

41ST ANNUAL MEETING OF THE AMERICAN SOCIETY OF NEUROIMAGING

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NEUROIMAGING: THIS AIN'T OUR FIRST RODEO! FEBRUARY 4-6, 2018

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: <u>akhcme.com/</u> <u>akhcme/pages/asn</u>

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

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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

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

MONDAY, FEBRUARY 5, 2018

| 7:00 am – 6:00 pm | Registration | Texas Foyer |
|-----------------------|---|----------------|
| 7:00 – 8:00 am | Breakfast with Exhibitors | Texas II-IV |
| 8:00 – 9:30 am | Ultrasound Physics. <i>Sidney Edelman,</i> PhD | Texas I |
| 9:30 am – 12:30 pm | Current Topics in MR/CT Part I. John Bertelson, MD and Gabriella Szatmáry, MD, PhD | Texas I |
| | Current Topics in Neurosonology Part I. Zsolt Garami, MD, RPVI | Texas V-VII |
| 12:30 – 1:30 pm | Business Meeting and Awards Ceremony Luncheon | Texas I |
| 1:30 – 2:00 pm | Sweet Tooth Fix with Exhibitors | Texas II-IV |
| 2:00 – 4:00 pm | Current Topics in MR/CT Part I - Continued. John Bertelson, MD and Gabriella Szatmáry, MD, PhD | Texas I |
| | Launching Neurovascular Sonographer (NVS) Credential. <i>Alexander Razumovsky,</i> <i>PhD and Colleen Douville, RVT</i> | Texas V-VII |

| 4:00 – 6:00 pm | Poster Session and Guided Tour. Light Reception with Exhibitors | Texas II-IV |
|----------------|--|-------------|
| 6:00 – 9:00 pm | MRI Hands-On Workshop: Objective Neuroradiology: Cortical Reconstruction and DTI Reconstruction. Eduardo Gonzalez-Toledo, MD, PhD | Texas VII |
| | Neurosonology Hands-On Workshop. Andrei Alexandrov, MD, RVT and Zsolt Garami, MD, RPVI | Texas V-VI |

TUESDAY, FEBRUARY 6, 2018

| 7:00 am – 5:00 pm | Registration | Texas Foyer |
|-----------------------|---|----------------|
| 8:00 – 9:00 am | Seeing the Brain Through the Eyes of Texas: What is Next for Neuroimaging Applications? <i>Delia Cabrera DeBuc,</i> <i>PhD and Gabriella Szatmáry, MD, PhD</i> | Texas I |
| | "Earn Your Spurs" in Vascular Developmental Defects. <i>Paul Maertens,</i> <i>MD</i> | Texas V-VII |
| 9:00 am – 12:30 pm | Current Topics in MR/CT Part II. John Bertelson, MD and Gabriella Szatmáry, MD, PHD | Texas I |
| | Current Topics in Neurosonology Part II. Alexander Razumovsky, PhD | Texas V-VII |
| 10:30 – 10:45 am | Break | Texas Foyer |
| 12:30 – 1:30 pm | Phillips Lunch Presentation (non-CME) | Texas I |
| 1:30 – 3:30 pm | Functional Imaging. Joseph Masdeu, MD, PhD | Texas I |
| 4:00 – 5:00 pm | Normal Pressure Hydrocephalous. Mark Hamilton, MD and Venkatachalem Mangeshkumar, MD | Texas I |
| 5:00 – 6:30 pm | Controversies in Neuroimaging. Dara Jamieson, MD | Texas I |

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Robin Whitehall, MD Ascension Austin, Texas

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ASN 2018 ANNUAL MEETING PROGRAM

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:

| 10:00 - 10:45 am | Neuroimaging Modalities in a Headache Patient - Calli Leighann Cook, APRN-CNP | |
|---------------------|--|--|
| 10:45 - 11:20 am | Spine Imaging - Sarah Denes, ACNP-BC and Ryan Hakimi, MS, DO | |
| 11:20 - 11:45 am | Introduction to TCDs - Ryan Hakimi, MS, DO | |
| 11:45 am – 12:30 pm | Imaging Scoring in Hemorrhagic Stroke - Alberto Maud, MD | |
| 12:30 - 1:15 pm | 30 - 1:15 pm Imaging Scoring in Ischemic Stroke - Anantha Ramana Vellipura MD | |
| 1:15- 1:30 pm | Panel discussion | |

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:

| 2:30 – 2:55 pm | The DAWN of the New Era – Speaker TBA |
|----------------|---|
| 2:55 – 4:30 pm | Imaging of Acute Stroke Panel – Andrei Alexandrov, MD, RVT, David Liebeskind, MD, and Steve Warach, MD |

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 ultrasonography, 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 afflicted by various disorders.

