Sun Valley Stroke Conference

Evolving Paradigms for Stroke Care

March 10-13, 2022

St Luke's®

THE UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

UC San Diego SCHOOL OF MEDICINE

Presented by St. Luke's Neurosciences in partnership with the University of Tennessee Health Science Center and the University of California San Diego School of Medicine.

Photo courtesy of Sun Valley Resort

Welcome to the Third Annual Sun Valley Stroke Conference

Dear Colleagues,

Welcome to Idaho! Our goal in creating this meeting was to provide provocative discussion and informative education in a comfortable setting, while also allowing for world-class recreation in a family-friendly environment. Now in our third year, we are excited about our new relationship with the University of California San Diego School of Medicine and fortunate to enjoy an ongoing partnership with the University of Tennessee Health Science Center. As in past years, we have assembled thought leaders from across North America to discuss both ischemic and hemorrhagic stroke. The disciplines of neurology, neurosurgery, neuroradiology, intensive care and cardiology are among those represented.

We have witnessed exciting paradigm shifts in the way patients are treated in recent years. Yet, it is important to realize from where we have come and the historical context in which recent advances have been made. Our meeting this year opens Thursday evening with riveting talks from neurology and neurosurgery pioneers, describing their storied careers and highlighting the development of novel, revolutionary ideas. This sets the stage for Friday's focus on real-world solutions for patients who don't neatly match the criteria on which many landmark trials have been based. Old debates will be rekindled, competing treatment strategies argued and less common scenarios considered.

Saturday will focus on systems of care, which vary nationally and regionally. What works in Manhattan may not apply in Southern California, Memphis or the Wood River Valley! Stroke team creation, stroke center certifications and novel workflows for treatment will be some of the important topics we will discuss. Lastly, stroke care has benefited greatly from technological advancements; physician engagement is crucial to fostering innovation. Our final session on Sunday morning is devoted to which advances are coming to fruition and to those just over the horizon.

Partnership with industry is not only critical in advancing stroke technology, but essential for putting on an educational conference such as this. We are grateful to the sponsors who have graciously supported our venture. Please make sure to visit with them during breakfast and après-ski sessions to exchange ideas.

We trust you will take advantage of the free time each day! Sun Valley is known for alpine and Nordic skiing, but indoor and outdoor family-friendly activities abound at the resort and nearby, too. Don't miss out on our social events, including an expanded opening reception, daily après-ski refreshments and family ice skating.

A core principle of the meeting is that it is interactive; we encourage audience participation in discussion as well as in live polling. Lastly, please make sure to complete evaluations at the end of our meeting to help us make the Fourth Annual Sun Valley Stroke Conference even better.

Sincerely,

Edward A.M. Duckworth, MD, MS, FAANS
On Behalf of SVSC Organizing Committee

Intended Audience

- Neurologists
- Neurosurgeons
- Primary care providers
- Emergency physicians
- Hospitalists
- Interventional neurologists
- Interventional neuroradiologists
- EMS providers
- Nurses
- Stroke coordinators
- Therapists
- Radiation technologists

Learning Objectives

- Review the history of treatments for hemorrhagic and ischemic stroke.
- Describe the latest treatment strategies for cerebrovascular disease.
- Identify important aspects of effective stroke systems of care.
- Discuss complex cases involving surgical, endovascular and medical management of stroke.

Conference Check-in

Thursday, March 10: Limelight Lobby at the Sun Valley Inn, 1:30-7:30 p.m.

Friday, March 11, and Saturday, March 12: Outside of Limelight B room, 7-8 a.m. and 3-4:30 p.m.

Sunday, March 13: Outside of Limelight B room, 7-8 a.m.

Conference Organizing Committee

Dan Abenroth, MD

Andrei Alexandrov, MD

Anne Alexandrov, APN, PhD

Adam Arthur, MD, MPH

Edward Duckworth, MD, MS

Lucas Elijovich, MD

Alexander Khalessi, MD, MBA

John Perl II, MD

Special thanks to the invaluable contributions of:

Aimee Borders

Ben Slee, RN

Morgan Tupper

Loren Walters

The Sun Valley Stroke Conference Committee is dedicated to ensuring the safety of all meeting attendees. COVID-19 pandemic precautions required for all meeting attendees include:

- If you are experiencing any symptoms of COVID-19, please call 208-724-4926 or 208-989-3210 to have rapid COVID-19 testing* scheduled as soon as possible. You will be directed to St. Luke's Wood River Medical Center at 100 Hospital Drive in Ketchum.
- Conference attendees must show proof of COVID-19 vaccination or a negative COVID-19 test within 72 hours of attending the conference to obtain their conference badges.
- Upon arrival, if you have forgotten your vaccine card or do not have proof of a negative test, you will be directed to receive a rapid test per the instructions above.
- Masks must be worn indoors at all times.
- Masks and hand sanitizer are available at the entrance of the conference room.
- Conference attendees must wear their conference badges to enter the conference and vendor rooms.

***If you test positive for the coronavirus you will be asked to quarantine for the remainder of the conference.**

Scientific Program

The program is designed to be dynamic, with short lectures in the morning punctuated by roundtable discussions. These are followed by case presentations, hot topics and head-to-head debates during the evening sessions. The meetings will cover the entire spectrum of stroke care, including discussions on the history of stroke, navigating difficult treatment scenarios that don't fit trial criteria, examining stroke systems of care, and exploring emerging technology and treatments for stroke.

All conference meetings will be held in the Limelight B room.

Thursday, March 10, 4-7 p.m.

