

Sun Valley Cerebrovascular Conference

Leveraging the Latest Technology To Treat Stroke

January 19-21, 2023



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 Sun Valley Cerebrovascular Conference

Esteemed Colleagues,

Welcome to Idaho and the Wood River Valley! When this meeting was founded in 2019, my goal was to provide provocative discussion and informative education, while also allowing for world-class recreation in a family-friendly environment. Now in our fourth year, we have again assembled thought leaders from across the country to discuss cerebrovascular disease and stroke. The disciplines of neurology, neurosurgery, neuroradiology and cardiology are among those represented. This year, we have rebranded slightly to clarify the focus of the conference on procedural treatments for cerebrovascular disease as well as high-yield medical interventions.

The past several years have seen paradigm-shifting advances in treatment of cerebrovascular disease. Mechanical thrombectomy for stroke is arguably the greatest medical achievement in a generation. Treatment of subdural hematoma and idiopathic intracranial hypertension is being rethought and redefined. This type of progress is best appreciated when we examine the historical context in which it has been made. The meeting opens Thursday evening with accounts from neurology, neurosurgery and radiology pioneers describing the development of novel and revolutionary ideas.

This sets the stage for Friday's focus on real-world solutions for patients who don't necessarily match the criteria on which many landmark trials have been based. Old debates will be revisited,

competing treatment strategies argued and less common scenarios considered. Saturday will focus on technology and systems of care. Discussion topics will include team structures, novel workflows and technological advances coming to fruition.

Partnership with industry is not only critical to advancing devices and 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, breaks 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. Don't miss out on our social events, including an opening reception, daily après-ski refreshments and a family-friendly evening sleigh ride.

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 2024 Sun Valley Cerebrovascular Conference even better.

Sincerely,

Edward A.M. Duckworth, MD, MS, FAANS

On Behalf of SVCC Organizing Committee

Intended Audience

All medical professionals who care for cerebrovascular patients:

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

Learning Objectives

- Review the history of treatments for cerebrovascular disease.
- Describe the latest treatment strategies for cerebrovascular disease.
- Discuss complex cases involving surgical, endovascular, and medical management of stroke and cerebrovascular disease.
- Analyze and discuss the optimization of stroke systems of care.

Conference Check-in

Thursday, January 19

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

Friday, January 20, and Saturday, January 21

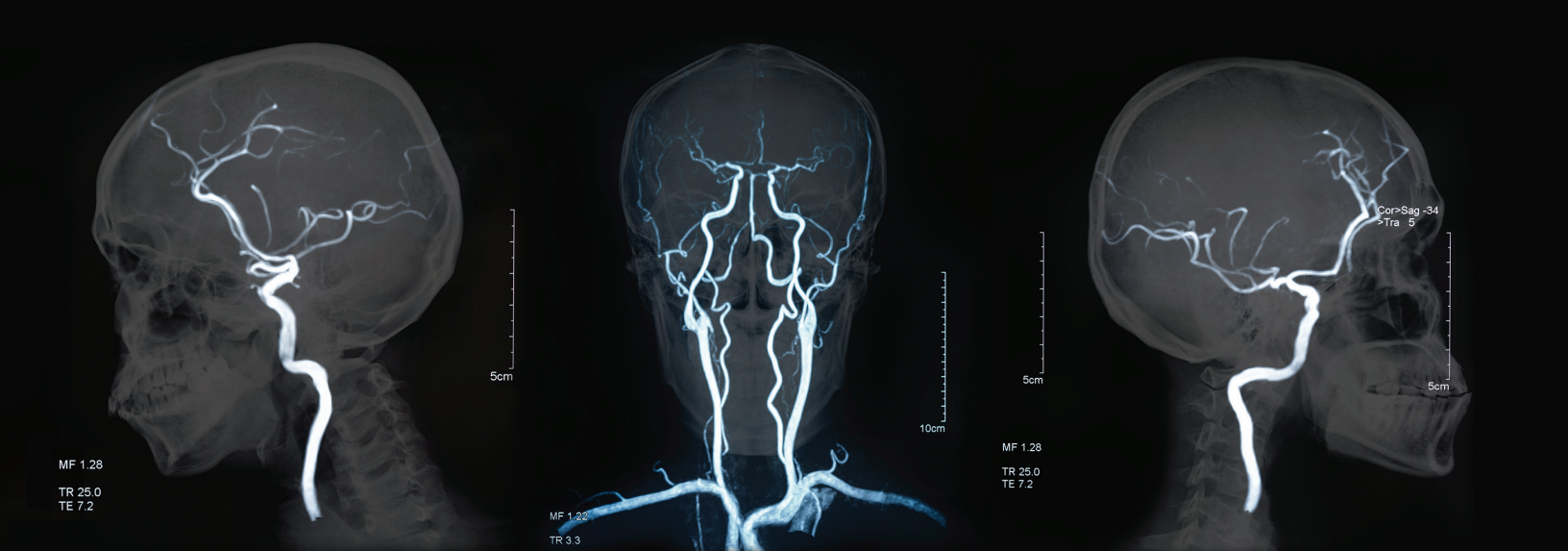
Outside of Limelight B room, 7-8 a.m. and 3-4:30 p.m.

