<tr>
<td>9:40 - 10:00 am</td>
<td>Subclavian vs. Vertebral Steal - Zsolt Garami, MD, RPVI</td>
</tr>
<tr>
<td>10:00 - 10:30 am</td>
<td>Embolus Detection and Monitoring - John Volpi, MD</td>
</tr>
<tr>
<td>10:30 - 10:50 am</td>
<td>PFO - TCD Bubble Test - Zsolt Garami, MD, RPVI</td>
</tr>
<tr>
<td>11:00 - 11:20 am</td>
<td>Intraoperative Monitoring - Alan Lumsden, MD</td>
</tr>
<tr>
<td>11:20 - 11:40 am</td>
<td>Carotid Protocol - Esther Collado, RN, RVT</td>
</tr>
<tr>
<td>11:40 - 11:50 am</td>
<td>Carotid Plaque Characterization and IMT - Tatjana Rundek, MD, PhD</td>
</tr>
<tr>
<td>11:50 am - 12:00 pm</td>
<td>Interpretation (Grading Stenosis) - Andrei Alexandrov, MD, RVT</td>
</tr>
<tr>
<td>12:00 - 12:15 pm</td>
<td>IAC Requirements for Reports - Margie Hutchinson, RVT, RDMS</td>
</tr>
<tr>
<td>12:15 - 12:30 pm</td>
<td>Q &amp; A – Hard Rock Cases</td>
</tr>
</tbody>
</table>

Modalities: Ultrasound
Business Meeting and Awards Ceremony Luncheon
CME: None
12:30 – 2:00 pm, Texas I
Schedule:
12:30 - 1:00 pm  ASN Business Meeting
1:00 - 1:30 pm  Awards Ceremony
1:30 - 2:00 pm  Dessert with Exhibitors

Current Topics in MR/CT Part I - Continued
CME: 2.0
2:00 – 4:00 pm, Texas I
Course Directors: John Bertelson, MD and Gabriella Szatmáry, MD, PhD
Course Description: Comprehensive review course that includes neuroimaging tools necessary to diagnose and manage neurological patients affected by various disorders.
Individual Speaker Schedule:
2:00 - 2:35 pm  Neuroimaging of Demyelinating Disorders in Clinical Practice - Elliot Frohman, MD, PhD
2:40 - 3:15 pm  MRI in Neuromyelitis Optica Spectrum Disorders - Konstantin Balashov, MD, PhD
3:20 - 3:55 pm  Demyelinating Disorders: Clinical Syndromes - Teresa Frohman, PA-C
3:55 - 4:00 pm  Q & A
Modalities: The Course is focused on magnetic resonance (MR) imaging (MRI) and related various modalities such as MR angiography and venography, functional MR-based imaging techniques like diffusion tensor imaging, MR spectroscopy, and functional MRI. In addition it will include newest CT-based techniques, such as CT angiography.
Launching Neurovascular Sonographer (NVS) Credential
CME: 2.0
2:00 – 4:00 pm, Texas V-VII
Course Director: Alexander Razumovsky, PhD

Course Description: The American Society of Neuroradiography (ASN) was founded in 1977 and is an international, professional organization representing neuroradiologists, neurosurgeons, neuroradiologists and other neuroscientists dedicated to the advancement of techniques used to evaluate the nervous system. Many of the members are involved in the performance or interpretation of neurovascular testing using carotid ultrasound and transcranial Doppler ultrasound (TCD), transcranial color coded duplex (TCCD). The ASN has offered a physician certification examination in neurosonology since 1978. However, there is a need within the ultrasound community for a specialty examination for the neurovascular sonographer (NVS). We also believe that the ASN is in the best position to develop and administer such an examination. During last decade the ASN has been working to develop and introduce a specialty examination for technologists who are performing only TCD, TCCD and/or carotid duplex studies. The ASN examination in NVS is designed to assess a technologist’s ability to apply knowledge, concepts, principles of neurovascular ultrasound and analytical skills in tasks performed that constitute the basis of safe and effective patient care. This session is designed to describe background history and requirements for this new NVS credential.

Individual Speaker Schedule:
2:00 - 2:05 pm  Opening Remarks - Colleen Douville, BS, RVT
2:05 - 2:25 pm  Practicing Neurovascular Ultrasound: History and Personal Journey - Thomas Alexander, RVT
2:25 - 2:45 pm  Building a Neurovascular Ultrasound Laboratory - Brenda Rinsky, RVT, RDMS
2:45 - 3:05 pm  Existing Pathways to Credentialing in Vascular Ultrasound - Andrei Alexandrov, MD, RVT
3:05 - 3:25 pm  Neurovascular Sonographer Examination - Alexander Razumovsky, PhD
3:25 - 4:00 pm  Mock Review - John Bennett, PhD and Faculty

Modalities:
Ultrasound

Poster Session and Guided Poster Tour
Light Reception with Exhibitors
4:00 – 6:00 pm, Texas II-IV

This year we will have a guided poster tour. The Poster Tour will start at 4:00 and last for about an hour leaving the last hour of the session for casual discussions and time with exhibitors. Poster presenters will be standing by posters to give a 3 minute presentation with 5 minutes after for discussion.