From Apoplexy to CVA to LVO: Historical Accounts of Stroke
Moderator: Dr. Edward Duckworth

4-4:10 p.m.	Introduction and Welcome	*Dr. Edward Duckworth*
4:10-4:40 p.m.	The History of Cerebrovascular Neurosurgery at the University of Tennessee	*Dr. Adam Arthur*
4:40-5:10 p.m.	My Journey in Neurosurgery and Mentorship	*Dr. Robert Spetzler*
5:10-5:50 p.m.	Early Sun Valley: Union Pacific, Averell Harriman and Alf Engen	*John Lundin*
5:50-6 p.m.	Break	
6-6:30 p.m.	Inventing a Game Changer: The Development of Flow Diversion	*Dr. Ajay Wakhloo*
6:30-7 p.m.	Fifty Years of Acute Ischemic Stroke Treatment: A Personal History	*Dr. James Grotta*
7-8:30 p.m.	**Opening reception – sponsored by Stryker** *Stryker funding was not used to pay for any food, beverage or entertainment associated with the opening reception.*	

Friday, March 11, 7:30-10:30 a.m.

Navigating Difficult Treatment Scenarios
Moderator: Dr. Andrei Alexandrov

7-7:30 a.m.	Seated breakfast in Limelight B	
7:30-7:53 a.m.	How Does TCAR Fit Into the Treatment of Carotid Disease	*Dr. Brian Jankowitz*
7:53-8:16 a.m.	The Role of Aneurysm Clipping in the Age of Endovascular Innovation	*Dr. Robert Spetzler*
8:16-8:39 a.m.	International Practice Variability in Treatment of Aneurysmal Subarachnoid Hemorrhage	*Dr. Soojin Park*
8:39-9:06 a.m.	**Roundtable Discussion:** Management of Chronic Subdural Hematoma: Medical, Surgical, Endovascular	*Dr. Alexander Khalessi, Dr. Adam Arthur, Dr. Edward Duckworth and Dr. Jay Howington*
9:06-9:21 a.m.	Coffee break with exhibitors	
9:21-9:44 a.m.	Thrombolysis: New Data and What's in the Future	*Dr. James Grotta*
9:44-10:07 a.m.	Utilization of Combined Biplane Angiography/CT Suite	*Dr. J Mocco*
10:07-10:30 a.m.	Combined Multimodal Treatment of AVMs	*Dr. Alexander Khalessi*
10:30 a.m.-4 p.m.	Free time for recreation	

Friday, March 11, 4-7 p.m.

Real World Dilemmas in the Care of the Stroke Patient: Interactive Case Presentations, Hot Topics and Debates
Moderator: Dr. Adam Arthur

2-4 p.m.	Après-ski with exhibitors – sponsored by Medtronic	
4-4:30 p.m.	**Head-to-Head Debate:** Should TNK Replace TPA as the Gold-Standard Thrombolytic?	*Dr. James Grotta and Dr. Raymond Grams Moderator: Andrei Alexandrov*
4:30-4:51 p.m.	Hot Topic: What Have We Learned From COVID-19 Stroke Treatment That Might Evolve Stroke Care in the Future?	*Dr. J. Scott Pannell*
4:51-5:12 p.m.	Hot Topic: Intracranial Stenting for ICAD: Are We There Yet? Update Since SAMPRISS Trial	*Dr. Lucas Elijovich*
5:12-5:30 p.m.	Interactive Case: TBD	*Dr. Jay Howington*
5:30-5:48 p.m.	Interactive Case: TBD	*Dr. Alexander Khalessi*
5:48-6:06 p.m.	Interactive Case: What are My Reperfusion Options?	*Dr. Andrei Alexandrov*
6:06-6:24 p.m.	Interactive Case: Anticoagulation Post IV TPA	*Dr. Ray Grams*
6:24-6:42 p.m.	Interactive Case: Novel Vasospasm Treatment	*Dr. Brian Jankowitz*
6:42-7 p.m.	Interactive Case: Pediatric Stroke	*Dr. Lucas Elijovich*

Saturday, March 12, 7:30-10:30 a.m.

Optimizing Systems of Care to Adapt to Changing Practices
Moderator: Dr. Dan Abenroth

7-7:30 a.m.	Seated breakfast in Limelight B	
7:30-7:53 a.m.	Management of Atypical Aneurysms in the Modern Era	*Dr. Jeffrey Steinberg*
7:53-8:16 a.m.	Achieving Seamless Care Delivery: The Influence of Team Composition and Training in Challenging Geographies	*Dr. Clemens Schirmer*
8:16-8:39 a.m.	Keys to Success for Telestroke Implementation and Utilization: Pearls and Pitfalls	*Dr. Johanna Morton*
8:39-9:06 a.m.	**Roundtable Discussion:** Use of CTP in Decision for Thrombectomy	*Dr. Jeffrey Steinberg, Dr. Anne Alexandrov, Dr. Lucas Elijovich and Dr. Johanna Morton*
9:06- 9:21 a.m.	Coffee break with exhibitors	
9:21-9:44 a.m.	Implementation and Utilization of NPs and PAs as Members of an Inpatient Stroke Team	*Dr. Andrei Alexandrov*
9:44-10:07 a.m.	Treatment of Cerebral Venous Sinus Thrombosis	*Dr. Lucas Elijovich*
10:07-10:30 a.m.	PFO Closure and Cryptogenic Stroke	*Dr. Robert Duerr*
10:30-4 p.m.	Free time for recreation	
11:30 a.m.-12:30 p.m.	OPTIONAL – Educational luncheon hosted by AstraZeneca in The Boiler Room: "Clinical Considerations in Stroke or Transient Ischemic Attack."	

Saturday, March 12, 4-7 p.m.

