

June 16-18
2023



iSAH at DUKE
June 16-18, 2023



Duke Neurosurgery

The 16th International Conference on Subarachnoid Hemorrhage

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*The world's experts presenting the latest
updates on research, state-of-art
treatment, and management of
subarachnoid hemorrhage and
unruptured intracranial aneurysms*

Washington Duke Inn
Durham, North Carolina

Hosted by
the Department of Neurosurgery
at Duke University

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Committees

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David Hasan, MD

Organizing Committee

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Andrew Cutler, MD, MS
Nada El-Husseini, MD
Erik Hauck, MD

Shreyansh Shah, MD
Miriam Treggiari, MD
Wayne Feng, MD
Ali Zomorodi, MD

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Diederik Butlers, MD
Jens Dreier, MD, PhD
Shane English, MD, MSc, FRCPC
Tomoki Hashimoto, MD
Lock McDonald, MD, PhD, FRCSC, FACS

Gabriel Rinkel, MD
Ulf Schneider, MD
Jose Suarez, MD, FNCS, FANA, FAAN
James Torner, PhD
Prof. George Kwok Chu Wong
John Zhang, PhD

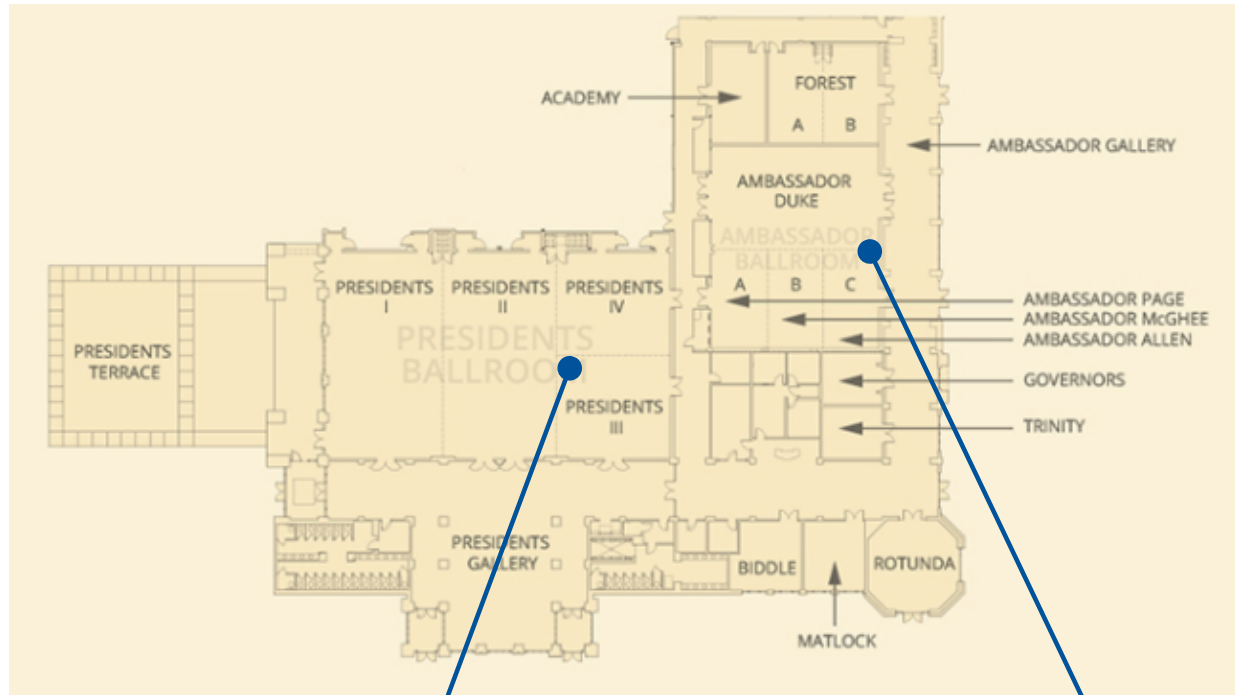
Organizing Team

Victoria Nguyen
Carol Harbers

16th International Conference on Subarachnoid Hemorrhage (iSAH)