Individual Speaker Schedule:

| 9:30 - 10:15 am | Approach to Neuroimaging - Béla Ajtai, MD |
|---------------------|---|
| 10:20 - 11:00 am | Vascular Anomolies - Paul Maertens, MD |
| 11:15 am - 12:00 pm | Intracranial Infection: Radiologic and Pathology Correlation David Leake, MD and Min Wang, MD, PhD |
| 12:00 - 12:10 pm | Resident Cases - Andres Camargo, MD |
| 12:10 - 12:20 pm | Resident Cases - Robin Whitehall, MD |
| 12:20 - 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 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.

| 9:00 - 9:20 am | Waveform Recognition - Andrei Alexandrov, MD, RVT |
|--------------------|---|
| 9:20 - 9:40 am | Transcranial Doppler Protocol - Steven To, RVT, RDMS |
| 9:40 -10:00 am | Subclavian vs. Vertebral Steal - Zsolt Garami, MD, RPVI |
| 10:00 -10:20 am | Embolus Detection and Monitoring - John Volpi, MD |
| 10:20 -10:40 am | PFO - TCD Bubble Test - Zsolt Garami, MD, RPVI |
| 10:40 -11:00 am | Intraoperative Monitoring - Alan Lumsden, MD |
| 11:00 -11:20 am | Carotid Protocol - Esther Collado, RN, RVT |
| 11:20 -11:40 am | Carotid Plaque Caratherization and IMT - Tatjana Rundek, MD, PhD |
| 11:40 am -12:00 pm | Interpretation (Grading Stenosis) - Andrei Alexandrov, MD, RVT |
| 12:00 -12:15 pm | IAC Requirements for Reports - Marge Hutchisson, RVT, RDMS |
| 12:15 -12:30 pm | Q & A – Hard Rock Cases |

Individual Speaker Schedule:

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 afflicted 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 Neuroimaging (ASN) was founded in 1977 and is an international, professional organization representing neurologists, 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 credentials

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, FAHA; Tatjana Rundek, MD, PhD; Charles Tegeler MD; Steven To, RVT, RDMS

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

Tuesday, February 6

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 Neurodegenera- tion - 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 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 afflicted by various disorders.

| 9:00 – 9:40 am | Image-Guided Acute Stroke Therapy - Steven Warach, MD |
|---------------------|---|
| 9:45 – 10:25 am | Endovascular - Jefferson 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 Mechtler, MD, FAAN, FASN |
| 12:25 - 12:30 pm | Q&A |

Individual Speaker Schedule:

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.

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:

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

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 | Sneaker | Schedule |
|------------|---------|-----------|
| mannauai | Speaker | Scheuule. |

| 1:30 – 2:00 pm | Stroke - Steven Warach, MD |
|----------------|--|
| 2:00 – 2:30 pm | Epilepsy - R. Edward Hogan, MD |
| 2:30 – 3:00 pm | Disorders Leading to Dementia - Joseph Masdeu, MD, PhD |
| 3:00 – 3:30 pm | Neoplastic Disease - Robert Miletich, MD, PhD, FAAAS |

Modalities: MR, CT, PET, SPECT

Normal Pressure Hydrocephalous

CME: 1.0 4:00 – 5:00 pm, Texas I

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 239/100,00 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

CME: 1.5 5:00 – 6:30 pm, Texas I

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 | Pre-operative Carotid Stenosis: How Much Imaging is Enough? - Rakesh Khartri, 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

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Muhib Khan¹, Heather Heiser², Laurel Packard¹, Nate Bernicchi¹ ¹Spectrum Health, Grand Rapids, USA. ²Rush Univ., Chicago, USA.

Poster 3: A Survey of Intersocietal Accreditation Commission (IAC) **Accredited MRI Facility Safety Practice**

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

Poster 4: Improved Quality at **Intersocietal Accreditation Commission (IAC) Carotid Artery Stenting Facilities**

Mary Beth Farrell¹, Nancy Merrill¹, Mary Lally¹, Barry Katzen², David Sacks³ ¹Intersocietal Accreditation Commission. Ellicott City, USA. ²Miami Cardiac & Vascular Inst., Miami, USA. ³Reading Hospital and Medical Center, West Readina, 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.

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Elina Zakin, Susan Shin, Jesse Weinberger Icahn School of Medicine at Mount Sinai. New York, USA,

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Trassanee Chatmethakul, Paul Maertens Department of Pediatrics, Univ. of South Alabama, Mobile, USA.

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Omar Hussein, Khalid Sawalha, Ahmed Abd Elazim, Mohammad Hamed The Ohio State Univ. Wexner Medical Center, Columbus, OH, USA.

