2024 Barrow Neurological Institute

Neuroscience Symposium

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Joint 8th

ISMINS and IANA Congress

May 15-17, 2024

Goldman Auditorium and Sonntag Pavilion
Barrow Neurological Institute
350 West Thomas Road, Phoenix, AZ

Barrow Neurological Institute

ISMINS International Society on Minimally Invasive Neurosurgery

International Academy of Neurosurgical Anatomy

W E L C O M E

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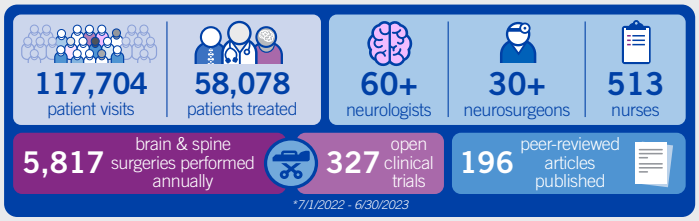
Barrow Neurological Institute at Dignity Health St. Joseph's Hospital and Medical Center in Phoenix, Arizona is an international leader in the treatment, research, and education of brain and spinal diseases, conditions, and injuries. Led by Barrow President and CEO Michael T. Lawton, MD, one of the world's top neurosurgeons, the Institute performs more neurosurgical procedures annually than any other facility in the United States.



Barrow Neurological Institute is located on the Dignity Health St. Joseph's Hospital and Medical Center campus in the heart of Phoenix, Arizona. It's approximately seven miles from the Phoenix Sky Harbor Airport, in a "top metropolitan market."

The Institute's 430,300-square-foot, 176-bed Robert F. Spetzler Neuroscience Tower is the largest neuroscience center in the nation. It features 11 of the most advanced dedicated neurosurgical operating rooms in the world, a 64-bed designated Neuro-Intensive Care Unit, and a 32-bed state-of-the art neuro-telemetry unit. All rooms in the neuroscience tower are private and spacious with ample room for an adult guest to stay overnight with the patient.

Additionally, Barrow is home to 46 inpatient neuro-rehabilitation beds.

Dear Friends and Colleagues,

Welcome to the Joint 8th ISMINS and IANA Congress, held in parallel with the 2024 Barrow Neuroscience Symposium in Phoenix, Arizona. It is a privilege to extend a warm greeting to all participants and contributors.

I wish to express my sincere appreciation to Professor Michael Lawton for presiding over this joint 8th ISMINS and IANA Congress. Your leadership adds immense value to our shared pursuit of advancing minimally invasive neurosurgery.

Heartfelt thanks to the dedicated members of ISMINS whose active engagement has shaped this congress. Your commitment to excellence in neurosurgery is the driving force behind our collective success.

A special acknowledgment goes to Professor Vladimir Benes and the team from the International Academy of Neurosurgical Anatomy (IANA) for their valuable contributions. Your expertise enhances the depth and diversity of knowledge shared during this event.

Our society aims to develop minimally invasive neurosurgery across all disciplines, from the most basic techniques to the most advanced ones. We also wish to provide new and novel concepts in improving surgical treatments and outcomes. With minimally invasive techniques, we can accomplish effective approaches with minimal tissue traumatization and the preservation of neurological functions.

We at ISMINS make it our goal to support young neurosurgeons around the world who are interested in minimally invasive neurosurgery—to train them, to educate them, and to hone their skills.

May these three days be a catalyst for collaboration, idea exchange, and groundbreaking advancements in our field. Thank you all for your participation, and I look forward to a fruitful and enriching congress.

Yours sincerely,

Professor Yoko Kato, MD, PhD
President, ISMINS

Neuroscience Publications 40th Anniversary

Neuroscience Publications (Neuropub) was established by Dr. Robert F. Spetzler in 1983. On accepting the position at Barrow, he requested support for a publications office to create the BNI Quarterly. The Quarterly, which ran from 1985 to 2013, was Barrow's own neurosurgical journal and instrumental in promoting Barrow's research and reputation. The fledgling publication was staffed by Georgia Frederic (editor-in-chief), Peggy Powers (assistant to the editor), and Steven J. Harrison (medical art editor).

Shelley Kick joined the department as manager and editor in the 1990s, growing the team and establishing Neuropub's high standards. Mark Schornak joined as medical illustrator in 1991, shepherding the shift from traditional to digital media as the millennium approached. In the early 2000s, the team added 3D animation and multimedia to its offerings.

In 2014, Mark Schornak took over as manager, soon doubling both the size of the staff and the department's productivity. The Lawton era brought a focus on educational surgical videos and complex 2D and 3D storytelling. The group added the role of senior technical artist, filled by Barrow medical animator and tech wizard Michael Hickman, to oversee the resulting advanced workflow and technology.

The 2020s have brought more technological advancement, including app development, collaborations with the Barrow Innovation Center, and the establishment of the Sonntag Spine Center Virtual Reality Laboratory. This resident-led initiative creates virtual- and mixed-reality platforms to augment surgical training at Barrow.

In 2022, Kristen Larson Keil, a longtime Barrow medical illustrator, took on the manager role. The following year, the department moved to a custom-designed office space, which houses its 22 employees and a new $1 million state-of-the-art animation render farm and supercomputer.