Access

Washington Duke Inn



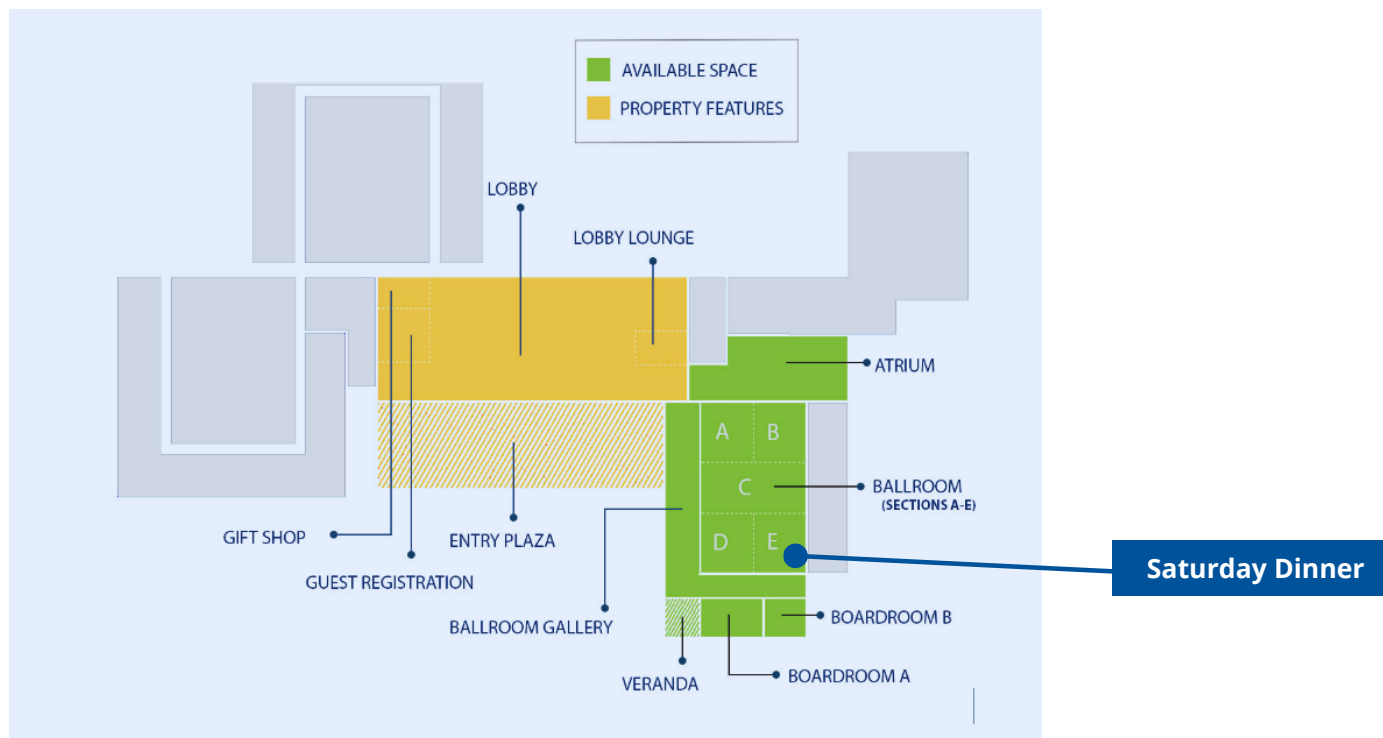
Welcome Reception

Conference Room

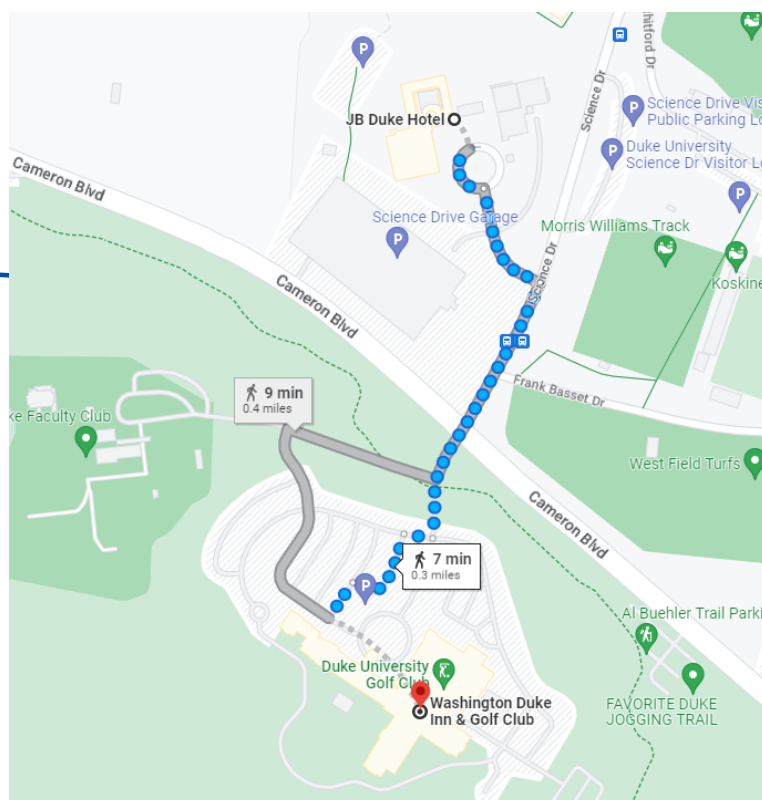
16th International Conference on Subarachnoid Hemorrhage (iSAH)

Access

JB Duke Hotel



Walking Directions from Washington Duke Inn to JB Duke Hotel



Program at Glance

Friday, June 16, 2023 | JB Duke Hotel

8:00 - 1:00 / Consensus meeting

1:00 – 5:30 / Session 1 in Ambassador Ballroom

6:30 – 8:30 / Welcome Reception in Washington Duke Hotel (Presidents II & IV)

Saturday, June 17, 2023 | Washington Duke Inn

6:45 – 7:40 / Breakfast in Ambassador Ballroom

7:40 – 10:10 / Session 2 in Ambassador Ballroom

10:10 – 10:40 / Break

10:40 – 12:00 / Session 3 in Ambassador Ballroom

12:00 - 12:50 / Lunch

12:50 – 3:10 / Session 3 in Ambassador Ballroom

3:10 – 3:30 / Break

3:40 -5:10 / Session 4 in Ambassador Ballroom

6:00 - 9:00 / Dinner in Ballroom D-E at JB Duke Hotel

Sunday, June 18, 2023 | Washington Duke Inn

6:40 – 7:35 / Breakfast in Ambassador Ballroom

7:40 – 9:55 / Session 5 in Ambassador Ballroom

9:55 – 10:20 / Break

10:20 -12:00 / Session 6 in Ambassador Ballroom

12:00 -12:40 / Lunch

12:40 – 3:05 / Session 7 in Ambassador Ballroom

3:05 – 3:30 / Break

3:30 – 5:00 / Session 8 in Ambassador Ballroom