Poster Tour Moderators:
Andrei Alexandrov, MD, RVT
John Bertelson, MD
Ryan Hakimi, DO, MS
Dara Jamieson, MD
David Liebeskind, MD
Paul Maertens, MD
Gabriella Szatmáry, MD, PhD
MRI Hands-On Workshop: Objective Neuroradiology: Cortical Reconstruction and DTI Reconstruction
CME: 3.0
6:00 – 9:00 pm, Texas VII
Workshop Director: Eduardo Gonzalez-Toledo, MD, PhD
Workshop Description: This workshop allows the participants to understand diffusion tensor imaging and to calculate themselves in their own computers.
Modalities: MR

Neurosonology Hands-On Workshop
CME: 3.0
6:00 – 9:00 pm, Texas V-VI
Workshop Directors: Andrei Alexandrov, MD, RVT and Zsolt Garami, MD, RPVI
Workshop Faculty: John Bennett, PhD, Alexander Razumovsky, PhD, FAMA, Tatjana Rundek, MD, PhD, Charles Tegeler MD, Steven To, RVT, ROMS
Workshop Description: This workshop will provide structured hands-on and question and answer sessions in carotid/vertebral duplex and specific/ transcranial Doppler techniques complete testing, emboli detection, right-to-left shunt detection and assessment of vasomotor reactivity. Both the beginner and experienced users are encouraged to attend. The workshop will also provide an opportunity to try the latest equipment, to meet experts, and to discuss various aspects of Neurosonology in small groups. The workshop is designed to meet the need for basic and advanced knowledge of insonation techniques, technological advances, and practical aspects of cerebrovascular testing.
Modalities: Ultrasound
Seeing the Brain through the Eyes of Texas: What is Next for Neuroimaging Applications?

CME: 1.0
8:00 – 9:00 am, Texas I

Course Directors: Delia Cabrera DeBuc, PhD and Gabriella Szatmáry, MD, PhD

Course Description: Increasing evidence suggests that the conditions of retinal morphology and microvascular network are indicators to a variety of cerebrovascular, neurodegenerative, psychiatric, and developmental diseases. Thus, noninvasive visualization of the human retinal microcirculation and morphology offers an exceptional opportunity for the investigation of not only the retinal but also cerebral microvasculature. In this course, we will show how the conditions of the retinal microvessels could be used to assess the conditions of brain microvessels because of the microvascular network of the retina and brain share, in many aspects, standard features in development, morphology, function, and pathophysiology. Recent techniques and imaging modalities, such as optical coherence tomography (OCT) angiography, allow more precise visualization of various layers of the retina and its microcirculation, providing a "microscope" to brain microvessels. In particular, the course will introduce a recent application of OCT angiography for the detection of elevated intracranial pressure in children with craniosynostosis or tumor. The course will also provide an overview of the OCT angiography technique and the potential role of retinal microvessels and morphology in the risk identification of cerebrovascular and neurodegenerative diseases. The association between vision problems and cerebrovascular and neurodegenerative diseases, as well as the possible role of retinal imaging biomarkers in cerebrovascular and neurodegenerative screening, their potentials, and limitations, will also be discussed.

Individual Speaker Schedule:

8:00 – 8:10 am
Understanding How Retinal Morphology and the Vascular Network Could Be Used to Assess the Conditions of Brain Function - Gabriella Szatmáry, MD, PhD

8:11 – 8:21 am
Potential Capabilities of a Fast Growing, State of the Art Optical Imaging Technique and its Application to the Field of Neurology and Neuroimaging - Delia Cabrera DeBuc, PhD

8:22 – 8:29 am
The Eye as a Window Into The Brain: Applications to Neurodegeneration - Elliot Frohman, MD, PhD and Teresa Frohman, PA-C

8:29 – 8:36 am
Clinical Applications of Quantitative Ophthalmoscopes - Elliot Frohman, MD, PhD and Teresa Frohman, PA-C

8:36 – 8:43 am
Alterations in Retinal Imaging: Correspondence with Objective Measures of Pathophysiology - Elliot Frohman, MD, PhD and Teresa Frohman, PA-C

8:43 – 8:50 am
Visual System Structure with Function Bridging ‘The Great Divide’ - Elliot Frohman, MD, PhD and Teresa Frohman, PA-C

Modalities: Angiography (Optical Coherence Tomography)
"Earn Your Spurs" in Vascular Developmental Defects
CME: 1.0
8:00 – 9:00 am, Texas V-VII
Course Director: Paul Maertens, MD
Course Description: Vascular imaging with power Doppler allows the early, noninvasive detection of vascular anomalies in patients with neurocutaneous disorders (ataxia telangiectasia, PHACE syndrome), brain dysgenesis (encephalocele, holoprosencephaly, septo-optic dysplasia, Dandy Walker) and occasionally in patients without obvious brain malformation. Some are symptomatic. In others, knowledge of vascular supply prior to, during and after intervention helps guiding management. Arterial malformations may include agenesis/hypogenesis, fenestration, abnormal origin, azygous ACA or persistence of primitive vessels. Venous malformations include persistence of falcine sinus, absence of vein of Galen, vein of Galen malformation and venous angioma. Telangiectasia may occur. MRA, CTA and catheter angiography confirm our finding when indicated and may guide further management.