Designing Systems for the Best Outcomes: Interactive Case Presentations, Hot Topics and Debates
Moderator: Dr. Anne Alexandrov

2-4 p.m.	Après-ski with exhibitors	
4-4:30 p.m.	**Head-to-Head Debate:** Is Specialized Neurointensive Care Important for Every Hospital?	*Dr. Soojin Park and Dr. Matt DiVietro Moderator: Lucas Elijovich*
4:30-4:51 p.m.	Hot Topic: Stroke Certification 2.0	*Dr. Johanna Morton*
4:51-5:12 p.m.	Hot Topic: Lumbar Drainage + Intrathecal TPA for Subarachnoid Hemorrhage	*Dr. Jay Howington*
5:12-5:30 p.m.	Hot Topic: Contributors to DIDO	*Dr. Anne Alexandrov*
5:30-5:48 p.m.	Interactive Case: Stroke Systems of Care	*Dr. Clemens Schirmer*
5:48-6:06 p.m.	Interactive Case: How Can Data Tracking Help Improve a Stroke Program?	*Stephanie Shawver, RN*
6:06-6:24 p.m.	Interactive Case: Pregnancy and Stroke	*Dr. Dan Abenroth*
6:24-6:42 p.m.	Interactive Case: Moyamoya Disease	*Dr. Jeffrey Steinberg*
6:42-7 p.m.	Interactive Case: Cerebellar AVM	*Dr. Edward Duckworth*
7:15-8:15 p.m.	Social event: Family Skate Night – sponsored by Neurologic	

Sunday, March 13, 7:30-10:30 a.m.

Emerging Technology and Treatments for Ischemic and Hemorrhagic Stroke
Moderator: Dr. Alexander Khalessi

7-7:30 a.m.	Seated breakfast in Limelight B	
7:30-7:53 a.m.	What is the Optimal Timing for Treatment of Symptomatic Carotid Stenosis?	*Dr. Brian Jankowitz*
7:53-8:16 a.m.	Endovascular Brain-Computer Interface	*Dr. J Mocco*
8:16-8:39 a.m.	Automated Imaging and Notification Technologies for Emergent Stroke	*Dr. J. Scott Pannell*
8:39-9:06 a.m.	**Roundtable Discussion:** The Role of EMS and Technology in Prehospital, Team-Based Neurological Care	*Dr. Anne Alexandrov, Casey Walker and Jeremy Schabot*
9:06-9:21 a.m.	Coffee break with exhibitors	
9:21-9:44 a.m.	Antithrombotic Coating for Intraluminal Devices	*Dr. Ajay Wakhloo*
9:44-10:07 a.m.	Andexanet Alfa vs. PCC: Can You Rely on Anecdote When You Don't Have the Antidote?	*Dr. Matt DiVietro*
10:07-10:30 a.m.	Emerging Agents for the Treatment and Prevention of Stroke: Progress in Clinical Trials	*Dr. Dan Abenroth*
Adjourn – Enjoy Sun Valley!		

Continuing Medical Education (CME) Information: This event has been planned and implemented in accordance with the accreditation requirements and policies of the Utah Medical Association through the joint providership with St. Luke's. St. Luke's is accredited by the Utah Medical Association to provide continuing medical education for physicians. St. Luke's designates this live activity for a maximum of 16.5 AMA PR Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activities.

Claiming CME: You will be able to obtain a total of 16.5 CME credits for this conference. To receive all the credits offered, please sign in before each session to record your attendance. Sign-in tables will be located outside of Limelight B in the lobby. You must also complete the post-conference evaluation. See below.

Access the conference evaluation at surveymonkey.com/r/SVSC2022 or by scanning the QR code.

Conference Attire: Mountain casual or ski clothing. Business attire discouraged.

Method of Instruction: Live programs with oral presentations and interactive discussions. We will be using Poll Everywhere for live audience participation:
· Download the Poll Everywhere app from the Apple or Google Play store.
· Access online at pollev.com/SVSC.
· Text SVSC to 22333.

Breakfast and Refreshments: Due to COVID-19 pandemic precautions, we will not provide a buffet breakfast. You can receive a plated breakfast in Limelight B each day at 7 a.m. Après-ski refreshments with the exhibitors will be served in Limelight C.

Optional Educational Lunch Provided by AstraZeneca, "Clinical Considerations in Stroke or Transient Ischemic Attack": Lunch and beverages will be provided in The Boiler Room on Saturday, March 12, from 11:30 a.m. to 12:30 p.m.

Conference Social Activities: In addition to providing an excellent educational opportunity at the Sun Valley Stroke Conference, we are hosting several recreational and interactive social events.

Planned Social Events

Thursday, March 10
7 to 8:30 p.m. – Welcome reception with hors d'oeuvres and hosted bar in the foyer outside of Limelight B and C.

Friday, March 11
2 to 4 p.m. – Après-ski with exhibitors.

Saturday, March 12
2 to 4 p.m. – Après-ski with exhibitors.

7:15 to 8:15 p.m. – Family Skate Night at the Lodge.

Sun Valley Stroke Conference Recreational Activities

There are ample opportunities for fun and adventure in Sun Valley and at the Sun Valley Resort, including downhill skiing and snowboarding, snowshoeing, Nordic skiing and ice skating. For those of you who don't want to tackle the snowy terrain, there are plenty of other fun activities.

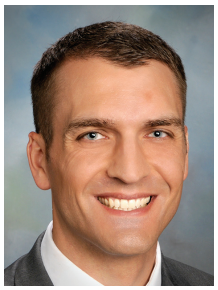
To relax and rejuvenate, check out the heated swimming pools at both the Sun Valley Lodge and Sun Valley Inn or the spa at the Sun Valley Lodge, which offers a variety of treatments to meet your needs.