Thanks to Dr. Spetzler's vision and the ongoing support of Barrow leadership, Neuroscience Publications leads the academic publishing industry in author services focused entirely on the neurosciences, providing editorial and media expertise to help residents, fellows, attending physicians, and researchers advance medicine through research, education, and innovation.

Dear Friends,

The congress of minimal invasive surgery with the participation of International Academy for Neurosurgical Anatomy is perfectly logical combination. It is obviously impossible to enjoy minimally invasive procedures without deep and detailed knowledge of neuroanatomy. We shall enjoy pure anatomical lectures, both skull base and white matter, which will be followed by clinical lectures based on surgical neuroanatomy. I am sure the combination will be appreciated by the audience, and we all believe the discussions will be rich and exciting. Hoping to see you in Phoenix this coming May.

Vladimír Beneš, MD

IANA

The **International Society of Minimally Invasive Neurosurgery (ISMINS)** was founded in 2011 by Yoko Kato, MD, PhD, to coordinate efforts in developing minimally invasive neurosurgery. The international scientific society encourages research and development of minimally invasive techniques, based on modern technologies that could reduce the risks of conventional procedures in patients. The Society's goal is to support young neurosurgeons globally who are interested in minimally invasive neurosurgery through training, education, and development of skills.

The **International Academy of Neurosurgical Anatomy (IANA)** is an international collaboration of expert neurosurgeons committed to providing world-class neurosurgical education. The Academy is non-profit organization that promotes education and research to enhance the surgical skills of international young neurosurgeons and trainees with an emphasis on neuroanatomy.

Keynote Speakers

Kee B. Park, MD obtained his medical degree from the Rutgers University in New Jersey and trained in neurosurgery at the Temple University Hospital in Philadelphia, Pennsylvania.

In 2013, he volunteered with the World Federation of Neurosurgical Societies and the Foundation for International Education in Neurological Surgery to support Cambodian neurosurgeons. As a Consultant in Neurosurgery at the Preah Kossamak Hospital in Phnom Penh and head of the Cambodia Neurosurgery Support Project, he taught neurosurgery and conducted research in head and spine injuries. Prior to Cambodia, he was the Director of Spine Surgery at the Myungsung Christian Medical Center in Addis Ababa, Ethiopia (2009 to 2013).

Dr. Park is also the Director of the North Korea Program at the Korean American Medical Association. He leads the collaboration between US and DPRK physicians. Since 2007, he has made 18 visits to DPRK, most recently in May 2018.

Before joining the faculty at Harvard Medical School, he worked under Prof. John G. Meara at the Program in Global Surgery and Social Change as the Paul Farmer Global Surgery Scholar. The two went on to become part of the founding members of The Global Surgery Foundation which facilitates collaboration with other entities such as the WHO, NGOs and UN member states diplomatic missions, in an effort to increase surgical capacity in those countries which need the most assistance.

Dr. Park is a consultant for the World Health Organization and serves on the WHO Expert Advisory Panel on Surgical Care and Anesthesia. In this capacity, he advocates for and assists in the development of national surgical plans by the Member States.

He is a diplomate of the American Board of Neurological Surgery, a member of the Advisory Committee for the Foundation of the World Federation of Neurosurgical Societies, member of the National Committee on North Korea, and member of Council of Korean Americans.

Robert F. Spetzler, MD, is a world-renowned neurosurgeon who specializes in cerebrovascular disease and skull base tumors. He has been involved in pioneering the technique of hypothermia and cardiac arrest for the treatment of difficult brain lesions. He has been honored many times by professional societies, including the American College of Surgeons and the Congress of Neurological Surgeons. In 1994, Dr. Spetzler was chosen to be the Honored Guest of Congress of Neurological Surgeons. At age 49, he was the youngest recipient of this prestigious honor.

Dr. Spetzler was born in Stierhoefstetten, Germany, and moved to the United States at the age of 11. He received his B.S. from Knox College in Galesburg, Illinois, and his doctorate of medicine from Northwestern Medical School in Chicago. His postgraduate training was completed at Wesley Memorial Hospital–Northwestern in Chicago. He completed a residency in neurosurgery at the University of California – San Francisco. He received board certification in September 1979 from the American Board of Neurological Surgery.

In 1983 Dr. Spetzler left his position as associate professor of neurosurgery at Case Western Reserve University School of Medicine in Cleveland to assume a position as chair of the Department of Neurosurgery at Barrow Neurological Institute at Dignity Health St. Joseph's Hospital and Medical Center in Phoenix. He served as president and CEO of Barrow from 1986 to 2017. He is also emeritus chair of neurosurgery at the Phoenix campus of The University of Arizona College of Medicine.

Dr. Spetzler has published more than 300 articles and 180 book chapters in the neuroscience literature. He has co-edited a number of neurosurgical textbooks, including the Color Atlas of Microneurosurgery.

Volker K.H. Sonntag, MD, is an emeritus professor of neurosurgery at Barrow Neurological Institute.

Dr. Sonntag specialized in spine surgery and is regarded as a pioneer in the field, particularly for his innovative work in spinal instrumentation and his successes in treating the cervical spine. In 1989, he made international headlines when he reattached a 10-year-old boy's skull to his spine after the ligaments connecting them were severed in a bicycle-truck crash.