Conference Organizing Committee

Dan Abenroth, MD
Andrei Alexandrov, MD
Anne Alexandrov, PhD, APN
Adam Arthur, MD, MPH
Edward Duckworth, MD, MS
Lucas Eljovich, MD
Alexander Khalessi, MD, MBA
John Perl II, MD

Special thanks to the invaluable contributions of:

Aimee Borders
Monica May
Ben Slee, RN
Loren Walters



Scientific Program

The program is designed to be dynamic, with short lectures in the morning punctuated by roundtable discussions and abstract presentations. These are followed by case presentations, hot topics and head-to-head debates during the evening sessions. The meeting will cover the spectrum of cerebrovascular care, including discussions on the history of stroke, navigating difficult treatment scenarios, examining systems of care, and exploring emerging technology and treatments for hemorrhagic and ischemic stroke.

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

Thursday, January 19, 4-7 p.m.

Ideas That Have Shaped the Course of Stroke Treatment

Moderator: Dr. Edward Duckworth

4-4:20 p.m.	Introduction and Welcome	<i>Dr. Edward Duckworth</i>
4:20-4:55 p.m.	Building an International Cerebrovascular Referral Practice	<i>Dr. Gary Steinberg</i>
4:55-5:30 p.m.	The Evolution of Neuroradiology	<i>Dr. Scott McNally</i>
5:30-5:50 p.m.	Break	
5:50-6:25 p.m.	The Rise and Optimization of Telestroke	<i>Dr. Brett Meyer</i>
6:25-7 p.m.	History of Stroke Treatment and the Influence of Negative Trials	<i>Dr. Alexander Khalessi</i>
7-8:30 p.m.	Opening Reception	

Friday, January 20, 7:30-10:30 a.m.

Navigating Difficult Treatment Scenarios

Moderator: Dr. Lucas Eljovich

7-7:30 a.m.	Breakfast in Limelight C	
7:30-7:53 a.m.	Surgical Management of Spontaneous Intracerebral Hemorrhage: Insights From Randomized, Controlled Trials	Dr. Navaz Karanjia
7:53-8:16 a.m.	Management of Unruptured Intracranial Aneurysms: Correlation of Scoring Systems and Real-World Practice	Dr. Jeff Steinberg
8:16-8:39 a.m.	Balancing Innovation With Evidence-Based Practice in the Implementation of New Devices	Dr. Brian Jankowitz
8:39-9:12 a.m.	Roundtable Discussion: AVM Treatment Since Aruba	Drs. Adam Arthur, Jay Howington, Jeff Steinberg, Andrei Alexandrov and Alex Norbash
9:12-9:27 a.m.	Break	
9:27-10:30 a.m.	Abstract Session One	
10:30 a.m.-4 p.m.	Free Time for Recreation	

Friday, January 20, 4-7 p.m.