Individual Speaker Schedule:
8:00 – 8:05 am Welcome and Introduction - John Bertelson, MD
8:05 – 8:30 am Vascular System in Dysgenesis - Paul Maertens, MD
8:30 – 8:50 am Interactive Case Studies - Paul Maertens, MD
8:50 - 9:00 am Q & A

Modalities: TCD, CT angiography, MRA, and MRV

Current Topics in MR/CT Part II
CME: 3.25
9:00 – 12:30 pm, Texas I
Course Directors: John Bertelson, MD and Gabriella Szatmáry, MD, PHD
Course Description: Comprehensive review course that includes neuroimaging tools necessary to diagnose and manage neurological patients afflicted by various disorders.

Individual Speaker Schedule:
9:00 – 9:40 am Image-Guided Acute Stroke Therapy - Steven Warach, MD
9:45 – 10:25 am Endovascular – Jefffferson Miley, MD
10:30 – 10:45 am Break
10:45 – 11:30 am Spine Tumors - Mateo Ziu, MD, FAANS
11:35 am – 12:25 pm Brain Tumors - Laszlo Medffler, MD, FAAN, FASN
12:25 - 12:30 pm Q & A

Modalities: The Course is focused on magnetic resonance (MR) imaging (MRI) and related various modalities such as MR angiography and venography, functional MR-based imaging techniques like diffusion tensor imaging, MR spectroscopy, and functional MRIs. In addition it will include newest CT-based techniques, such as CT angiography.
Current Topics in Neurosonology Part II
CME: 3.25
9:00 am – 12:30 pm, Texas V-VII
Course Director: Alexander Razumovsky, PhD

Course Description: Course objective will be to provide a comprehensive update on carotid duplex TCD clinical applications for patients with CVD and in the critical care setting, including acute ischemic stroke, subarachnoid hemorrhage and traumatic brain injury. New promising TCD clinical utilization for patients after concussion will be presented. An internationally renowned faculty of leaders in field of Neurosonology will be assembled to provide the latest in retrospective areas of expertise. This will be accomplished via didactic lectures but will be enhanced by ample time for faculty panel discussions to provide interaction with the audience.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 9:35 am</td>
<td>Carotid Duplex Ultrasound: Basics and Clinical Applications</td>
<td>Charles Tegeler, MD</td>
</tr>
<tr>
<td>9:35 – 10:15 am</td>
<td>Transcranial Doppler Ultrasound and Its Applications for Patients with CVD and Acute Cerebral Ischemia</td>
<td>Andrei Alexandrov, MD, RVT</td>
</tr>
<tr>
<td>10:30 – 10:45 am</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:45 – 11:10 am</td>
<td>TCD for Surveillance of Cerebral Vasospasm in Aneurysmal Hemorrhage</td>
<td>Gyanendra Kumar, MD</td>
</tr>
<tr>
<td>11:10 – 11:40 am</td>
<td>TCD: Traumatic Brain Injury: Is There Role for TCD?</td>
<td>Alex Razumovsky, PhD</td>
</tr>
<tr>
<td>11:40 am – 12:15 pm</td>
<td>New Frontiers for TCD in the Neuro-ICU</td>
<td>Ryan Hakimi, MS, DO</td>
</tr>
<tr>
<td>12:25 – 12:30 pm</td>
<td>Q &amp; A</td>
<td></td>
</tr>
</tbody>
</table>

Modalities: Carotid Ultrasound, Transcranial Doppler Ultrasound, and Neuroimaging

Functional Imaging
CME: 2.0
1:30 – 3:30 pm, Texas I
Course Director: Joseph Masdeu, MD

Course Description: Functional imaging is becoming essential in many areas of neurology, particularly in epilepsy and neurodegenerative diseases, but also in stroke, neoplastic disease and many other areas in the practice of neurology. This symposium aims at reviewing some of the current uses of functional imaging with an emphasis on molecular imaging. The approach is integrative and will be based on the type of disease being discussed, namely: (1) Stroke; (2) Epilepsy; (3) Disorders leading to dementia; and (4) Neoplastic disease.

Individual Speaker Schedule:

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 – 2:00 pm</td>
<td>Stroke</td>
<td>Steven Warach, MD</td>
</tr>
<tr>
<td>2:00 – 2:30 pm</td>
<td>Epilepsy</td>
<td>R. Edward Hogan, MD</td>
</tr>
<tr>
<td>2:30 – 3:00 pm</td>
<td>Disorders Leading to Dementia</td>
<td>Joseph Masdeu, MD, PhD</td>
</tr>
<tr>
<td>3:00 – 3:30 pm</td>
<td>Neoplastic Disease</td>
<td>Robert Mastrich, MD, PhD, FAANs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Modalities: MR, CT, PET, SPECT
Normal Pressure Hydrocephalus
course directors: Mark Hamilton, MD, and Venkatachalem Mangeshkumar, MD
Course Description: Idiopathic normal pressure hydrocephalus (iNPH) is a neurological disorder of the elderly characterized by gait impairment, urinary urgency or incontinence, and dementia in association with enlargement of the cerebral ventricles secondary to impaired circulation of cerebrospinal fluid. iNPH is a common disorder of the elderly with an estimated prevalence of 2.5/100,000 for those over the age of 65 years. The clinical symptoms overlap with other disorders of the elderly patient and the diagnosis is often not considered. The goal of this session is to provide an approach to the diagnosis and management of patients with iNPH, with particular emphasis around a framework that helps the reader to identify good candidates for surgery. The diagnostic imaging aspects associated with the diagnosis and treatment will be emphasized.
Individual Speaker Schedule:
4:00-4:30 pm Is it Normal Pressure Hydrocephalus (iNPH)? Approaches and Challenges to Diagnosis and Treatment - Mark Hamilton, MD, CM, FRCSC
4:30-4:50 pm Diagnostic Imaging Features Associated with Normal Pressure Hydrocephalus - Venkatachalem Mangeshkumar, MD
4:50-5:00 pm Q & A
Modalities: MRI, CT, Minor Ultrasound, PET, and Neurovascular Ultrasound.