Dr. Sonntag remains a member of the American Academy of Neurological Surgery, the American Association of Neurological Surgeons, the Congress of Neurological Surgeons, the Neurosurgical Society of America, and The Society of Neurological Surgeons. He holds some of the most prestigious awards in the field of neurosurgery, including Honored Guest of the Congress of Neurological Surgeons in 2002.

Dr. Sonntag earned his medical degree from the University of Arizona School of Medicine in Tucson. He completed his general surgery internship at the University of Arizona Medical Center and his neurosurgery residency at Tufts Medical Center in Boston.

Dr. Sonntag has co-authored seven books, contributed more than 100 chapters to books on neurosurgery, and has published some 600 articles. In 2017, he published his memoir entitled, "Backbone: The Life and Game-Changing Career of a Spinal Neurosurgeon." Additionally, he has given more than 1000 presentations at professional meetings and has been honored with numerous visiting professorships.

The Sonntag Spine Center at Barrow continues the pioneering legacy of Dr. Sonntag. The Center is dedicated to advancing the treatment of spinal conditions through collaborative research, trailblazing innovation, and global education.

Symposium Leadership

Yoko Kato, MD, PhD, is the President of the International Society on Minimally Invasive Neurosurgery.

She is the professor and chair of the Department of Neurosurgery at Fujita Health University Bantane Hospital, where she also serves as the head of Fujita Health University Bantane Hospital and as the Stroke Center assistant director.

Her other professional leadership positions include secretary and consortium member of the WFNS Foundation, President of the Asian Congress of Neurological Surgeons, Chair of the WFNS Fundraising Committee, Editor-in-Chief of the Asian Journal of Neurosurgery, and Executive Board Member of the Japan Neurosurgical Society.

She received her medical degree from Aichi Medical University and completed her neurosurgery residency at Aichi Medical University.

Vladimír Beneš, MD, is President of the International Academy of Neurosurgical Anatomy.

Dr. Beneš is the Chairman of the Institute of Clinical Neurodisciplines at Military University Hospital in Prague and a neurosurgeon in the hospital's Department of Neurosurgery and Neurooncology. The hospital is affiliated with Charles University's school of medicine and serves as the training, educational, and professional medical facility of the Army of the Czech Republic. Dr. Beneš is a former member of the Army himself, achieving the rank of colonel before his retirement.

Dr. Beneš earned his medical degree from First Faculty of Medicine of Charles University, where he now holds a professor appointment. He completed his neurosurgery residency training at Masaryk Hospital in Ústí nad Labem.

Dr. Beneš has authored 220 publications and 350 abstracts, and he has served as reviewer for several prominent journals, including "Neurosurgery," "World Neurosurgery," and "Acta Neurochirurgica." His society memberships include the World Federation of Neurosurgical Societies, the American Association of Neurological Surgeons, and the Congress of Neurological Surgeons. He is a past president of the European Association of Neurological Societies and the Czech Neurosurgical Society.

Michael T. Lawton, MD, is President of the 8th joint congress of the International Society on Minimally Invasive Neurosurgery (ISMINS) and the International Academy of Neurosurgical Anatomy (IANA).

Dr. Lawton is the President and CEO of Barrow Neurological Institute, Robert F. Spetzler Endowed Chair for Neurosciences, and Chair of the Department of Neurosurgery. He is board certified by the American Board of Neurological Surgery.

Dr. Lawton's neurosurgical expertise includes cerebrovascular disorders (aneurysms, arteriovenous malformations, cavernous malformations, and stroke) and skull base tumors. He has experience in treating more than 5,250 brain aneurysms, 1,200 arteriovenous malformations (AVMs), and 1,200 cavernous malformations, including more than 400 in the brainstem and other highly delicate areas of the brain. He is a member of the the American Academy of Neurological Surgery, the American Association of Neurological Surgeons, the Congress of Neurological Surgeons, the Society of Neurological Surgeons, and the World Academy of Neurological Surgery.

Dr. Lawton received his medical degree from Johns Hopkins University School of Medicine in Baltimore, Maryland and an undergraduate degree in biomedical engineering from Brown University in Providence, Rhode Island. He completed his neurosurgery residency at Barrow, where he also completed a fellowship in cerebrovascular and skull base surgery. After joining the faculty at the University of California, San Francisco, he later completed a fellowship in endovascular surgery there.

Dr. Lawton's research studies the formation, underlying genetics, and rupture of brain AVMs, as well as the hemodynamics, rupture, and computational modeling of brain aneurysms. His clinical research studies the anatomy of microsurgical approaches and clinical outcomes of microsurgery for aneurysms, AVMs, and bypass surgery. He is the principal investigator for the Brain Vascular Malformation Consortium, a National Institutes of Health (NIH)-funded multicenter group studying the genetics and clinical course of rare vascular diseases of the brain. He has published 1,000 peer-reviewed articles, eight single-author textbooks, and more than 120 book chapters.

Knowing neurosurgical education must continue during the pandemic, Dr. Lawton launched Seven Series, a collection of narrated case studies with histories, imaging studies, and illustrations from the Barrow Neuroscience Publications animation studio. He also initiated Barrow Neurosurgery Base Camp, a series of videos capturing resident teaching rounds to help neurosurgeons sharpen their skills. These efforts have helped to make him the one of the most prominent and influential neurosurgeons on X, formerly known as Twitter. Dr. Lawton also co-founded Mission: BRAIN, a teaching mission to raise the level of neurosurgery practiced in developing countries. The organization conducts annual missions in Mexico and Asia.