Program

Friday, June 16, 2023

8:00 – 1:00	Consensus Meeting Core Outcomes in Subarachnoid Haemorrhage Research
1:00 - 1:10 p.m.	Introductions and Opening Remarks JB Duke Hotel
1:10 – 1:40	History of Aneurysmal SAH Research John Zhang, MD, PhD
1:40 – 3:00	Oral Abstract Session (Junior Scientists and Clinician-Scientists) Moderators: Ulf C. Schneider, MD, and Sepideh Amin-Hanjani, MD Novel Deep-Learning Methods for Cerebral Vessel and Aneurysm Segmentation Tatsat Patel, PhD ABT263 Senolysis for the Prevention of Intracranial Aneurysm Rupture in Mice Redi Rahmani, MD Blood Pressure Thresholds and the Risk of Subarachnoid Hemorrhage Freddie Ewbank, PhD Analyzing Epigenetic Landscapes Around IA Haplotypes to Understand Genetic Risk Kerry Poppenberg, PhD Quantitative Imaging Biomarkers for Cerebral Aneurysm Risk Stratification Sricharan Veeturi, PhD Risk of Aneurysm Rupture (ROAR) Study: Rationale and Design Samuel R. Halls, PhD A Proteomic Discovery Study of Cerebrospinal Fluid from Patients with Aneurysmal Subarachnoid Hemorrhage Ben Gaastra, MD
3:00 - 3:30 p.m.	Break
	Mechanistic Pathways of aSAH Moderators: Jose Javier Provencio, MD, and George Kwok Chu Wong
3:30 – 3:45	Disequilibrium of Metabolic Homeostasis After SAH Yong Jiang, MD, PhD