Controversies in Neuroimaging
course director: Dara Jamieson, MD
Course Description: Leaders in their field have picked controversial topics and they will express ideas that are debatable. After a focused presentation by the expert, the audience can challenge or applaud the use of new neuroimaging techniques to advance neurological diagnosis and treatment.
Individual Speaker Schedule:
5:00 - 5:20 pm Perfusion Imaging in Acute Ischemic Stroke: Key to Treatment or A Time Sink? - David Leibeskind, MD
5:20 - 5:40 pm Preoperative Cerebral Stenosis: How Much Imaging is Enough? - Rakesh Khurana, MD
5:40 - 6:00 pm Diagnosis & Treatment of Trigeminal Neuralgia: Moving Beyond Medications - Adnan Qureshi, MD
6:00 - 6:20 pm Tiny Bubbles: Killing the Clot, Showing the Shunt - Andrei Alexandrov, MD, RVT
Modalities: MR/CT, Ultrasound
ABSTRACT INDEX

Poster 2: Pre-existing White Matter Disease Burden Impacts Cognitive Outcome after Inpatient Rehabilitation for Ischemic Stroke
Muhib Khan, Heather Heiser, Laurel Packard
Spectrum Health, Grand Rapids, USA.

Mary Beth Farrell, Corey Mabry, Nancy Merrill, Mary Lally
Intersocietal Accreditation Commission, Ellicott City, USA.
Presenter: Marge Hutchinson.

Poster 4: Improved Quality at Intersocietal Accreditation Commission (IAC) Carotid Artery Stenting Facilities
Mary Beth Farrell, Nancy Merrill, Mary Lally, Barry Katzner, David Sacks
Intersocietal Accreditation Commission, Ellicott City, USA.
Presenter: Marge Hutchinson.

Poster 5: Benedikt's Mimic Syndrome in the Thalamus Infarction
Reza Bavarsad Shahripour, Ali Kerro, Payam Moein, Andrei Alexandrov
Univ. of Tennessee, Memphis, USA.

Poster 6: Utility of Neuromuscular Ultrasound in the Evaluation of Peripheral Nerve Sheath Tumors in Neurofibromatosis Type 1
Elina Zakin, Susan Shin, Jesse Weinberger
Icahn School of Medicine at Mount Sinai, New York, USA.

Poster 7: Neurosonographic Diagnosis of Lückenschädel and Lemon Sign in Neonates
Tanaporn Wilaisakditipakorn, Paul Maertens
Univ. of South Alabama, Mobile, USA.

Poster 8: The Significance of Contrast Density of the Computed Tomography-Angiographic Spot Sign: The Spot Sign Ratio
Omar Hussein, Khalid Sawalha, Ahmed Abd Elazim
The Ohio State Univ. Wexner Medical Center, Columbus, OH, USA.

Poster 9: Remote Transcranial Doppler Monitoring for Carotid Interventions: First Demonstration of Feasibility and Efficacy
Daniel Santin, Zsolt Garami, Alan Lummis
Cardiovascular Surgery Department, Houston Methodist DeBakey Heart and Vascular Center, Houston (Texas), USA.

Poster 10: Intracranial Perineural Cyst of the Oculomotor Nerve
Barak Mitty, Lasido Michtler, Yatnesh Harahar
Dent Neurologic Inst., Buffalo, USA.

Poster 11: Administration of IV Alteplase in a Patient with History of Secured Aneurysmal Subarachnoid Hemorrhage
Mohammad Hajighasemi-Ossareh, Peter Tsou, Robert Burt, Geoffrey Konye, Sebina Buli
Univ. of Southern California/Keck School of Medicine, Los Angeles, USA.

Poster 12: Vanishing White Matter with Progressive Cavitation: A Unique Neuroimaging Pattern of Neurofibromatosis Type 1
Tanaporn Wilaisakditipakorn, Paul Maertens
Univ. of South Alabama, Mobile, USA.
ABSTRACT INDEX

Poster 13: The Breath Hold Acceleration Index (BHAI): A New Index to Evaluate Cerebrovascular Reactivity Using a Breath Hold Maneuver
Mohammed Alwatban1, Edward Trompeter, Abdulkarim Abiteboul, Daniel Murmann, Greg Badger1, Univ. of Nebraska-Lincoln, Lincoln, USA.
1Children’s Hospital & Medical Center, Omaha, USA.
2Qassim Univ., Buraidah, Saudi Arabia.
3Univ. of Nebraska Medical Center, Omaha, USA.