2024 Barrow Neurological Institute Neuroscience Symposium

Joint 8th ISMINS and IANA Congress

Day 1, May 15, 2024 | Goldman Auditorium

11 a.m.	**Welcome Lunch - Ivy Brain Tumor Center Lobby**
	NEURO-ONCOLOGY | *Nader Sanai, MD*
Noon	Radiation Sensitization to Improve Glioma Outcomes *Nader Sanai, MD*
12:15 p.m.	Disrupting DNA Damage Response in Glioblastoma *An-Chi Tien, MD*
12:30 p.m.	Brain Tumor Pharmacokinetics in Translational Studies *Artak Tovmasyan, MD*
12:45 p.m.	Bench to Bedside: Preclinical Modeling for Effective PK/PD-Driven Clinical Trials for GBM *Shwetal Mehta, PhD*
1 p.m.	Tracking Glioma Evolution Through Longitudinal Liquid Biopsy *Charuta Furey, MD*
1:15 p.m.	Using Vasoactive Peptides to Open the Blood-Brain Barrier and Increase CNS Drug Delivery: Future Opportunities *Matthew Smith-Cohn, DO*
1:30 p.m.	**BREAK**
	NEUROMUSCULAR MEDICINE | *Shafeeq Ladha, MD*
1:50 p.m.	Emerging Treatments in ALS *Shafeeq Ladha, MD*
2:05 p.m.	Treatment Landscape in Myasthenia Gravis *Erik Ortega, MD*
2:25 p.m.	Sifting the Good, the Bad, and the Technologically Beautiful: Indication for Electromyography & Nerve Conduction Testing *Ayushi Chugh, MD*
	MOVEMENT DISORDERS | *Holly Shill, MD, Francisco Ponce, MD*
2:40 p.m.	New Biological Staging of Parkinson's Disease: What and Why? *Holly Shill, MD*
3 p.m.	Spatial Environmental Neuroepidemiology *Brittany Krzyzanowski, PhD*
3:15 p.m.	Advances in Neurosurgical Treatments of Movement Disorders *Francisco Ponce, MD*
3:35 p.m.	Neuralink's PRIME Study *DJ Seo, PhD*
3:50 p.m.	**BREAK**
	SPINE | *Juan Uribe, MD*
4 p.m.	When Life Takes Your Breath Away *Rex A.W. Marco, MD*
4:15 p.m.	The Importance of Databases and Big Data on the Spine (What to Gather and How to Process) *Jay D. Turner, MD, PhD*
4:20 p.m.	Q&A
4:35 p.m.	Minimally Invasive Spine Surgery: How Does it Work? *Laura Snyder, MD*
4:55 p.m.	Q&A
4:50 p.m.	**Adjourn Day 1**
6 p.m.	**Reception – Heard Museum**

Day 1, May 15, 2024 | Sonntag Pavilion

8 a.m.	**Welcome** **Congress President** *Michael T. Lawton, MD* **IANA President** *Vladimír Beneš, MD* **ISMINS President** *Yoko Kato, MD, PhD*
	SYMPOSIUM 1 | *Vladimír Beneš, MD, Lucia Benvenuti, MD*
8:30 a.m.	**Keynote 1**	Skiing and the Art of Cavernoma Surgery *Michael T. Lawton, MD*
8:55 a.m.	**Keynote 2**	Surgical Management of Spinal AVMs *Robert F. Spetzler, MD*
9:20 a.m.	**Keynote 3**	Less Invasive Approaches to Skull Base Tumors *Takeo Goto, MD*
9:45 a.m.	Discussion *All Speakers*
9:45 a.m.	**BREAK**
	SYMPOSIUM 2 | *Michael T. Lawton, MD, Ekkehard M. Kasper, MD, PhD*
10 a.m.	**Keynote 4**	A Personal Reflection of the Cold War *Volker K.H. Sonntag, MD*
10:25 a.m.	**Keynote 5**	Current Trend of Minimally Invasive in Neurosurgery *Yoko Kato, MD, PhD*
10:50 a.m.	The DCER Posterior-Only Technique for Several Basilar Invagination and Atlantoaxial Dislocation *Sarat Chandra, MD*
11:05 a.m.	Supra and Infra Cerebellar Approaches to Pineal Region *Vladimír Beneš, MD*
11:20 a.m.	Discussion *All Speakers*
	SYMPOSIUM 3 | *William Couldwell, MD, PhD, Hidehito Kimura, MD, PhD*
	SKULL BASE 1
11:35 a.m.	Anatomy of Endoscopic Key Hole Approaches to Skull Base Tumors *Takeo Goto, MD*
11:50 a.m.	Anatomy of Extended Endonasal Approaches to Skull Base Tumors *Takeo Goto, MD*
12:05 p.m.	Minimizing the Petrous Bone Resection in Trans Petrosal Approach for Various Lesions *Soichi Oya, MD*
12:20 p.m.	Complication Avoidance in P-fossa surgery: Lessons Learned from Petro-clival Meningiomas *Ekkehard M. Kasper, MD, PhD*
12:35 p.m.	Utility of Preoperative Simulation Using Fusion Three-Dimensional Computer Graphic Images for Brainstem Cerebral Cavernous Malformations *Satoru Miyawaki, MD, PhD*
12:50 p.m.	Discussion *All Speakers*
1 p.m.	**Lunch**