Interactive Case Presentations, Hot Topics and Debates

Moderator: Dr. Alexander Khalessi

3-4 p.m.	Après-Ski With Exhibitors – Sponsored by Medtronic	
4-4:30 p.m.	Head-to-Head Debate: Medical vs. Procedural Treatment of Asymptomatic Carotid Stenosis	Drs. Andrei Alexandrov and Jeff Steinberg
4:30-4:51 p.m.	Hot Topic: Atrial Cardiomyopathy	Dr. David Hinchman
4:51-5:12 p.m.	Hot Topic: Anesthesia for Thrombectomy Revisited	Dr. John Perl II
5:12-5:30 p.m.	Interactive Case	Dr. Adam Arthur
5:30-5:48 p.m.	Interactive Case	Dr. Edward Duckworth
5:48-6:06 p.m.	Interactive Case	Dr. Brian Jankowitz
6:06-6:24 p.m.	Interactive Case	Dr. Andrei Alexandrov
6:24-6:42 p.m.	Interactive Case	Dr. Dan Abenroth
6:42-7 p.m.	Interactive Case	Dr. Alexander Khalessi

Saturday, January 21, 7:30-10:30 a.m.

Using Systems and Technology To Improve Outcomes

Moderator: Dr. Adam Arthur

7-7:30 a.m.	Breakfast in Limelight C	
7:30-7:53 a.m.	Optimizing Outcomes in Moyamoya Disease	Dr. Gary Steinberg
7:53-8:16 a.m.	Optimal Blood-Pressure Management in Stroke	Dr. Dawn Meyer
8:16-8:39 a.m.	Limitations in the Access to Cerebrovascular Care Outside of the Ivory Tower	Dr. Jay Howington
8:39-9:12 a.m.	Round Table Discussion: Assembling Thrombectomy Teams: Role of Locums, Body Interventional Radiology and Cardiology	Drs. Alexander Khalessi, John Perl II, Lucas Elijovich and Brian Jankowitz
9:12-9:27 a.m.	Break	
9:27-10:30 a.m.	Abstract Session Two	
10:30 a.m.-4 p.m.	Free Time for Recreation	

Saturday, January 21, 4-7 p.m.

Interactive Case Presentations, Hot Topics and Debates

Moderator: Dr. Andrei Alexandrov

3-4 p.m.	Après-Ski With Exhibitors	
4-4:30 p.m.	Head-to-Head Debate: Radial First vs. Radial Sometimes Moderated by Dr. Adam Arthur	Drs. Brian Jankowitz and Lucas Elijovich
4:30-4:51 p.m.	Hot Topic: How Vessel Wall Imaging Can Affect Decision-Making	Dr. Scott McNally
4:51-5:12 p.m.	Hot Topic: High-Resolution CTA on Mobile Stroke Unit	Dr. Anne Alexandrov
5:12-5:30 p.m.	Interactive Case	Dr. Lucas Elijovich
5:30-5:48 p.m.	Interactive Case	Dr. Ray Grams
5:48-6:06 p.m.	Interactive Case	Dr. Navaz Karanjia
6:06-6:24 p.m.	Interactive Case	Dr. Anne Alexandrov
6:24-6:42 p.m.	Interactive Case	Dr. John Perl II
6:42-7 p.m.	Interactive Case	Dr. Dawn Meyer
7:30-8:30 p.m.	Social Event: Family Night Sleigh Rides	

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 14 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 14 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. Access using the URL or 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/SVCC.
- Text SVCC to 22333.