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Daniel Santirso, Zsolt Garami, Alan Lumsden

Cardiovascular Surgery Department. Houston Methodist DeBakey Heart and Vascular Center, Houston (Texas), USA.

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Sarthak Mittal, Laszlo Mechtler, Yathish Haralur Dent Neurologic Inst., Buffalo, USA.

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Mohammad Hajighasemi-Ossareh, Peter Tsou, Robert Burt, Geoffrey Konye, Sebina Bulic

Univ. of Southern California/Keck School of Medicine, Los Angeles, USA.

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Tanaporn Wilaisakditipakorn, Paul Maertens Univ. of South Alabama, Mobile, USA.

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Mohammed Alwatban¹, Edward Truemper², Abdullah Al-rethaia³, Daniel Murman⁴, Greg Bashford^{1,2} ¹Univ. of Nebraska-Lincoln, Lincoln, USA. ²Children's Hospital & Medical Center, Omaha, USA. ³Qassim Univ., Buraidah, Saudi Arabia. ⁴Univ. of Nebraska Medical Center, Omaha, USA.

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Thomas Alexander, Kendall Nixon, Lisa Hutchison, Lester Collins, Allison Hennigan, George Plotkin East Texas Medical Center Neurological Inst., Tyler, TX, USA.

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JFK Stroke & Neurovascular Center, Seton Hall Hackensack Meridian School of Medicine, Edison, USA.

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Lily Chau, Gregory Kapinos SUNY Downstate Medical Center, Brooklyn, NY, USA.

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Andrew Lockey¹, <u>Adrian Fawcett²</u>, Dawn Whyte³, Demetrios Sahlas⁴ ¹Univ. of Calgary, Calgary, Canada. ²Trillium Health Centre, Mississauga, Canada. ³Hamilton Health Sciences, Hamilton, Canada. ⁴McMaster Univ., Hamilton, Canada.

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<u>Vikram Jadhav</u>', Adnan Qureshi²³, Muhammad Fareed Suri¹ 'CentraCare Health, St. Cloud, MN, USA. ²Mercy Health, Rockford, IL, USA. 3Rockford Health System, Rockford, IL, USA.

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Adrian Burgos¹, Kristie Wang¹, Adnan Bulic², Benjamin Emanuel1, May Kim-Tenser¹, Sebina Bulic¹ ¹Univ. of Southern California, Los Angeles, USA. ²Pasadena City College, Pasadena, USA.

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<u>Mahsa Pahlavanzadeh</u>', Ryan Hakimi² 'Clemson Univ., Clemson, USA. ²Univ. of So. Carolina-Greenville Health Syst., USA.

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¹St. Mary Mercy Hospital, Livonia, USA. ²Providence-Providence Park Hospital, Southfield, USA.

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Rodica E. Petrea¹, Dharani Mudugal¹, Sanjay P. Singh1, Angel Mironov² ¹Creighton Univ., Department of Neurology, Omaha, USA. ²Creighton Univ., Department of Neuroradiology, Omaha, USA.

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<u>Christina Ledbetter</u>¹, Amy Moore² ¹LSU Health Science Center, Shreveport, USA. ²Gibson Inst. of Cognitive Research, Colorado Springs, USA.

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<u>Amar Anand</u>, Rick Magun, Amir Mazhari DENT Neurologic Inst., Buffalo, USA.

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<u>Gabriela Trifan</u>, Fernando Testai, Laura Pedelty Univ. of Illinois at Chicago College of Medicine, Chicago, USA.

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<u>Kim Hodge</u>¹, Maitri Desai¹, Karen Seagraves¹, Craig Tindall¹, Michael Frankel^{1,2}, Aaron Anderson^{1,2} ¹Grady Memorial Hospital - Marcus Stroke & Neuroscience Center, Atlanta, USA. ²Emory Univ. School of Medicine, Atlanta, USA.

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Juana Chung¹, Taehong Kim¹, Sehong Kim1, Youngkook Kim² ¹The Catholic Univ. of Korea, Seoul, Republic of Korea. ²RHIN hospital, Suwon, Republic of Korea.

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<u>Yathish Haralur</u>², Nandor Pinter², Laszlo Mechtler²

¹Unversity of Buffalo, Buffalo, USA. ²Dent 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^{1,2}, <u>Mattew Chung</u>^{1,2}, Yazan Suradi^{1,2} ¹Univ. of South Florida (USF), Tampa, USA. ²J.A. Haley VA, Tampa, USA.

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<u>Matthew Chung</u>, Yazan Suradi, Tigran Kesayan Univ. of South Florida, Tampa, USA.

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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.

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Reza Bavarsad Shahripour, MD. Benedikt's Mimic Syndrome in the Thalamus Infarction

Samra Vazirian, MD. Multi-focal Recurrent Strokes in Cereberal 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.



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