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Day 2, May 16, 2024 | Goldman Auditorium

STROKE | *David Wang, DO*

8 a.m. A Fib and Stroke Prevention
David Wang, DO

8:15 a.m. Quality Stroke Care: Walk the Talk
Tiffany Sheehan, PhD

8:30 a.m. Antithrombotic Use During Acute Ischemic Stroke: Does it Really Work?
Supreet Kaur, MD

8:45 a.m. Vessel Wall Imaging for Stroke
Manoj Massand, MD

9 a.m. Mobile Stroke Update
Daniel Gonzalez, MD

NEUROVASCULAR DISEASE | *Michael T. Lawton, MD*

9:15 a.m. Endovascular Management of Complex Cerebral Aneurysms
Felipe Albuquerque, MD

9:30 a.m. Surgical Management of Brain AVMs
Michael T. Lawton, MD

9:45 a.m. Aging, Cellular Senescence, and Intracranial Aneurysms
Peyton Nisson, MD

10 a.m. Carotid Cavernous Fistulas
Andrew Ducruet, MD

EPILEPSY | *Vladmir Shvarts, MD*

10:15 a.m. Anti-Seizure Medication Updates
Daniel Fayard, MD

10:30 a.m. Epilepsy In Women
Ritika Suri, MD

10:45 a.m. Introduction to High Density EEG
Stephen Foldes, PhD

11 a.m. Introduction to MEG
Vladmir Shvarts, MD

11:15 a.m. Advances in Epilepsy Surgery
Andrew Yang, MD

11:45 a.m. LUNCH - Ivy Brain Tumor Center Lobby

12:30 p.m. Vendor Block - Marley Lobby

COGNITIVE DISORDERS | *Anna Burke, MD*

1 p.m. Neuropsychiatric Management of Dementia
Anna Burke, MD

1:15 p.m. Imaging of Dementia
Kevin King, MD

1:30 p.m. Novel Theapeutics
Marwan Sabbagh, MD

1:45 p.m. Neuropsychological Profiles for the Dementias
Danielle Eagan, PhD

NEURO-IMMUNOLOGY | *Aimee Borazanci, MD*

2 p.m. DMT for Relapsing-Remitting Multiple Sclerosis
Ashley Stokes, PhD

2:15 p.m. NMOSD: Update on Dignosis and Treatment
Michael Robers, MD

HEADACHE MEDICINE | *Kerry Knievel, DO*

2:30 p.m. Clinical Features and Management of Low CSF Pressure
Kerry Knievel, DO

2:45 p.m. Clinical Features and Management of High CSF Pressure
Courtney Schusse, MD

Day 1, May 15, 2024 | Sonntag Pavilion *(continued)*

SYMPOSIUM 4 | *Victor Hugo Perez, MD, M. Balamurugan, MD*

SKULL BASE 2

2 p.m. "Who Was A. Perneczky" and "Pathophysiology as a Key of MIN"
Klaus D.M. Resch, MD

2:15 p.m. Spheno Orbital Lesions - Anatomy and Management
Ramesh Nair, MD

2:30 p.m. Decision Making in Endoscopic Approaches to Sellar and Suprasellar Lesions
Azmi Alias, MD

2:45 p.m. Reaching the Skull Base with Minimal Invasiveness: Endoscopic Transnasal/Transcranial Surgery for Purely Intradural Lesion in the Cerebellopontine Angle and Retroclival Regions
Hirotaka Hasegawa, MD, PhD

3 p.m. The Next Generation of Endoscopic Endonasal Skull Base Surgery Using Steerable Instruments
Masaaki Taniguchi, MD, PhD

3:15 p.m. Minimum Invasive Approaches for Orbital Apex
Akihide Kondo, MD, PhD

3:30 p.m. Discussion
All Speakers

4 p.m. ISMINS Board Meeting (BNI Residents Conf. Rm.)

5 p.m. Adjourn Day 1

6 p.m. Reception – Heard Museum

Day 2, May 16, 2024 | Sonntag Pavilion

SYMPOSIUM 5 | *Akihide Kondo, MD, PhD, Asra Al Fauzi, MD, PhD*

VASCULAR 1

8 a.m. Cranial Dural AV Fistulas - Anatomy and Management
Ramesh Nair, MD

8:15 a.m. Surgical and Endovascular Management of Cranial Dural AV Fistulas
Ashish Kumar, MD

8:30 a.m. Anatomical Variants of Carotid Cavernous Artery and its Branches
Victor Hugo Perez, MD

8:45 a.m. Minimal Drilling in Ophthalmic Aneurysms
Vladimír Beneš, MD

9 a.m. Minimal Opening for MCA Aneurysms
Vladimír Beneš, MD

9:15 a.m. Discussion
All Speakers

SYMPOSIUM 6 | *Masaaki Taniguchi, MD, PhD, Ashish Kumar, MD*

VASCULAR 2

9:30 a.m. The Extra-Intracranial Bypass from its Origin to Current Indications
Lucia Benvenuti, MD

9:45 a.m. Advancements in Contemporary Vascular Neurosurgery: Ensuring Safety and Minimally Invasive Procedures
Hidehito Kimura, MD

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Day 2, May 16, 2024 | Goldman Auditorium *(continued)*