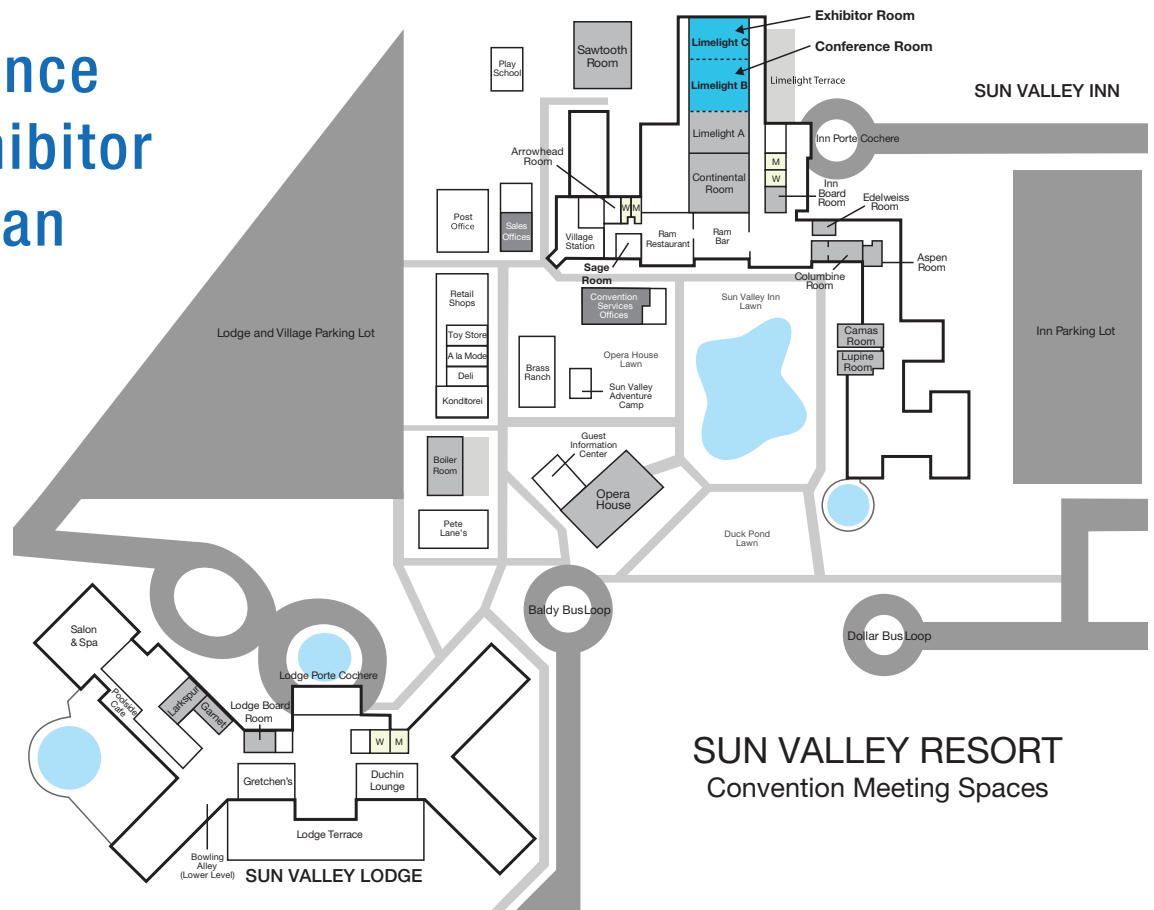
Breakfast and Refreshments: Enjoy breakfast each morning at 7 a.m. and après-ski refreshments each afternoon at 3 p.m. in Limelight C with the exhibitors.

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

Access the post-conference evaluation at surveymonkey.com/r/G23QD3X or by scanning the QR code.



Conference and Exhibitor Floor Plan



Planned Social Events



Thursday, January 19
7 to 8:30 p.m. – Welcome reception with hors d’oeuvres and hosted bar in Limelight C.



Friday, January 20
3 to 4 p.m. – Après-ski with exhibitors and speakers in Limelight C.



Saturday, January 21
3 to 4 p.m. – Après-ski with exhibitors and speakers in Limelight C.
7:30 to 8:30 p.m. – Family Night Sleigh Rides.



Sun Valley Cerebrovascular 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 and Nordic skiing. For those of you who don’t want to tackle the snowy terrain, you can find cultural activities and shopping in

Ketchum and other towns in the surrounding Wood River Valley. 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.