3:45 – 4:00	Pretreatment with Clodronate Improved Neurofunction Involving in Inhibition of Cerebral Blood Flow Reduction in Rat SAH Hiroki Uchikawa, MD, PhD
4:00 - 4:15	How the Neuro-Glial Network Responses to Subarachnoid Hemorrhage Gang Chen, MD, PhD
4:15 – 4:30	Toll-Like Receptor4-Pathway in Neuroinflammation After SAH – Possible Future Targets Rebecca Heinz, MD
4:30 – 4:45	The Role of Extracellular RNA for Microglia Activation after SAH Ulf C. Schneider, MD
4:45 - 5:00	Timing and Modalities of Ruptured Aneurysm Treatment Sepideh Amin-Hanjani, MD
5:00 – 5:15	Brain Discharge – 1 Jens P. Dreier, MD, PhD
5:15 – 5:30	Pterygopalatine Fossa (PPF) Block as an Opioid Sparing Treatment for Acute Headache in Aneurysmal Subarachnoid Hemorrhage Katharina M. Busl, MD, MS
5:30 – 5:45	Neurapheresis for aneurysmal Subarachnoid Hemorrhage: Summary of the PILLAR and PILLAR XT Multi-Center Prospective Studies Nandan Lad, MD, PhD
6:30 – 8:30 p.m.	Reception (Drinks / Cocktails and Hors d'Oeuvres) Presidents Ballroom Washington Duke Inn

Saturday, June 17, 2023

6:45 – 7:40 a.m. Breakfast

Biomarkers of SAH

Moderators: Spiros Blackburn, MD, and Hiroki Uchikawa, MD, PhD

- 7:40 – 7:55 a.m. **Prediction and Detection of Delayed Cerebral Ischemia in High-Grade SAH Patients**
Emanuela Keller, MD
- 7:55 – 8:10 **Biomarkers of Cerebral Edema after Subarachnoid Hemorrhage**
H Alex Choi MD, MS
- 8:10 – 8:25 **MicroRNA Endotypes in SAH**
Sherry Hsiang-Yi Chou MD, MSc
- 8:25 – 8:40 **miRNA Predictors after Aneurysmal Subarachnoid Hemorrhage**
George Kwok Chu Wong
- 8:40 – 8:55 **GWAS and Vasospasm and DCI**
Elisa Cuadrado-Godia, MD, PhD
- 8:55 – 9:10 **GWAS of Outcome after SAH**
Diederik Bulters, MD
- 9:10 – 9:25 **A Machine Learning Approach to Definition and Thresholds for Intervention for DCI**
Robert Lock MacDonald, MD
- 9:25 – 9:40 **Shortcomings of Conventional Aneurysm Imaging and the Value of Advanced Imaging for Aneurysm and Vasospasm Management**
Mahmud Mossa-Basha, MD
- 9:40 – 9:55 am **Genetics, Epigenetics and Metabolomics of iSAH: An Indian Perspective**
Moinak Banerjee, MD
- 10:10 – 10:40 a.m. Break