3 p.m.	Imaging in CSF Leak *Raza Mushtaq, MD*
3:15 p.m.	Venous Pathology in Low and High CSF Pressure *Badih Daou, MD*
3:30 p.m.	**BREAK**
	BARROW GLOBAL (No CME)	*Dilan Ellegala, MD*
3:45 p.m.	Introduction and Welcome *Michael T. Lawton, MD*
3:50 p.m.	Moonshot and Innovation *Gail Rosseau, MD*
4 p.m.	Speaker Introduction: Moderator *Dilan Ellegala, MD*
4:05 p.m.	Technology in Use - 3D Virtual Cube Training in Tanzania *Kerry Vaughan, MD*
4:15 p.m.	Hand Motion Tracking *Joseph Singapogu, PhD*
4:25 p.m.	Virtual Reality in Spine Training *Juan Pedro Giraldo, MD*
4:35 p.m.	A.I. in Clinical Diagnosis *James Bates*
4:45 p.m.	MedTech Investing *Gary Gibbons, PhD*
4:55 p.m.	Global Neuro Equity Fund *Kee Park, MD*
5:05 p.m.	A Foundation Role *Katie Cobb*
5:10 p.m.	Closing Remarks *F. David Barranco, MD*
5:15 p.m.	**Adjourn**
6 p.m.	**Reception – Phoenix Art Museum**

Day 2, May 16, 2024 | Sonntag Pavilion *(continued)*

10 a.m.	Stroke Surgeon: The Future *Asra Al Fauzi, MD*
10:15 a.m.	Flexible Endoscopic Aspiration of Intraventricular Haemorrhages *Alberto Feletti, MD, PhD*
10:30 a.m.	Absolute Ethanol Embolization and Single Level Fixation for Large Vertebral Body Hemangiomas - A Simple, Minimally Invasive and Effective Strategy *Chandra Sarat, MD*
10:45 a.m.	Discussion *All Speakers*
10:55 a.m.	**Break**
	SYMPOSIUM 7 | *Hirotaka Hasegawa, MD, PhD, Samer Elbaaba, MD*
	ONCOLOGY 1
11:10 a.m.	Large Meningiomas – Deciding Choice and Approach *Ramesh Nair, MD*
11:25 a.m.	3rd Ventricle Approaches *Abuzer Gungor, MD*
11:40 a.m.	Management of Pituitary Apoplexy *William Couldwell, MD*
11:55 a.m.	Contralateral Approach to Tuberculum Meningiomas *Vladimír Beneš, MD*
12:10 p.m.	Management of Large and Giant Trigeminal Neuromas *William Couldwell, MD*
12:25 p.m.	Discussion *All Speakers*
12:35 p.m.	**Lunch**
	SYMPOSIUM 8 | *Takeo Goto, MD, Deepak Gupta, MD*
	ONCOLOGY 2
1:35 p.m.	Enough-Lateral Enough-Telovelar Approach *Vladimír Beneš, MD*
1:50 p.m.	Perioperative Imaging, DSA and Embolization for Brain Tumor Surgery *Ekkehard M. Kasper, MD, PhD*
2:05 p.m.	Fluorescence Guided Surgery for Gliomas -10-Year Outcomes in 640 Cases *M. Balamurugan, MD*
2:20 p.m.	Minimal Anterior and Posterior Combined Petrosal Approach to Large Petroclival Tumors *Takeo Goto, MD*
2:35 p.m.	Trans-Ventricular Endoscopic Assisted Microsurgery for Craniopharyngiomas With Anterior Third Ventricle Involvement: A Consecutive Series *Francesco Tuniz, MD*
2:50 p.m.	Discussion *All Speakers*
	SYMPOSIUM 9 | *Ying Mao, MD, PhD, Mario Ammirati, MD*
	PEDIATRIC
3:05 p.m.	The Role of Endoscopic Surgery for Pediatric and Adolescent Patients *Hirotaka Hasegawa, MD, PhD*
3:20 p.m.	Endoscopic Surgery of the Intracranial Potential Spaces in Children *Azmi Alias, MD*

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Day 3, May 17, 2024 | Goldman Auditorium

GLOBAL NEUROSURGERY & NEUROLOGY

8 a.m. Success in Neurosurgery, and What It Takes to Succeed
Robert F. Spetzler, MD, Volker K.H. Sonntag, MD

9 a.m. **KEYNOTE** | Vision and Strategic Planning for Global Neurosurgery
Kee Park, MD

10 a.m. Break

10:15 a.m. **NEUROCRITIAL CARE** | *Ruchira Jha, MD*

10:40 a.m. Multimodal Monitoring in the Neuro ICU
Aditya Kumar, MD

10:55 a.m. Neuroprognostication
Nassim Matin, MD

11:15 a.m. Quantitative EEG in the Neuro ICU
Patrick Crooks, MD

11:30 a.m. Brain-Heart-Lung Dysfunction in Acute Brain Injury
Nassim Matin, MD

Noon Adjourn

Day 2, May 16, 2024 | Sonntag Pavilion *(continued)*

3:35 p.m. Fetal in-Utero Micro Neurosurgical Management of Myelomeningocele in the Post MOMS Trial Era
Samer Elbabaa, MD

3:50 p.m. Microsurgical, Endoscope-Assisted, and Purely Endoscope-Controlled Approaches for Pineal Region Tumors in Children
Samer Elbabaa, MD