For a comprehensive list of recreational opportunities, please visit sunvalley.com/things-to-do.

Discounted lift tickets: These can be purchased on the day of skiing from any Sun Valley Resort lift ticket retail outlet with a conference badge or other proof of identification.

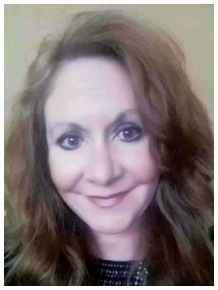
Courtesy of Sun Valley Resort

Featured Speakers



Daniel Abenroth, MD is a board-certified vascular neurologist who specializes in the care of stroke, transient ischemic attack, intracranial atherosclerosis, cerebral venous sinus thrombosis and other diseases of cerebral vasculature. He is a neurohospitalist who provides care for the breadth of neurological diseases on an inpatient basis and has specific clinical interest in neurocritical care. He is co-director of the stroke program at St. Luke's.

Andrei Alexandrov, MD earned his medical degree in 1989 from the I.M. Sechenov First Moscow State Medical University. He specialized in clinical neurology at the Institute of Neurology, Russian Academy of Medical Sciences in Moscow. He completed his fellowship training in stroke and cerebrovascular ultrasound at the University of Toronto with Dr. John W. Norris and at the University of Texas with Dr. James C. Grotta. He also received mentoring from Drs. Dmitry K. Lunev, Patrick M. Pullicino and Sandra E. Black. Dr. Alexandrov was named in the U.S. News & World Report list of Best Doctors: America's Top Doctors in Neurology, from 2011 to 2014, and by Castle Connoly as in the top 1% of specialists in neurology from 2011 to 2017.



Anne Alexandrov, PhD is a professor of both nursing and neurology, as well as the mobile stroke unit chief nurse practitioner at the University of Tennessee Health Science Center in Memphis. She is also a professor of and program director for Neurovascular Education and Training in Acute Stroke Management and Reperfusion Therapies (NET SMART) at the Health Outcomes Institute in Fountain Hills, Arizona. Developed in 2007, NET SMART is the world's first and only post-graduate fellowship training program for advanced practice nurses (APNs) in acute stroke. Through this program, Dr. Alexandrov has mentored more than 100 APNs from across the U.S. and internationally.

Adam Arthur, MD, MPH attended medical school at the University of Virginia. After college, he joined the University of Virginia Department of Neurosurgery, where he conducted research on aneurysms and cerebral vasospasm. He completed his internship and residency at the University of Utah, where he also completed his master's degree in public health with a focus on clinical trials methodology. After finishing his neurosurgery residency, he joined the Semmes Murphey Clinic and the University of Tennessee Department of Neurosurgery. During his first two years in Memphis, he completed a fellowship in endovascular and cerebrovascular neurosurgery. He is one of the first neurosurgeons in the country to develop a busy practice in both open cerebrovascular surgery and endovascular neurosurgery.

Matthew DiVietro, DO attended medical school at the Philadelphia College of Osteopathic Medicine and completed his internship, residency and chief residency in internal medicine at Albert Einstein Medical Center in Philadelphia. Dr. DiVietro completed his fellowship in pulmonary and critical care medicine at the Medical University of South Carolina. He joined St. Luke's Clinic—Idaho Pulmonary Associates in 2013. Since 2014, he has been a member of the System Stroke Council. He currently serves as chair of the System Thrombology Committee.

Edward Duckworth, MD, MS is an intracranial-focused neurosurgeon specializing in the treatment of complex cranial disorders, including the surgical treatment of hemorrhagic and ischemic stroke. He is system director of neurosurgery for St. Luke's and was recently appointed a voluntary clinical professor at the University of California San Diego.
Dr. Duckworth holds the distinction of being dual-fellowship trained, having completed fellowship training in open cerebrovascular and cranial base surgery at Northwestern University, and in endovascular neurosurgery/interventional neuroradiology at Semmes-Murphey Neurologic and Spine Institute/ University of Tennessee Health Science Center. He has particular stroke expertise in the treatment of complex aneurysms, arteriovenous malformations, carotid disease and cerebral hypoperfusion.

Robert Duerr, MD is a fellow of the American College of Cardiology. He is board certified in cardiovascular disease and interventional cardiology. He earned his medical degree from Harvard Medical School and completed his residency at New York University Medical Center. Dr. Duerr also completed fellowships at the University of California San Diego, Medical Center and the Cleveland Clinic Foundation. He is an interventional cardiologist with St. Luke's.

Lucas Elijovich, MD earned his bachelor's degree in biology from Tufts University and his medical degree from the University of Texas in Galveston. He completed his neurology residency at New York University, where he served as chief resident. He pursued advanced interests in cerebrovascular disease, neurocritical care and interventional neuroradiology, completing fellowship training in stroke and neurocritical care at the University of California, San Francisco, and training with Dr. Alejandro Berenstein, one of the pioneers of interventional neuroradiology, in New York. Dr. Elijovich joined Semmes-Murphey Clinic in 2010 and is an associate professor in the Departments of Neurology and Neurosurgery at the University of Tennessee Health Sciences Center. He also serves as director of neurocritical and neurointerventional surgery for LeBonheur Children's Hospital in the Neurosciences Institute, and as director of the LeBonheur Vascular Anomalies Center.