Novel Therapeutics – 1

Moderators: Sherry Hsiang-Yi Chou, MD, MSc, and Leah Acker, MD, PhD

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|--------------------|---|
| 10:40 – 10:55 | Hemoglobin and Haptoglobin: From Basic Science to Clinical Implications for SAH
Ian Galea, MD, PhD |
| 10:55 – 11:10 | CSF-Hemoglobin after aSAH: Biomarker and Therapeutic Target
Michael Hugelshofer, MD, MSc |
| 11:10 – 11:25 | Beyond Genetics: Haptoglobin Alpha Isoform Expression and Outcome After SAH
Jin Pyeong Jeon MD, PhD |
| 11:25 – 11:40 | Rapid Clearance of Hemoglobin: Too Little Too Late?
Spiros Blackburn, MD |
| 11:40 – 11:55 | Research Priorities in Haptoglobin Clinical Translation: A Delphi-Based Consensus
Soham Bandyopadhyay, MBBS |
| 12:00 - 12:50 p.m. | Lunch |

Novel Therapeutics – 2

Moderators: Michael Hugelshofer, MD, MSc and Elisa Cuadrado-Godia, MD, PhD

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|---------------|--|
| 12:50 – 13:05 | GPR39 as a Therapeutic Target in SAH
Thierno Madjou Bah, PhD |
| 1:05 - 3:20 | Taming the Autonomic Storm after SAH
Stephan Mayer, MD |
| 1:20 – 1:35 | Selective NMDA Inhibitors in High Risk aSAH: Neuroprotection Revisited
Daniel Laskowitz, MD, MHS |

Life Time Achievement Award

- | | |
|-------------|---|
| 1:35 – 1:45 | Introduction
David Hasan, MD, MSc |
| 1:45 – 2:30 | Life Time Achievement Award: What Previous Clinical Trials Taught Us?
James Torner, PhD |

Inflammation and SAH – 1

Moderators: Daniel Laskowitz, MD, MHS, and Michael Hugelshofer, MD, MSc

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|------------------|--|
| 2:30 – 2:45 | Translational Research of Intracranial Aneurysm
Tomoki Hashimoto, MD |
| 2:45 – 3:00 | Role of Platelets after SAH
Devin McBride, PhD |
| 3:10 – 3:40 p.m. | Break |

Inflammation and SAH – 2

Moderators: Ian Galea, MD, PhD, and Stephan Mayer, MD

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|-------------|--|
| 3:40 - 3:55 | Systemic Metabolic Alterations After Aneurysmal Subarachnoid Hemorrhage
Aaron M. Gusdon, MD |
| 3:55 – 4:10 | How Do Endothelial Cells Respond to Flow in Cerebral Aneurysms? – Bridging Computational Flow Dynamics and Endothelial Biology
Naoki Kaneko, MD, PhD |
| 4:10 - 4:25 | Microfluidic Neurovascular Unit Model for Precision Medicine
Wonjae Lee, PhD |
| 4:25 – 4:40 | Getting to Treatments: Exploiting the Innate Immune System to Prevent Delayed Cerebral Injury after SAH
Jose Javier Provencio, MD |

SAH Recovery

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|----------------|--|
| 4:40 – 4:55 | The Road to Recovery Post aSAH
Wayne Fang, MD, Ms |
| 4:55- 5:10 | Omics of Recovery from aSAH
Sheila A. Alexander, PhD, RN, FCCM |
| 6:00 – 9:00 pm | Dinner (JB Duke Hotel) |

Sunday, June 18, 2023

6:40 – 7:35 a.m. Breakfast

Clinical Trials – 1

Moderators: James Torner, PhD, and Nima Etminan, MD

- 7:40 – 7:55 **Influenceable Factors in Aneurysmal Subarachnoid Hemorrhage - Is There a Light at the End of the Tunnel After All?**
Isabel Charlotte Hostettler, MD, PhD
- 7:55 – 8:10 **Complement C5 Antibodies for Decreasing Brain Injury After Aneurysmal Subarachnoid Hemorrhage (CLASH): A Randomized Controlled Phase IIa Clinical Trial**
Mervyn D.I. Vergouwen, MD, PhD
- 8:10 – 8:25 **How to Compensate for Bias when Using Health Data Based on Bayes' Theorem**
Philippe Bijlenga, MD, PhD
- 8:25 – 8:40 **Antifibrinolytics in aSAH: Case Closed?**
Alejandro A. Rabinstein, MD
- 8:40 – 8:55 **iSPASM-1**
David Hasan, MD, MSc
- 8:55 – 9:10 **Variance in Care of SAH Patients**
Jose I Suarez, MD
- 9:10 – 9:25 **The Future of Clinical Trials for aSAH: Where Should We Stand?**
Anthony Delaney, MBBS, MSc, PhD
- 9:25 – 9:40 **Early Drain: Lumbar Drains in Aneurysmal Subarachnoid Hemorrhage**
Stefan Wolf, MD