Poster 14: Role of Thin-Sliced Reformatted CT Imaging for Acute Ischemic Stroke Patients, Do We Need CT Angiography Before Deciding for Acute Neurointervention
1JFK Stroke & Neurovascular Center, Seton Hall Hackensack Meridian School of Medicine, Edison, USA.

Poster 15: Results of Transcranial Doppler Studies Post-Code Stroke Embolectomy
East Texas Medical Center Neurological Inst., Tyler, TX, USA.

Poster 16: Multi-Focal Recurrent Strokes in Cerebral Vasculitis and Intravascular Large B-cell Lymphoma of Central Nervous System, Mimicking Similar Clinical and Radiologic Findings: Case Series
Lydia Vaz-Prado, Alejandro Magadan, Ty Shang, Mark Johnson, Antonietta Rueda.
UT Southwestern Medical Center, Dallas, USA.

Poster 17: Safety and Clinical Outcomes after Transverse Venous Sinus Stenting for Treatment of Idiopathic Intracranial Hypertension: Single-Center Experience
Ashish Kulhari, Siddhart Mehta, Rebekah Amarni, Spozhmy Panezai, Jawad F. Kirmani.
1JFK Stroke & Neurovascular Center, Seton Hall Hackensack Meridian School of Medicine, Edison, USA.

Poster 18: Distinct Purposes of Perfusion Imaging in the Management of Delayed Cerebral Ischemia after Subarachnoid Hemorrhage
Siyu Chu, Gregory Kapinos.
NYU Lutheran Medical Center, Brooklyn, NY, USA.

Poster 19: Carotid Ultrasound with Concurrent Transcranial Doppler in Risk Stratification of Carotid Artery Stenosis: A Case Report
Andrew Lockey, Adrian Fawcett, Dawn Wylie, Demetris Sfants.
1Univ. of Calgary, Calgary, Canada.
2Trium Health Centre, Mississauga, Canada.
3Hamilton Health Sciences, Hamilton, Canada.
4McMaster Univ., Hamilton, Canada.

Poster 20: Lateral Projection is Superior to Oblique Groin Projection in Femoral Angiography for Identification of Arteriotomy Site
Vikram Jadhav, Mansoor Khand, Muhammad Fareed Suri.
1CentraCare Health, St. Cloud, MN, USA.
2Mercy Health, Rockford, IL, USA.
3Rockford Health System, Rockford, IL, USA.

Poster 21: Periictal Changes in Neuroimaging During Seizure May Mimic Stroke, a Case Study
Adrian Burgos, Kristie Wang, Adnan Bulic, Benjamin Emanueli, May Kim Tenner, Sabrina Bulic.
1Univ. of Southern California, Los Angeles, USA.
2Pasadena City College, Pasadena, USA.
Poster 22: Rhombencephalitis (Brain Stem Encephalitis) Due to Listeria Monocytogenes
Poornachand Veerapaneni, Pradeep Kumbham, Rohan Samant, Sanjeeva Reddy Ozeddu, Karthika Veerapaneni, Krishna Nallaballi
UAMS, Little Rock, USA.

Poster 23: Variability of Extracranial Flow Velocity Measurements in Sonographic Vasospasm Screening
Cara Dohm-Frank, Brenda Rinsky, Konrad Schlick
Cedars-Sinai Medical Ctr, Los Angeles, USA.

Poster 24: fNCI: Assessing Concussion Biomarkers to Treat Dysregulation of NVC in PCS
Alina K. Fong1,2, Mark E. Strong1,3, Mark D. Allen1,2
1Cognitive FX, Provo, USA.
2Utah Valley Regional Med Ctr, Provo, USA.
3Brigham Young Univ., Provo, USA. *NOTUS Neuropsychological Imaging, Orem, USA.
Presenter: Parker Murray

Poster 25: Potential Role of MRI in Motor Neuron Disease Diagnosis; Two Case Reports
Khalid Sawalha, Omar Hussein, Chad Hoyle
The Ohio State Univ. Wexner Medical Center, Columbus, USA.

Poster 26: Not all that is Bright is an Abscess and not all that Enhances is a Lymphoma! A rare case of Double Biopsy Proven Acute Hemorrhagic Leukencephalitis (AHEM)
Robin Wood1, Haris Kamal2
1Univ. of Texas McGovern Medical School, Houston, USA.
2Harbor-UCLA Medical Center, Torrance, USA.

Poster 27: Fetal MRI, MRA, and Ultrasound of a Large Facial Hemangioma
Peter Kallas
Mayo Clinic, Rochester, USA.

Poster 28: Tarlov Cysts: The Underlying Etiology of Persistent Genital Arousal Syndrome
Deb Prasad1, Rollin V. Desai2
1Mantrala Medical center, Bronx, USA.
2Yale School of Medicine, New Haven, USA.

Poster 29: Lumbar Puncture as a Treatment for IVH in Patients with a Good Neurological Examination
Mahnoor Allahyar, Ryan Hainan
Clemson Univ, Clemson, USA. *Univ. of So. Carolina-Greenelee Health Syst., USA.

Poster 30: Flat-Panel Cone Beam Computed Tomography is a NOT a Reliable Predictor for Early Changes in Ischemic Stroke Patients with Large Vessel Occlusions (LVO)
Amadeo Sugr1, Aseel Khalaf, Siddhart Mehta, Bruna D’Pinho, Renu Patel, Sporthry Panesar, Jawaid F. Kirmani
JPJ Stroke & Neurovascular Center, Seton Hall Hackensack Meridian School of Medicine, Edesoon, USA.