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



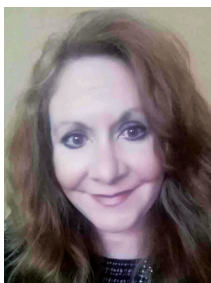
Daniel Abenroth, MD, is the clinical system director for the St. Luke's Stroke Program, the largest medical system and stroke program in Idaho. As clinical director, he broadly oversees the medical management of ischemic stroke, hemorrhagic stroke and associated

cerebrovascular care spanning nine Emergency Departments, three Joint Commission Stroke Centers and outpatient care. He also works as a neurohospitalist for St. Luke's. He attended Brigham Young University for undergraduate studies, Michigan State University for medical school, University of Utah for his neurology residency and the Medical University of South Carolina for his vascular neurology fellowship. Dr. Abenroth's clinical interests include intracranial atherosclerosis, critical care management of cerebrovascular disease and stroke systems of care.



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 Connolly as in the top 1% of specialists in neurology from 2011 to 2017.



Anne Alexandrov, PhD, APN, 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 in acute stroke. Through this program, she 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's Department of Neurosurgery and 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.



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

a voluntary clinical professor at UC San Diego. Dr. Duckworth holds the distinction of being dual fellowship-trained: 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 expertise in the treatment of complex aneurysms, arteriovenous malformations, carotid disease and cerebral hypoperfusion.



Lucas Eljovich, MD, earned his bachelor's degree in biology from Tufts University and his medical degree from the University of Texas at 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. Eljovich joined Semmes Murphey Clinic in 2010 and is a 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.



David Hinchman, MD, is the medical director of cardiovascular quality and cardiovascular research for St. Luke's. He is a fellow of the American College of Cardiology and is board-certified in cardiovascular disease. He specializes in cardiac prevention, stress testing,

hyperlipidemia, anticoagulation and research. Dr. Hinchman earned his medical degree from the University of Colorado School of Medicine. He completed his residency at the University of California, San Francisco, and his fellowship at the University of Washington School of Medicine.



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.

Dr. Howington became involved in organized neurosurgery through the American Association of Neurological Surgeons/Congress of Neurological Surgeons 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. He 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 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 United States.



Navaz Karanjia, MD, is a board-certified neurointensivist and neurologist. She earned her undergraduate degree from Harvard University and her medical degree from Stanford University School of Medicine, then completed a fellowship in neurocritical care at the

Johns Hopkins University School of Medicine and a residency in neurology at UCLA School of Medicine. She is the founding medical director of UC San Diego Health's Neurocritical Care Program and neuro-intensive care units and is a professor in the Departments of Neurosciences, Anesthesiology and Neurological Surgery at UC San Diego School of Medicine. She is board-certified in neurology and holds certification in neurocritical care from the United Council for Neurologic Subspecialties.

Dr. Karanjia's research interests include early detection of neurologic deterioration, noninvasive intracranial pressure and cerebral metabolism monitoring methods, and quality implementation science and improvement practice. She has published several book chapters and articles in leading journals, including *Neurocritical Care* and *Archives of Neurology*, and developed quality measures for the American Academy of Neurology and Neurocritical Care Society. Dr. Karanjia is a member of many professional organizations, including the American Heart Association/American Stroke Association, the Society of Critical Care Medicine, the Neurocritical Care Society and the American Academy of Neurology. She was the founding chair of the NCS's Quality Committee and is currently on the board of directors of SCCM's Southern California chapter.



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 UC San Diego. A board-certified

neurosurgeon, he specializes in complex cranial surgery, endovascular neurosurgery, stroke care and neurological oncology. Dr. Khalessi holds several global and national leadership roles. He is the current president-elect of the Congress of Neurological Surgeons and in his third term 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, 230 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 the Johns Hopkins University School of Medicine and completed his neurosurgical residency at the University of Southern California with an enrolled 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. He earned a master's degree in business administration from Massachusetts Institute of Technology Sloan School of Management.



Scott McNally, MD, PhD, is an associate professor in neuroradiology at the University of Utah in the Department of Radiology and Imaging Sciences. His clinical and research interests are in using vessel-wall imaging to better diagnose and treat unstable plaque

and vascular pathology. This is a direct extension of his PhD research at Emory University in vascular biology and oxidative stress. His neurovascular research group is actively investigating imaging markers of vascular pathology and its downstream consequences in multicenter trials funded by the NIH and Veterans Affairs.