9:55 – 10:20 a.m. Break

Clinical Trials – 2

Moderators: Robert L. MacDonald, MD, and Jose Suarez, MD

- 10:20 – 10:35 **Development of a Core Outcome Set for Patients with Aneurysmal Subarachnoid Hemorrhage**
Chris Anderson, PhD

10:35 – 10:50	A Systematic Review Assessing the Association Between Method of Outcome Assessment and Reported Outcomes in SAH patients Emily Fitzgerald, PhD
10:50 – 11:05	Why We Should Still Care About a Consensus Definition of 'Vasospasm Lachlan Donaldson MBBS (Hons), MPhil FCICM
11:05 – 11:20	SAHaRA Trial Shane English, MD
11:20 – 11:35	The Intra-arterial Vasospasm Trial Ketan R. Bulsara MD, MBA Roc Chen, MD
11:35 – 11:50	Intraarterial Spasmolysis for the Treatment of Delayed Cerebral Ischemia - What Do We Achieve by Making Vessels Wide? Michael Veldeman, MD, PhD
12:00 - 12:40 p.m.	Lunch

Clinical Trials -3

Moderators: Mervyn D.I. Vergouwen, MD, PhD, and Shane English, MD

12:40 – 12:55	aSAH and Anesthesia: Current Understanding Hemant Bhagat, MD, DM
12:55 - 1:10	Vasospasm and Shunt Dependency with Active CSF Exchange Behnam Rezai Jahromi, MD
1:10 – 1:25	Cervical Sympathetic Blockade to Manage Cerebral Vasospasm Miriam Treggiari, MD, PhD
1:25 – 1:40	The Need for Center of Excellence Designation to Improve Patient Outcome Christine Buckley

iSAH 2023 Honored Guest

1:40 – 2:20	Insights on Future Research in SAH Gabriel Rinkel, MD
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Unruptured Aneurysms – 1

Moderators: Vincent M. Tutino, PhD, and Michael Veldeman, MD, PhD

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|-----------------------|--|
| 2:20 – 2:35 | Computational Fluid Dynamic Analysis of the Initiation of Cerebral Aneurysms: Experimental and Human Studies
Yuichi Murayama, MD |
| 2:35 – 2:50
Injury | Protective Effect of Adropin Against Subarachnoid Hemorrhage-Associated Brain
Koji Hosaka, PhD |
| 2:50 – 3:05 | Mechanobiology of Cerebral Aneurysm Blebs
Anne M. Robertson, PhD |
| 3:05 – 3:30 p.m. | Break |

Unruptured Aneurysms – 2

Moderators: Shreyansh Shah, MBBS, and Anne Robertson, PhD

- | | |
|--------------------------|---|
| 3:30 - 3:45 | What Can We Learn from Determining the Enhancement of the Aneurysm Wall?
Edgar A Samaniego, MD, MSc |
| 4:45 – 4:00 | Circulating Molecular Signatures of Intracranial Aneurysm
Vincent M. Tutino, PhD |
| 4:00 – 4:15
Aneurysms | Risk Factor Modification as a Therapeutic Target in Unruptured Intracranial
Nima Etminan, MD |
| 4:15 - 4:30 | AI for Prediction of Unruptured Intracranial Aneurysms (Japan, US, European Multicenter Study)
Soichiro Fujimura, PhD |
| 4:30 – 4:45 | Artificial-Intelligence-Augmented Computational Hemodynamic Analysis of Intracranial Aneurysms
Jingfeng (JJ) Jiang, PhD |
| 4:55 – 5:00 p.m. | Closing Remarks
George Kwok Chu Wong |