Poster 31: Dysphagia and Tongue Deviation: A Rare Case of Collette-Sicard Syndrome After Blunt Head Trauma
Eric Tanzi1, Biju Mehta
Montefiore-UCLA Medical Center, Torrance, USA.

Poster 32: High grade critical Basilar Stenosis in a Young Female with History of Systemic Lupus Erythematosus and Basilar Migraine.
Rick Mayer1, Anar Anand2, Amir Mazhari2, Laszlo Metchler1
1Dent Neurological Inst., Amherst, USA.
2Dent Neurological Inst.

Poster 33: Recurrence of Pituitary Germinoma with Drop Metastasis
Olivia Tong, Mark Milstein
Montefiore Medical Center, Bronx, USA.

Poster 34: The Road Less Traveled: A Bizarre Trajectory of Intracardiac Thrombi in a Patient with Bilateral Common and Internal Carotid Artery Occlusion
Michael C.Y. Juan1, Arshdeep Sidhu2, Sonia S. Fernandez3
1St. Mary Mercy Hospital, Livonia, USA.
2Providence-Providence Park Hospital, Southfield, USA.
Poster 35: Case of Postpartum Bifrontal Intracerebral Hemorrhage: Where’s the Thrombus?
Kristie Wang, Charlotte Zhong, May Kim-Tenser, Benjamin Emanuel, Sebina Bulic
Keck Medical Center, Univ. of Southern California, Los Angeles, USA.

Poster 36: Novel Neuroimaging Pattern in a Patient with Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy
Rodica E. Petrea1, Dharani Mudugal1, Sanjay P. Singh1, Angel Mironov2
1 Creighton Univ., Department of Neurology, Omaha, USA. 2 Creighton Univ., Department of Neuroradiology, Omaha, USA.

Poster 37: 7 Month Old Infant with Aruptured 2cm MCA Aneurysm with Subarachnoid Hemorrhage and Subdural Hematoma: CT, CTA, MRI, and MRA
Peter Kalina
Mayo Clinic, Rochester, USA.

Poster 38: Neuroimaging Outcomes of a Cognitive Rehabilitation Training Program
Christina Ledbetter1, Amy Moore2
1 LSU Health Science Center, Shreveport, USA. 2 Gibson Inst. of Cognitive Research, Colorado Springs, USA.

Poster 39: The Diagnostic Dilemma of Space-Occupying Lesion of Brain in a Patient with Testicular Carcinoma
Sufana Shikdar, Oumoul Barry, Eugene Choi
Mercy Catholic Medical Center, Darby, USA.

Poster 40: Role of Flat Panel Cone Beam Computed Tomography in Detecting ICH: Single Center Experience
Arindar Singh, Adish Kaffari, Sridhar Mantla, Briana Decarvalho, Anna Barminova, Hemal Patel, Spazhy Panazza, Jawal P. Kirmani
JFK Stroke & Neurovascular Center, Seton Hall University School of Medicine, Edison, USA.

Poster 41: A Penny For Your Thoughts
Amir Aftab, Rich Magun, Ami Mazhari
DENT Neurologic Inst., Buffalo, USA.

Poster 42: Full Body MRI imaging in a patient with Neurofibromatosis type I (NF1)
Vishal Mandge, David Kaufman, Michael Swerdlow
Montefiore Medical Center, Bronx, USA.

Poster 43: Cavernous Malformation – A Rare Complication of Gamma Knife Surgery for Arterio-Venous Malformations
Yathish Sreekantaiah Haralur, Laszlo Mechtler
Dent Neurologic Inst., Buffalo, USA.

Poster 44: Aorta-tracheo/Pulmonic Fistula from Squamous Cell Carcinoma Leading to Cerebral Air Embolism
Ryan Hakimi1, Sarah Herbst2
1 Univ. of South Carolina-Greenville Health System, Greenville, USA. 2 Greenville Health System, Greenville, USA.

Poster 45: Focal Hyperemia on CT-perfusion Scan Helps Differentiate Ischemic Stroke from Stroke Mimics
Gabriela Trifan, Fernando Testai, Laura Pedelty
Univ. of Illinois at Chicago College of Medicine, Chicago, USA.

Poster 46: Tolosa Hunt Syndrome: Important Diagnosis Often Missed with Incorrect MRI Sequences!
Vishal Mandge, David Kaufman, Michael Swerdlow
Montefiore Medical Center, Bronx, USA.