4:05 p.m. Discussion
All Speakers

6 p.m. Reception – Phoenix Art Museum

Day 3, May 17, 2024 | Sonntag Pavilion

SYMPOSIUM 10 | *Ramesh Nair, MD, Deepak Bhangalee, MD*

SPINE

8 a.m. Anatomy and Surgery for Spinal Dural AVF
Ekkehard M. Kasper , MD, PhD

8:15 a.m. Surgical Anatomy of the Great Posterior Spinal Artery
Victor Hugo Perez, MD

8:30 a.m. An O Arm Based Algorithm to Place Thoraco Lumbar Screws
Mario Ammiratti, MD

8:45 a.m. Success in Neurosurgery, and What It Takes to Succeed
Volker K.H. Sonntag, MD

9 a.m. Discussion
All Speakers

SYMPOSIUM 11 | *Ekkehard M. Kasper, MD, PhD, Mario Ammaratti, MD*

FUNCTIONAL / MISCELLANEOUS

9:15 a.m. RAPID Consortium: U.S. National Pituitary Surgical Outcomes Registry and Living Biobank
Andrew Little, MD

9:30 a.m. Purely Endoscopic Removal of Colloid Cyst
Alberto Feletti, MD, PhD

9:45 a.m. Bloodless Hemispherotomy for Drug-Resistant Epilepsy - Back to the Future
Sarat Chandra, MD

10 a.m. Cavernoma: Metanalysis
Vladimír Beneš, MD

10:15 a.m. AVMs: How I Do It?
Vladimír Beneš, MD

10:30 a.m. Discussion
All Speakers

10:40 a.m. Break

SYMPOSIUM 12 | *Victor Hugo Perez, MD, Lucia Benvenuti, MD*

MINIMALLY INVASIVE SURGERY

11 a.m. Minimally Invasive TLIF: Is Iordosis Achieved? Radiological Assessment of TLIF
Deepak Bhangale, MD

11:15 a.m. Cranio Vertebral Junction Tumors - Simplicity Trumps Complexity
Mario Ammiratti, MD

11:30 a.m. Evolution of Hemispherotomy from Open to Endoscopic and to a Bloodless Technique
Sarat Chandra, MD

Continued Next Page

Day 3, May 17, 2024 | Sonntag Pavilion *(continued)*

11:45 a.m.	Postoperative Infections After Spine Surgery For Implanting Intraspine *Lucia Benvenuti, MD*
Noon	Advances in Molecular Biomarkers for Adult Diffuse Glioma: From Diagnosis to Surgical Guidance *Ying Mao, MD, PhD*
12:15 p.m.	Surgery for Pineal Region Lesions *Giovanni Broggi, MD*
12:30 p.m.	Discussion *All Speakers*
12:40 p.m.	Closing Ceremony *Michael T. Lawton, MD, Vladimír Beneš, MD, Yoko Kato, MD, PhD, Lucia Benvenuti, MD*
1:15 p.m.	**Adjourn**

Barrow Neurological Institute Faculty

Felipe Albuquerque, MD
Director, Endovascular Neurosurgery

F. David Barranco, MD
Chief Medical Officer, Neurosurgeon

Anna Burke, MD
Cognitive Neuropsychiatrist
Alzheimer's and Memory Disorders Program

Ayushi Chugh, MD
Neurologist, Neuromuscular Disorders

Katie Cobb
Chief Philanthropy Officer
Barrow Neurological Foundation

Susan Criswell, MD
Neurologist, Movement Disorders

Patrick Crooks, MD
Neurologist, Neurocritical Care

Badih Daou, MD
Fellow, Neuroendovascular Intervention

Andrew Ducruet, MD
Assistant Director
Endovascular Neurosurgery

Danielle Eagan, PhD
Neuropsychologist

Dilan Ellegala, MD
Medical Director, Barrow Global
Professor, Neurosurgery

Daniel Fayard, MD
Assistant Professor, Epilepsy Center

Stephen T. Foldes, PhD
Assistant Professor
Neurodiagnostics, Epilepsy

Charuta Furey, MD
Neurosurgery Resident

Juan Pedro Giraldo, MD
Research Fellow
Sonntag Spine Center & VR Laboratory

Daniel Gonzalez, MD
Neurologist, Petznick Stroke Center

David Harris, MD
Neurologist, Epilepsy

Susan Herman, MD
Neurologist, Epilepsy

Ruchira Jha, MD
Neurologist, Chief, Neurocritical Care

U. Kumar Kakarla, MD
Assistant Professor, Department of Neurosurgery

John Karis, MD
Director, MRI & Brain Imaging
Professor, Department of Neuroradiology

Supreet Kaur, MD
Neurologist, Stroke

Kevin King, MD
Neuroradiologist, Professor, Department of Neuroradiology

Kerry Knievel, DO
Director
Lewis Headache Center
Migraine and Headache Disorders

Aditya Kumar, MD
Neurologist, Neurocritical Care

Brittany Krzyzanowski, PhD
Research Assistant Professor
Neuroepidemiology Research Program

Shafeeq Ladha, MD
Professor, Neurology
Director, Gregory W. Fulton ALS & Neuromuscular Center

Michael T. Lawton, MD
President and CEO,
Professor and Chair, Neurosurgery
Chief, Neurovascular Surgery