Raymond Grams, DO specializes in the treatment of ischemic and hemorrhagic strokes, transient ischemic attack, cerebral venous thrombosis, and intra- and extra-cranial atherosclerotic disease. His clinical interests include cardioembolic sources of stroke, arterial dissection and other causes of stroke in young people; evaluation for carotid stenting or endarterectomy; and neurosonology. Dr. Grams has been a co-investigator of nine stroke trials and has published and presented original research on the use of perfusion MRI in acute stroke imaging. He was a clinical instructor at the University of Utah and stroke medical director of Dixie Regional Medical Center—Intermountain Healthcare prior to joining St. Luke's, where he now serves as director of the neurohospitalist program.

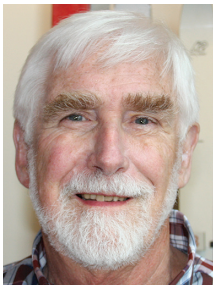
James Grotta, MD joined the University of Texas, Houston, faculty in 1979 and quickly became a leader in acute ischemic stroke management. Shortly after his arrival at the university, he established the stroke program and developed its National Institutes of Health funded fellowship training program; he also played a primary role in many clinical research studies, including the NINDS TPA Stroke Study. In 2013, Dr. Grotta moved his practice to Memorial Hermann Hospital in Houston where he leads the Mobile Stroke Unit Consortium, the nation's first mobile stroke unit to deliver TPA and other stroke therapies to the patient wherever the stroke occurs. He was primary investigator of the PCORI-funded multicenter BEST-MSU study demonstrating that faster

treatment on the MSU results in better clinical outcomes compared to standard management by EMS.

Dr. Jay U. Howington, MD completed his undergraduate work at Vanderbilt University and medical school at the Medical College of Georgia. After completing his residency at Louisiana State University and spending a clinical research year under the tutelage of Frank Culicchia (microsurgery) and Bob Dawson (interventional neuroradiology), he went to Buffalo with Nick Hopkins for two years. Upon the completion of his fellowship, he moved to Savannah to begin his practice and to work as an associate clinical professor in both the Departments of Surgery and Radiology at Mercer University as well as an assistant clinical professor in the Department of Neurosurgery at the Medical College of Georgia. He became involved in organized neurosurgery through the American Association of Neurological Surgeons (AANS)/ Congress of Neurological Surgeons (CNS) and the AANS/CNS Cerebrovascular Section, the Society of NeuroInterventional Surgery, the Neurosurgical Society of America and the Southern Neurosurgical Society, in which he just finished his tenure as president. Dr. Howington served on both the Young Neurosurgeons Committee and the Ethics Committee of the AANS; he currently serves on the Scientific Program Committee. He is a member of the American College of Surgeons and was elected as a governor; he serves both in that capacity as well as a liaison for neurosurgery. Dr. Howington is also a member of the U.S. Food and Drug Administration's committee that evaluates new neurological devices as they move through the FDA approval process.

Brian Jankowitz, MD earned his bachelor's degree from the University of Notre Dame and his medical degree from Temple University School of Medicine. He completed his surgical internship, neurosurgical residency and fellowship in cerebrovascular surgery at the University of Pittsburgh Medical Center. He is board certified in neurological surgery and certified by the Committee on Advanced Subspecialty Training in neuroendovascular surgery. He is division head of the cerebrovascular program at the Perelman School of Medicine at the University of Pennsylvania and primary investigator for numerous clinical trials in the U.S.

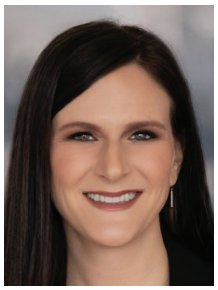
Alexander Khalessi, MD, MBA is chair of the Department of Neurological Surgery; professor of neurological surgery, radiology and neuroscience; and the inaugural Don and Karen Cohn Chancellor's Endowed Chair in Neurosurgery at University of California San Diego. A board-certified neurosurgeon, he specializes in complex cranial surgery, endovascular neurosurgery, stroke care and neurological oncology. Dr. Khalessi holds several national leadership roles, including serving as vice president of the Congress of Neurological Surgeons (CNS), co-chair of the CNS Foundation and on the American Association of Neurological Surgeons/CNS Washington Committee. He also sits on the Board of Governors for the American College of Surgeons. Over the course of his career, Dr. Khalessi has published more than 150 peer-reviewed papers and monographs, 200 abstracts and presentations, and served as principal or co-investigator of more than 25 clinical trials and grants. His research has spurred advances in treatment and surgical approaches. Dr. Khalessi earned his medical degree at Johns Hopkins School of Medicine and completed his neurosurgical residency at the University of Southern California with an enfolded endovascular neurosurgery fellowship at SUNY-Buffalo. He obtained a bachelor's degree in public policy and a master's degree in health services research from Stanford University, and earned a master's degree in business administration from Massachusetts Institute of Technology Sloan School of Management.



John W. Lundin is a lawyer, historian and award-winning author. After a career practicing law in Washington D.C. and Seattle, he turned to researching and writing

about Washington and Idaho history. He is a founding member of the Washington State Ski and Snowboard Museum and works with the National Nordic Museum in Seattle as well as the Center for Regional History at The Community Library in Ketchum. John is the author of four books, all of which have received national awards: Early Skiing on Snoqualmie Pass (2017); Sun Valley, Ketchum and the Wood River Valley (2020); Skiing Sun Valley: a History from Union Pacific to the Holdings (2020); and Ski Jumping in Washington State: a Nordic Tradition (2021). John has also written dozens of essays and articles in a wide variety of publications as well as worked on multiple television programs on history topics. He has given history lectures and book talks at the National Nordic Museum, Washington State Ski and Snowboard Museum, Leif Erikson Hall, English Speakers Union, Ellensburg Museum and elsewhere.