Poster 47: A Case of Cerebral Hyper Perfusion Syndrome Following Carotid Endarterectomy
Rajesh Kuthumb, Poornachand Weerapanen, Rohan Samant, Krishna Nalebali, Sanjews Ontario
Univ. of Arkansas for Medical sciences, Little Rock, USA.
ABSTRACT INDEX

Poster 48: Rapid Growth of New Neurovascular Ultrasound Services in an Urban Comprehensive Stroke Center
Kim Hodge, Maitri Desai, Karen Steagrate, Michael Frankel, Aaron Anderson
Grady Memorial Hospital - Marcus Stroke & Neuroscience Center, Atlanta, USA
Emory Univ. School of Medicine, Atlanta, USA

Poster 49: Reorganization of Cerebellar Afferent Pathway in the Postacute Rehabilitation Phase of Stroke
Juana Chung, Taehong Kim, Sehong Kim
The Catholic Univ. of Korea, Seoul, Republic of Korea
RHIN hospital, Suwon, Republic of Korea

Poster 50: Primary Diffuse Large B-Cell Lymphoma of the CNS in an Immunocompetent Patient Presenting with Abulia and Falls
Tanner Anderson, Sunil Mutgi
Gundersen Health System, La Crosse, USA

Poster 51: Could CT Cerebral Angiogram be used as a Surrogate for CT Perfusion?
Zerlene Lim, Andrew Bonura
Liverpool Hospital, Sydney, Australia

Poster 52: Advanced Neuroimaging of a Rare Chordoid Glioma of the Third Ventricle
Jishnu Nair, Rick Magun, Laszlo Metchler, Nandor Pinter
Demon Neurological Inst., Amherst, USA

Poster 53: MRI Sequences to Detect and Differentiate Post Operative Internal Acoustic Canal Mass after Microvascular Decompression Surgery
Kathish Harjison, Nandor Pinter, Laszlo Metchler
University of Buffalo, Buffalo, USA - Dent Neurological Inst., Amherst, USA

Poster 54: Marchiafava Bignami Disease, a Rare Cause of Callosal Damage, Even More Rare and Deadly if Not Considered
Tigran Kesayan, Matthew Chung, Yazan Suradi
Univ. of South Florida (USF), Tampa, USA
J.A. Haley VA, Tampa, USA

Poster 55: A Case of Superior Sagittal Sinus Thrombus that was Initially Misdiagnosed as an Ischemic Stroke in the Emergent Setting
Matthew Chung, Yazan Suradi, Tigran Kesayan
Univ. of South Florida, Tampa, USA
POSTER & EXHIBITOR MAP

TEXAS II-IV

TEXAS FOYER

25
The American Society of Neuroimaging

(ASN) invites attending physicians, residents, fellows, advanced practice providers and neurovascular technologists to join our Community.

**Education.** We offer the only conference in the US focused specifically on Neuroimaging education, including opportunities to earn CME credits specific to MR/CT and Neurovascular ultrasound.

**Advocacy.** We represent the interests of neuroimagers in the American Medical Association’s House of Delegates and tackle issues that threaten self-referral.

**Certification.** We offer the only physician Certification program in Neurosonology allowing you to elevate your practice and recognize your expertise in Applied Principles of Physics and Fluid Dynamics, Carotid Duplex, Transcranial Doppler. A Certification program for Neurovascular Technologists is expected to launch in 2018.

**Networking.** We connect you to other medical professionals who use neuroimaging in their day-to-day clinical practice via our Annual Meeting and membership directory.

**Professional Development.** We have opportunities for you to get involved on committees, which allow you to sharpen your volunteer skills. We also have unique offerings for trainees via the Residents and Fellows section of the website, as well as bi-weekly webinars.

**Become a member at asnweb.org**
Submit to the Journal of Neuroimaging
Experience the benefits of our strong reputation, international readership, and rapid publication times, including average online publication in 45 days from acceptance

Download the Journal App
Take research on the go (currently for Apple devices)

Read Top Accessed Articles:
- Characterizing Clinical and MRI Dissociation in Patients with Multiple Sclerosis
- Applications of Ultrasound in the Resection of Brain Tumors
- MRI Patterns of Isolated Lesions in the Medulla Oblongata