Brett Meyer, MD, is a stroke neurologist, co-director of the Stroke Center at UC San Diego Medical Center and a professor of clinical neurosciences in the Department of Neurosciences at UC San Diego. He is also medical director for the UC San Diego

Department of Telemedicine; in this role, he is responsible for the clinical development, implementation and medical oversight of numerous telehealth initiatives for primary care and all specialties throughout the entire health system as well as for external partners. Dr. Meyer is board-certified in neurology and subspecialty board-certified in cerebrovascular diseases by the American Board of Psychiatry and Neurology. He specializes in acute cerebrovascular disease therapies as well as technological evaluation and treatment techniques.

Dr. Meyer's clinical research is varied, encompassing clinical stroke scale evaluations; acute and hyper-acute therapies for stroke; and internet applications of telemedicine for the evaluation and treatment of stroke. He was the principal investigator for an NIH-SPOTRIAS clinical trial assessing the use of telemedicine in acute stroke management. He is currently the principal investigator of a Regional Coordinating Center for NIH StrokeNet. Dr. Meyer has presented at major academic meetings and has been published in numerous journals including *Lancet Neurology*, *Annals of Neurology*, *Stroke*, *Neurology*, *The International Journal of Stroke*, *The Journal of Stroke and Cerebrovascular Diseases*, *Academic Medicine*, and *Quality Management in Healthcare*.



Dawn Meyer, PhD, FNP-C, is an associate professor in the Neurosciences Department at the University of California San Diego School of Medicine and a member of the UC San Diego Stroke Center. She is a nurse practitioner and has been in practice for 20 years as a

stroke hospitalist. She trained in vascular neurology at the University of Texas Health Science Center at Houston; completed her PhD at UCLA, focusing on antiplatelets and sex differences in a preclinical model of stroke; and has been a faculty member at UC San Diego School of Medicine for 11 years.

The overarching focus of her research is the

interaction of platelet aggregation, sex differences and depression in acute stroke. Her daily clinical practice focuses on the acute diagnosis, treatment and risk-factor modification in ischemic stroke, transient ischemic attack and intracerebral hemorrhage patients. She was the first to show that antiplatelet loading improved stroke behavioral outcome in a preclinical model of ischemic stroke. In 2013, she was elected as a fellow to the American Heart Association. She has published in top-tier stroke journals and been a co-investigator in over 40 clinical stroke studies, site primary investigator in two NIH studies and primary investigator of two NIH grants. Her current work focuses on the entire spectrum of stroke from translational to outcome studies with emphasis on antiplatelets.



John Perl II, MD, is the director of neurointervention at St. Luke's and formerly served as its neuroscience medical director. He was instrumental in establishing the stroke program and the endovascular neurosurgical and interventional neuroradiology

program for the health system. He completed his diagnostic radiology residency at the University of Alabama and his neuroradiology fellowship at the Cleveland Clinic Foundation. His neurointerventional radiology training was at the University of Wisconsin under one of the founders of neurointerventional therapies, Dr. Charlie Strothers. Prior to coming to St. Luke's in 2010, Dr. Perl worked at Abbott Northwestern Hospital in Minneapolis and at the Cleveland Clinic Foundation. In his previous roles, he was active in fellowship education and translational science as well as actively developed some of the neurointerventional tools that are still in use today.



Gary K. Steinberg, MD, PhD, served as chair of the Department of Neurosurgery at Stanford from 1995 to 2020 and holds the Bernard and Ronni Lacroute-William Randolph Hearst Endowed Chair of Neurosurgery and the Neurosciences. Dr. Steinberg

maintains a busy clinical practice specializing in cerebrovascular surgery. His clinical research focuses on developing innovative surgical, endovascular and

radiosurgical approaches for treating patients with difficult intracranial aneurysms, complex vascular malformations and occlusive cerebrovascular disorders including moyamoya disease.