J Mocco, MD, MS has dedicated his career to improving treatment options for acute stroke patients and advancing stroke systems of care. He serves on the Joint Commission Technical Advisory Panel for thrombectomy-capable stroke centers and sits on the American Heart Association/ American Stroke Association Quality Accreditation Science Committee. Dr. Mocco also serves as an international primary investigator for THERAPY and COMPASS, two landmark trials evaluating aspiration thrombectomy for emergent large vessel occlusion. He has published over 500 peer-reviewed papers on stroke care, is immediate past chair of the American Association of Neurological Surgeons/Congress of Neurological Surgeons Cerebrovascular Section and is a board member of the Society of NeuroInterventional Surgery. Dr. Mocco received his medical degree from the Columbia University College of Physicians and Surgeons. He earned his master of science in biostatistics at the Mailman School of Public Health at Columbia University; he completed a residency in neurological surgery at the Neurological Institute of New York and a fellowship in endovascular neurosurgery at the University of Buffalo. He currently serves as a professor and senior system vice chair in the Department of Neurosurgery at Mount Sinai.



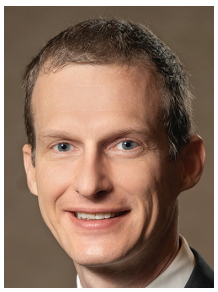
Johanna Morton, MD received her medical degree from Robert Wood Johnson Medical School in 2007 before completing her neurology residency at the Cleveland Clinic in 2011, where she also completed her fellowship in vascular neurology in 2012. Dr. Morton is board certified in neurology with a subspecialty certification in vascular neurology by the American Board of Psychiatry and Neurology. She earned her master of science in health informatics in 2017 at the University of Texas Health Science Center in Houston. Dr. Morton has extensive stroke clinical research experience and has served as both a comprehensive stroke center medical director and a telestroke program medical director at two hospitals in Austin, Texas. She is certified by the American Board of Medical Quality and is a disease-specific care stroke reviewer for the Joint Commission. Dr. Morton has particular interest in stroke systems of care and sits on the Governor's EMS and Trauma Advisory Council Stroke Committee in her home state of Texas.

J. Scott Pannell, MD is a board-certified endovascular surgeon and interventional neuro-radiologist. He is the director of neurointerventional surgery in the Department of Neurological Surgery at UC San Diego Health. Dr. Pannell earned his bachelor's degree in chemistry from the University of Georgia, along with an additional American Chemical Society certification, and his medical degree from the Medical College of Georgia. He completed his fellowships in endovascular neurosurgery and neuroradiology at University of California San Diego School of Medicine; his radiology residency at the University of Alabama at Birmingham; and his internship at Emory University. As an associate professor in the Departments of Neurological Surgery and Radiology, Dr. Pannell instructs medical students, residents and fellows in both departments. He specializes in the minimally invasive catheter-based treatment of blood vessel disorders that can lead to hemorrhagic or ischemic strokes. He is currently involved in multiple National Institutes of Health and industry-

funded research projects investigating cerebrovascular diseases and spinal pain disorders. Dr. Pannell has co-authored more than 50 peer-reviewed journal articles and more than 30 book chapters; he is also a reviewer for multiple journals, including World Neurosurgery and the Journal of Neurointerventional Surgery. He has given over 40 lectures and presentations at national meetings.

Soojin Park, MD is an associate professor of neurology and biomedical informatics at Columbia University, where she also directs the Program for Hospital and Intensive Care Informatics. Dr. Park is also the program director for fellowship training in neurocritical care at NewYork-Presbyterian Hospital, which is affiliated with the medical schools at both Columbia and Cornell; an associate editor for Neurocritical Care; and a board trustee of the Neurocritical Care Foundation. Her research is supported by the National Institute of Neurological Disorders and Stroke; it focuses on the development and clinical evaluation of predictive models to improve timeliness and precision of neurocritical care management using physiologic monitors and digitized medical record data.
Dr. Park received her undergraduate degree from Brown University and her medical degree from Drexel University College of Medicine. She completed her neurology residency at Boston University Medical Center and her stroke and critical care fellowship at Massachusetts General Hospital and Brigham and Women's Hospital.

Jeremy Schabot has worked at Ada County Paramedics since 1997. He currently serves as the deputy chief of training and safety as well as represents Urban Emergency Management System (EMS) on the Idaho Time Sensitive Emergency System Council. Prior to beginning his EMS career, Jeremy earned his bachelor's degree at Cornell University. Throughout his career, Jeremy has been heavily involved in education, serving as a paramedic instructor for Ada County Paramedics and Idaho State University as well as serving as a field training officer for the department. He has also served as a field captain and battalion chief.



Clemens M. Schirmer, MD, PhD, MBA earned his medical degree and a doctorate in medical research from Ludwig Maximilian University of Munich and Harvard Medical School through the Harvard-Munich Alliance for Medical Education. He completed a residency in neurosurgery and a fellowship in interventional neuroradiology at Tufts Medical Center in Boston. Through the TRIUM global program, he was also jointly awarded an MBA by the London School of Economics, École des Hautes Études Commerciales de Paris and New York University Stern School of Business.
Dr. Schirmer is board certified in neurological surgery by the American Board of Neurological Surgery. He holds subspecialty board recognition of focused-practice certificates in neuroendovascular surgery and neurocritical care. At the Geisinger Commonwealth School of Medicine, he currently serves as vice-chair in the Department of Neurosurgery, program director of the neurosurgery residency training program and the CAST neuroendovascular fellowship program, and is a full professor of neurosurgery and neuroscience in the unmodified research track. He also serves as the system director of the Geisinger Comprehensive Stroke Centers and the Division of Cerebrovascular and Endovascular Neurosurgery. Dr. Schirmer's research focuses on quality and variation of care, shared decision-making, genomics, stroke biomarkers, machine learning and data analytics. He serves as the principal investigator of numerous clinical trials exploring stroke and cerebrovascular questions as well as leads Geisinger initiatives, such as ProvenCare® stroke prevention. He is involved in medicine and neurosurgery organizations as chair of the American Association of Neurological Surgeons/Congress of Neurological Surgeons (CNS) Joint Cerebrovascular Section; executive committee member of the CNS; co-chair of the development committee and co-editor of the Congress Quarterly; CNS Foundation board member; chair of the public relations and communications subcommittee of the Joint Washington Committee; and advisor to the American

Medical Association RVS Update Committee. He has also been appointed to MEDCAC and multiple Centers for Medicare and Medicaid Services/Acumen measure development panels.