Bookmark the Journal Homepage today:
Wileyonlinelibrary.com/journal/JON
## PROGRAM COMMITTEE & FACULTY DISCLOSURE STATEMENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Disclosure Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madhureeta Achari, MD (P)</td>
<td>None</td>
</tr>
<tr>
<td>Béla Ajtai, MD, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Thomas Alexander, RVT (F)</td>
<td>None</td>
</tr>
<tr>
<td>Andrei Alexandrov, MD, RVT (P, F)</td>
<td>None</td>
</tr>
<tr>
<td>Konstantin Balashov, MD, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>John Bennett, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>John Bertelson, MD (P, F)</td>
<td>None</td>
</tr>
<tr>
<td>Allan Burke, MD (P)</td>
<td>None</td>
</tr>
<tr>
<td>Delia Cabrera DeBuc, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>W. Andres Camargo, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Esther Collado, RN, RVT (F)</td>
<td>None</td>
</tr>
<tr>
<td>Calli Leighann Cook, APRN-CNP (F)</td>
<td>None</td>
</tr>
<tr>
<td>Sarah Denes, ACNP-BC (F)</td>
<td>None</td>
</tr>
<tr>
<td>Colleen Douville, RVT (F)</td>
<td>None</td>
</tr>
<tr>
<td>Sidney Edelman, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Emma Fields, APRN-CNP (P)</td>
<td>None</td>
</tr>
<tr>
<td>Elliot Frohman, MD, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Teresa Frohman, PA-C (F)</td>
<td>None</td>
</tr>
<tr>
<td>Zsolt Garami, MD, RPVI (P, F)</td>
<td>None</td>
</tr>
<tr>
<td>Gyanendra Kumar, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Ryan Hakimi, DO, MS (P, F)</td>
<td>None</td>
</tr>
<tr>
<td>Mark Hamilton, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>R. Edward Hogan, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Michael Hutchinson, MD (P)</td>
<td>None</td>
</tr>
<tr>
<td>Marge Hutchisson, RVT, RDCS (F)</td>
<td>None</td>
</tr>
<tr>
<td>Dara Jamieson, MD (P, F)</td>
<td>None</td>
</tr>
<tr>
<td>Rakesh Khatri, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Joshua Klein MD, PhD, FANA, FASN (P)</td>
<td>None</td>
</tr>
<tr>
<td>David Leake, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Name</td>
<td>Affiliations</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>David Liebeskind, MD, FAAN, FAHA, FANA (P, F)</td>
<td>Consultant: Stryker, Medtronic</td>
</tr>
<tr>
<td>Alan Lumsden, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Paul Maertens, MD (F, P)</td>
<td>None</td>
</tr>
<tr>
<td>Marc Malkoff, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Venkatachalem Mangeshkumar, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Joseph Masdeu, MD, PhD (F, P)</td>
<td>Contracted Research: GE Healthcare, Eli Lilly, Consultant: GE Healthcare, Speaker Bureau: Eli Lilly</td>
</tr>
<tr>
<td>Alberto Maud, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Laszlo Mechtler, MD, FAAN, FASN (F, P)</td>
<td>None</td>
</tr>
<tr>
<td>Robert Miletich, MD, PhD, FAAAA (F)</td>
<td>None</td>
</tr>
<tr>
<td>Jefferson Miley, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Adnan Qureshi, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Anantha Ramana Vellipuram, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Alexander Razumovsky, PhD, FAHA (F, P)</td>
<td>None</td>
</tr>
<tr>
<td>Brenda Rinsky, RVT, RDMS (F)</td>
<td>None</td>
</tr>
<tr>
<td>Tatjana Rundek, MD, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Gabriella Szatmáry, MD, PhD (F, P)</td>
<td>None</td>
</tr>
<tr>
<td>Charles Tegeler, MD (F, P)</td>
<td>None</td>
</tr>
<tr>
<td>Steven To, RVT, RDMS (F)</td>
<td>None</td>
</tr>
<tr>
<td>John Volpi, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Min Wang, MD, PhD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Steven Warach, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Lawrence Wechsler, MD (P)</td>
<td>Other: Silk Road Medical (Scientific Advisory Board), Remedy Pharmaceuticals (Scientific Advisory Board), Forest Devices (Scientific Advisory Board), ACT I (Steering Committee); Consultant: Biogen Idec; SanBio; Athersys</td>
</tr>
<tr>
<td>Robin Whitehall, MD (F)</td>
<td>None</td>
</tr>
<tr>
<td>Mateo Ziu, MD, FAANS (F)</td>
<td>None</td>
</tr>
</tbody>
</table>

P = Program Committee Member
F = Annual Meeting Faculty
Fellowship in the American Society of Neuroimaging (FASN)

Fellowship in the American Society of Neuroimaging (FASN) is meant to recognize individuals who have made significant contributions to the field of neuroimaging and have impacted the growth and practice of neuroimaging at a regional and national level.

Current Fellows

Patrick Capone, MD, PhD, FASN  
John Choi, MD, FASN  
Gregory Kapinos, MD, MS, FASN  
Joshua Klein, MD, PhD, FANA, FASN  
Tomasz Kosierkiewicz, MD, FASN  
Laszlo Mechtler, MD, FAAN, FASN  
Gabriella Szatmary, MD, PhD, FASN  
Mohammed Zafar, MD, FASN

View eligibility criteria and apply for FASN status at www.asnweb.org.

AWARD WINNERS

2018 Lifetime Achievement Award
Jack O. Greenberg, MD

Qureshi Award

Vikram Jadhav, MD, PhD, Lateral Projection is Superior to Oblique Groin Projection in Femoral Angiography for Identification of Arteriotomy Site

The Qureshi Award, funded by the ASN Education Foundation, is for the best abstract submitted by a student, resident or fellow. The abstract must be based in basic or clinical research in Diagnostic Angiography. The research should consist of original work including new imaging methods, techniques, clinical application, etc. The purpose of the award is to encourage research and advance the field of Angiography. While the contestant must be the senior author of the abstract, there are no restrictions upon co-authorship.

Resident Travel Awards

Reza Bavarsad Shahripour, MD, Benedikt’s Mimic Syndrome in the Thalamus Infarction
Samra Vaziani, MD, Multi-focal Recurrent Strokes in Cerebral Vasculitis and Intravascular Large B-cell Lymphoma of Central Nervous System, Mimicking Similar Clinical and Radiologic Findings: Case Series

The Resident Travel Awards are offered to persons in a neurology residency program. Selection is based on the quality of the abstract.
JOIN US for a VIEWING RECEPTION of SUPER BOWL LII SUNDAY, FEBRUARY 4 5:30 - 9:30 PM SPONSORED BY
SAVE THE DATE • ASN 42\textsuperscript{ND} ANNUAL MEETING

January 24-27, 2019
Wyndham Grand Rio Mar Beach Resort & Spa
Rio Grande, Puerto Rico

JANUARY 24-27, 2019
WYNDHAM GRAND RIO MAR BEACH RESORT & SPA
RIO GRANDE, PUERTO RICO