Dr. Steinberg graduated from Yale University, then the Medical Scientist Training Program at Stanford University School of Medicine with an MD and a PhD in neurosciences in 1980. He completed his surgical internship and residency in neurological surgery at Stanford under John Hanbery. In 1987, Dr. Steinberg joined the faculty at Stanford. He founded the Stanford Stroke Center in 1991, where he is currently the co-director, and is the founder and director of the Stanford Moyamoya Center. He also spearheaded several early-phase clinical trials of stem cell transplantation for chronic stroke and subacute spinal cord injury. Dr. Steinberg is heavily involved in teaching; has published over 425 peer-reviewed articles and 135 book and video chapters; and edited five books. He has received grants as principal investigator from the AANS NREF, American Heart Association and California Institute for Regenerative Medicine as well as held continuous NIH funding since 1987. Dr. Steinberg has received numerous honors and awards over his career, served internationally as a visiting professor at several academic institutions and given more than 600 talks at scientific meetings throughout the world. He has been a member of NIH NINDS Study Sections and the NIH NASCET Monitoring Committee as well as served on the editorial boards of national and international journals.



Jeffrey Steinberg, MD, is a neurosurgeon at UC San Diego Health 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 and a fellowship in neuroendovascular surgery at UC San Diego School of Medicine. 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.



Speaker Disclosures

A.) Grant/Research Support

B.) Consultant

C.) Stockholder

D.) Speakers Bureau

E.) Other

NAME	DISCLOSURE
Dan Abenroth	None
Andrei Alexandrov	B.) NovaSignal, NeuraStasis
Anne Alexandrov	None
Adam Arthur	A.) Arsenal, Balt, Medtronic, MicroVention, Penumbra, Siemens B.) Arsenal, Balt, Johnson & Johnson, Medtronic, MicroVention, Penumbra, Perfuze, Scientia Vascular, Siemens-Healthineers, Stryker C.) Perfuze, Azimuth, Bendit, Cerebrotech, Endostream, Magneto, Mentice, Neurogami, Neuros, RevBio, Viz.ai, Serenity, Synchron, Tulavi, Vastrax
Edward Duckworth	B.) BK Medical
Lucas Elijevich	B.) Balt USA, CERENOVUS, Medtronic/Covidien, MicroVention, Penumbra, Scientia Vascular, Siemens Healthcare, Stryker Neurovascular, Viz.ai
Raymond Grams	None
David Hinchman	D.) Bristol Myers Squibb
Jay Howington	B.) Chemence Medical
Brian Jankowitz	None
Navaz Karanjia	None
Alexander Khalessi	B.) Ospitek, Sensorydata, XENSE, NeuroventX, Medtronic, Route 92/SUMMIT MAX DMC, Stryker
Scott McNally	None
Brett Meyer	None
Dawn Meyer	B.) Chiesi D.) Chiesi, AstraZeneca
John Perl II	None
Gary Steinberg	B.) SanBio, ZEISS, Surgical Theater E.) Peter Lazic US (patents)
Jeff Steinberg	None

Commercial Support and Exhibitors

The Sun Valley Cerebrovascular Conference committee gratefully acknowledges the following entities for their generous support of this event.

PLATINUM

RapidAI
Siemens-Healthineers

GOLD

CERENOVUS
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Stryker

STANDARD

Alexion	EOSolutions	Penumbra
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Balt USA	Janssen	Rapid Medical
Brainlab	MicroVention	Sutter Medical Technologies USA
Chiesi USA, Inc.	NeurOptics	Viz.ai
DAY Surgical	NICO	

Educational Grants

The Sun Valley Cerebrovascular Conference committee gratefully acknowledges the following company for its educational support of this event.

Medtronic

Sun Valley Cerebrovascular Conference

Leveraging the Latest Technology To Treat Stroke

January 19-21, 2023

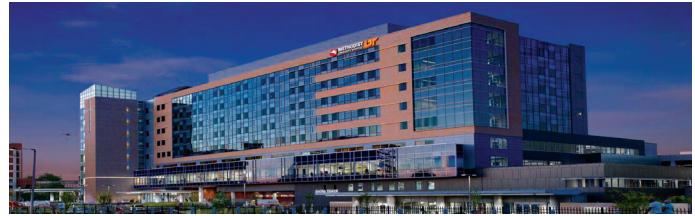
NOTES

The University of Tennessee Health Science Center and Semmes Murphey Clinic

The University of Tennessee Health Science Center and Semmes Murphey Clinic partner to create one of the largest neurovascular groups in the country. The multispecialty program is shaped by the Memphis area community it serves, where the stroke rate is 37% higher than the national average, and utilizes a wealth of knowledge, experience and diversity of thought to fight the terrible damage stroke brings to patients and their families.