Stephanie Shawver, BSN, RN, SCRN has served as primary stroke program manager with St. Luke's since 2011. She also moonlights as an Idaho Time Sensitive Emergency System state surveyor who evaluates Idaho hospitals for Level 2 and Level 3 Stroke Center designation; she holds leadership positions at the regional and state levels. Stephanie is currently enrolled in Boise State University's Adult Gerontology Nurse Practitioner Acute Care program and was recently inducted into the Sigma Theta Tau Honor Society of Nursing. Upon graduation in December 2022, Stephanie plans to pursue a career as an advanced practice provider in the field of neurovascular neurology.

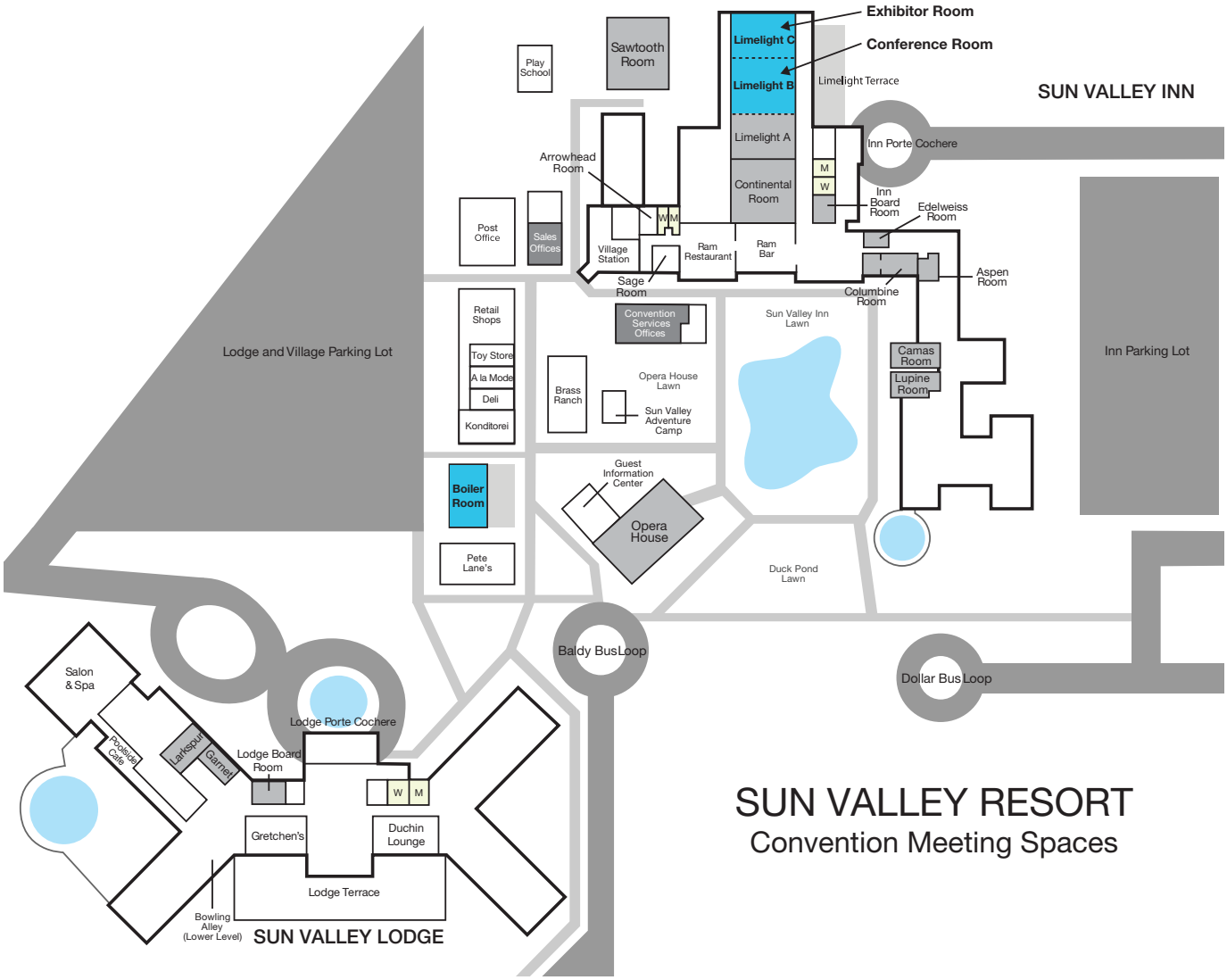
Robert Spetzler, MD is president emeritus and chief executive officer of the Barrow Neurological Institute. He received his bachelor of science from Knox College in Galesburg, Illinois, and his medical degree from Northwestern Medical School in Chicago. He completed a residency in neurosurgery at the University of California, San Francisco, under Charles Wilson, and received board certification in September 1979 from the American Board of Neurological Surgery. He specializes in cerebrovascular disease and skull base tumors, and has been involved in pioneering the technique of hypothermia and cardiac arrest for the treatment of difficult brain lesions. Dr. Spetzler guided the Barrow Neurological Institute from a regional to an internationally recognized center of excellence from 1983 to 2017. Professional societies, including the American College of Surgeons and the Congress of Neurological Surgeons, have honored him many times. In 1994, Dr. Spetzler was chosen to be the Honored Guest of the Congress of Neurological Surgeons. At age 49, he was the youngest recipient of this prestigious honor and, in 2022, he will be the first neurosurgeon to be granted the honor for a second time. The American Association of Neurological Surgeons awarded him the Cushing Medal in 2017 and the Cushing Award for Technical Excellence and Innovation in Neurosurgery in 2021. He is most proud of the more than 200 residents and fellows that trained during his tenure at the Barrow Neurological Institute.