Andrew Little, MD
Director, Pituitary Center and Skull Base Program

Fiona Lynch, MD
Neurologist, Neurocritical Care

Nassim Matin, MD
Neurologist, Neurocritical Care

Shwetal Mehta, PhD
Deputy Director, Ivy Brain Tumor Center

Rory Murphy, MD
Assistant Professor, Department of Neurosurgery

Raza Mushtaq, MD
Neuroradiologist

Nicki Niemann, MD
Neurologist, Movement Disorders

Peyton Nisson, MD
Postdoctoral Research Fellow
Barrow Aneurysm & AVM Research Center

Erik Orgtega, MD
Neurologist, Neuromuscular Diseases

Francisco Ponce, MD
Chief, Stereotactic and Functional Neurosurgery

Michael Robers, MD
Neurologist, Multiple Sclerosis

Shane Root, MD
Neurologist
Migraine and Headache Disorders

Gail Rosseau, MD
Adjunct Professor, Neurosurgery

Marwan Sabbagh, MD
Behavioral Neurologist

Nader Sanai, MD
Director, Division of Neurosurgical Oncology,
Director, Ivy Brain Tumor Center

Courtney Schusse, MD
Neurologist, Epilepsy

Tiffany Sheehan, PhD
Coordinator, Stroke Program

Holly Shill, MD
Director, Muhammad Ali Parkinson Center

Vladimir Shvarts, MD
Director, Epilepsy Program

Kris Smith, MD
Neurosurgeon
Cranial Neurosurgery

Matthew Smith-Cohn, DO
Neuro-Oncologist
Assistant Professor, Neuro-Oncology

Laura Snyder, MD
Professor, Department of Neurosurgery

Volker K.H. Sonntag, MD
Professor Emeritus, Neurosurgery

Robert F. Spetzler, MD
Professor Emeritus, Neurosurgery

Ashley Stokes, PhD
Assistant Professor
MRI, Neurodegeneration, Biomarkers

Ritika Suri, MD
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An-Chi Tien, PhD
Director of Pharmacodynamics, Ivy Brain Tumor Center

Artak Tovmasyan, PharmD, PhD
Director of Pharmacokinetics, Ivy Brain Tumor Center

Jay D. Turner, MD, PhD
Director, Barrow Clinical Outcomes Center
Associate Professor, Neurosurgery

Yoshie Umemura, MD
Chief, Neuro-Oncology

Kerry Vaughan, MD
Franke Global Neurosurgery Fellow

John E. Wanebo, MD
Neurosurgeon, Cranial Neurosurgery

David Wang, DO
Vascular Neurologist

Andrew Yang, MD
Neurosurgeon

Visiting Faculty (Neuroscience Symposium)

James Bates
CEO of AdviNow
AI Diagnostic Tool

Gary Gibbons, PhD
Clinical Associate Professor at Thunderbird School of Global Management

Rex A.W. Marco, MD
Professor, Reconstructive Spine Surgery and Musculoskeletal Oncology, Program Director, Spine Fellowship, Department of Orthopaedic Surgery, UT Health Houston, McGovern Medical School

Kee Park, MD
Director of Policy and Advocacy at the Program of Global Surgery and Social Change
Harvard Medical School

DJ Seo, PhD
Co-Founder of Neuralink

Joseph Singapogu, PhD
Assistant Professor, Bioengineering, Clemson University

ISMINS/IANA Congress Visiting Faculty

Asra Al Fauzi, MD, PhD
Azmi Alias, MD
Mario Ammiratti, MD
M. Balamurugan, MD
Vladimír Beneš, MD
Lucia Benvenuti, MD
Deepak Bhangale, MD
Giovanni Broggi, MD
Sarat Chandra, MD
William Couldwell, MD, PhD
Samer Elbabaa, MD
Alberto Feletti, MD, PhD
Takeo Goto, MD
Abuzer Gungor, MD
Deepak Gupta, MD
Hirotaka Hasegawa, MD, PhD
Ekkehard M. Kasper, MD, PhD
Yoko Kato, MD, PhD
Hidehito Kimura, MD, PhD
Akihide Kondo, MD, PhD
Ashish Kumar, MD
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Ying Mao, MD, PhD
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Ramesh Nair, MD
Soichi Oya, MD
Victor Hugo Perez, MD
Klaus D.M. Resch, MD
Abidha Shah, MD
Volker K.H. Sonntag, MD
Robert F. Spetzler, MD
Masaaki Taniguchi, MD, PhD
Francesco Tuniz, MD

2024 Barrow Neurological Institute
Neuroscience Symposium

Joint 8th
ISMINS and IANA Congress

Who Should Attend

Neurosurgeons, neurologists, residents, and other healthcare providers with an interest in the application of best practices in the evaluation and appropriate treatment of patients with aneurysms, neurodegenerative diseases, various causes of stroke, and utilizing DBS to treat Alzheimer's disease.

Objectives

- Recognize neurological disorders and become familiar with appropriate data-driven treatments
- Learn the diagnostic evaluation and decision-making process for medical and neurosurgical interventions
- Increase the understanding and clinical competence to improve clinical practice and outcomes in neurological and neurosurgical conditions
- Understand the evaluation algorithms and evidence-based treatment options for vascular, neurodegenerative, and neoplastic disorders.

Learn More

Barrow Neurological Institute | *Minding What Matters Most™*