Covering five hospitals, the UTHSC/SMC cerebrovascular team's exceptional level of expertise is built through experience, handling one of the highest patient volumes in the United States. It delivers tPA and mechanical thrombectomy to the largest number of patients in the nation.

This environment enriches the quality of the neurology and neurosurgery residency programs and the numerous fellowship programs, which include vascular neurology, neurocritical care, open vascular and vascular neurosurgery; enhances the quality of the clinical research program with numerous NIH-funded research efforts; and provides the platform to develop ambitious solutions in stroke-care technology and methods. In 2016, the program deployed an IAC-accredited mobile



stroke unit with advanced CT imaging capabilities, the first of its kind.

UTHSC/SMC's cerebrovascular team was also heavily involved in the clinical trials for the first deployment of the WEB Aneurysm Embolization System. The system boasts a significant improvement in safety and recovery time for aneurysm patients undergoing surgery.

With valuable lessons learned from caring for patients and dedication to world-class care, UTHSC/SMC's cerebrovascular team serves its community diligently and contributes to the advancement of knowledge and treatment.



Neurological Surgery at UC San Diego Health

Delivering the Latest in Research-Informed Care

The UC San Diego Department of Neurological Surgery provides the full range of contemporary neurosurgical practice and delivers the highest-quality neurosurgical care to people around the world. In addition, our Center for the Future of Surgery—an international destination for state-of-the-art surgical training—serves as a clearinghouse for the research and development of new technologies.

National Recognition

We're proud to have earned several distinctions that make us a care destination, including:

- #21 in the nation for best neurosurgery and neurology care (U.S. News & World Report).
- #3 in the nation for quality (Vizient).
- First health organization in California to receive advanced certification in spine surgery by The Joint Commission.
- Region's only NCI-Designated Cancer Center.
- Level 4 Epilepsy Center.
- Region's first Level I Trauma Center.
- Two Comprehensive Stroke Centers.
- Region's only intraoperative MRI.
- World-class skull base surgery program.

Advanced Treatment Options

Our neurosurgeons are experts in using innovative technology and therapies to deliver the best possible treatment outcomes, including:

- Minimally invasive surgery.
- Intraoperative MRI.
- Robotic-assisted brain surgery.
- Stereotactic brain surgery.
- Awake brain surgery.
- Deep brain stimulation.
- Angiography and endovascular therapies.

UC San Diego
School of Medicine

For more information, visit neurosurgery.ucsd.edu or follow us on Twitter or Instagram @UCSDNeuroSurg.





St. Luke's Stroke Program

St. Luke's Stroke Program comprises a comprehensive team of professionals that spans nine hospitals. Three hospitals are Joint Commission Primary Stroke Centers, and the main Boise medical center is designated as a Level 1 Stroke Center with the Idaho Time Sensitive Emergency System.

St. Luke's neurointerventional team possesses depth and breadth of interventional neuroradiology experience as well as a dual fellowship-trained cerebrovascular surgeon. St. Luke's was the first in the country to acquire the ZEISS KINEVO 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. Neuroendovascular procedures are performed at both the Boise and Meridian medical centers. The Boise hospital features the state-of-the-art Siemens icono biplane platform as part of an advanced hybrid neurovascular operating suite.

St. Luke's utilizes a telestroke network to provide acute stroke evaluation and treatment across its Emergency Department network. 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 the St. Luke's system, the stroke program has strong collaborative relationships with numerous other regional hospitals and EMS agencies to optimize patient care and transport.



Please join us for the 2024 Sun Valley Cerebrovascular Conference, February 1-3, 2024.