Jeffrey Steinberg, MD is a neurosurgeon who specializes in vascular diseases of the nervous system. Dr. Steinberg completed specialized training in both open and endovascular neurosurgery; this includes traditional open neurosurgical procedures, such as aneurysm clipping, as well as minimally invasive endovascular procedures, such as aneurysm coiling. He also specializes in cerebral bypass procedures. Dr. Steinberg completed his neurosurgery training at the University of California San Diego, where he also completed a fellowship in neuroendovascular surgery. He spent additional time at Stanford Medical Center with a focus on open cerebrovascular neurosurgery and moyamoya disease. During his residency, he received the Kaiser Excellence in Teaching Award. Currently, he is the director of the neurosurgical resident skull base lab, where he has contributed to the development of a novel surgical technique for the treatment of trigeminal neuralgia. Dr. Steinberg has published numerous manuscripts in peer-reviewed journals and regularly presents at national conferences. He is a member of the American Association of Neurological Surgeons, Congress of Neurological Surgeons and the North American Skull Base Society.

Ajay K. Wakhloo, MD, PhD directs the neuro-interventional radiology program at Beth Israel Lahey Health, Lahey Hospital and Medical Center and is a professor at Tufts University Medical School, Boston. He received his medical degree from the University of Mainz, Germany, where he also received his PhD. He completed a fellowship in interventional neuroradiology at the University of Freiburg, Germany, and an endovascular neurosurgery

fellowship in the department of neurosurgery at SUNY-Buffalo. Dr. Wakhloo has been the principal investigator or co-investigator on numerous grants from the National Institutes of Health, American Heart Association, private foundations and industry. He has authored over 500 publications, presentations and abstracts, including two books on stroke treatment, and about 300 peer-reviewed articles and book chapters. Numerous scientific awards, including the Whitaker Bioengineering Research Foundation Award and the German Society of Neuroradiology and Society of Vascular Interventional Neurology Innovation Award, have honored Dr. Wakhloo's work. He was named a Fellow of the American Heart Association and of the Stroke Council in 2009. Dr. Wakhloo pioneered the field of flow diversion and has been the central figure in the commercial development of this technology. He holds several U.S. patents for neurovascular devices as well as founded, and served as CEO and CMO of, various medical device companies. Dr. Wakhloo, throughout his career, has been dedicated to teaching and mentoring faculty, fellows and residents from various disciplines as well as supervising doctoral students and serving as a research adviser to individuals throughout their careers.

Conference and Exhibitor Floor Plan



Speaker Disclosures

A.) Grant/Research Support B.) Consultant C.) Stockholder D.) Speakers Bureau E.) Other

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Pannell	**B.)** Medtronic, Stryker, Cerenovus (J&J)
Park	**A.)** National Institutes of Health **E.)** Associate Editor Salary (Neurocritical Care Journal)
Spetzler	**C.)** Boston Scientific, DicomGrid, EmergMd, Neurovasx, Synergetics, Stereotaxis, RSB Spine, iCo Therapeutics & Katalyst/Kogent **E.)** (Royalty) Stryker, Kogent
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Sun Valley Stroke Conference

Evolving Paradigms for Stroke Care

March 10-13, 2022

NOTES

St. Luke's Stroke Program

St. Luke's Comprehensive Stroke System of Care encompasses our nine hospitals. Three of our sites are Joint Commission Primary Stroke Centers and our main Boise medical center is designated as a Level 1 Stroke Center with the Idaho Time Sensitive Emergency System.

St. Luke's has a robust neuroendovascular program led by four fellowship-trained neuroendovascular specialists, including a dual-fellowship trained neurovascular surgeon. St. Luke's was the first in the country to acquire the ZEISS KINEVO robotic operating microscope and the first in the world to acquire the bkActiv intraoperative ultrasound platform, both of which utilize cutting-edge technology for open cerebrovascular surgical procedures. In 2019, St. Luke's opened a new Siemens advanced biplane hybrid neurovascular operating suite in Boise and a biplane neuroendovascular suite at our Meridian medical center.

St. Luke's utilizes a telestroke network to provide acute stroke evaluation and treatment across its Emergency Departments. This care encompasses intravenous thrombolytic therapy throughout the system as well as standardized evaluation and treatment for transient ischemic attack. Emergent thrombectomy for large vessel occlusion is performed at both the Boise and Meridian medical centers. A neurohospitalist team, including vascular neurology subspecialists, augments this telestroke program systemwide and provides inpatient care in Boise and Meridian. In addition to coordinating care across St. Luke's multiple sites, we have strong collaborative relationships with numerous other regional hospitals and EMS agencies to optimize initial patient care and transport.

Please join us for the Fourth Annual Sun Valley Stroke Conference in 2023. Dates TBD.

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