Delegates

Leah Acker, MD, PhD

Duke University

Sheila A. Alexander, PhD, RN

University of Pittsburgh

Sepideh Amin-Hanjani, MD

University of Illinois at Chicago

Chris Anderson, PhD

The George Institute for Global Health

Thierno Madjou Bah, PhD

Oregon Health and Science University

Soham Bandyopadhyay, MBBS

University of Oxford

Moinak Banerjee, MD

Rajiv Gandhi Centre for Biotechnology

Hemant Bhagat, MD, DM

PGIMER, Chandigarh, India

Philippe Bijlenga, MD, PhD

Geneva University Hospital

Spiros Blackburn, MD

UT Health Houston

Christine Buckley

Brain Aneurysm Foundation

Ketan R. Bulsara, MD

University of Connecticut

Diederik Bulters, MD

University of Southampton

Katharina M. Busl, MD, MS

University of Florida

Gang Chen, MD, PhD

Soochow University

Roc Chen, MD

UTHealth Houston

H. Alex Choi, MD

University of Texas

Sherry Hsiang-Yi Chou, MD, MSc, FNCS, FCCM

Northwestern Feinberg School of Medicine

Elisa Cuadrado-Godia, MD, PhD

Hospital del Mar Medical Research Institute,
Barcelona

Anthony Delaney, MBBS, MSc, PhD

University of Sydney

Lachlan Donaldson, MBBS (Hons), MPhil, FCICM

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Jens P. Dreier, MD, PhD

Center for Stroke Research, Berlin

Shane English, MD, MSc, FRCPC

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Nima Etminan, MD

Universitätsmedizin Mannheim

Freddie Ewbank, PhD

University of Southampton

Wayne Fang, MD

Duke University

Emily Fitzgerald, PhD

The George Institute for Global Health

Soichiro Fujimura, PhD

Tokyo University of Science
Jikei University School of Medicine

Ian Galea, MD, PhD

University of Southampton

Ben Gaastra, MD

University of Southampton

Aaron M. Gusdon, MD

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Samuel R. Halls, PhD

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Michael Hugelshofer, MD/MSc
Universitätsspital Zürich

Behnam Rezai Jahromi, MD
Helsinki University Hospital

Jin Pyeong Jeon MD, PhD
Hallym University

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Yong Jiang, MD, PhD
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Stephan Mayer, MD
Westchester Medical Center Health System

Devin McBride, PhD
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Yuichi Murayama, MD
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Mahmud Mossa-Basha, MD
University of Washington

Tatsat Patel, PhD
University at Buffalo

Kerry Poppenberg, PhD
University of Buffalo

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Alejandro A. Rabinstein, MD
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Redi Rahmani, MD
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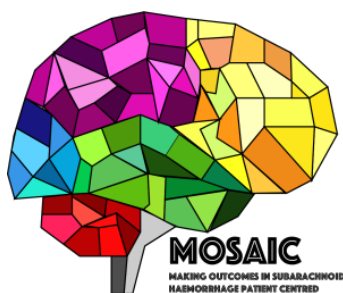
Charité Campus Mitte

Prof. George Kwok Chu Wong

Chinese University of Hong Kong

John H. Zhang, MD, PhD

Loma Linda University



Dear colleagues,

Some of you may be aware of the work we have been doing to improve the selection of outcome measures in subarachnoid haemorrhage research. At the last ISAH meeting in 2019 we had a working group and published a position paper in Lancet Neurology [https://www.thelancet.com/journals/laneur/article/PIIS1474-4422\(19\)30412-0/fulltext](https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(19)30412-0/fulltext) on developing a core outcome set (COS). We are planning another working group at the upcoming ISAH meeting in June 2023.

One of the key events in the process of developing a COS is finalising the outcome domains ('what' to measure). This event will take place immediately before the upcoming ISAH Conference in North Carolina. Numbers are limited but we would like to invite you to register your interest in taking part in this working group. The session will take place between 0800 and 1300 on Friday 16th June at the JB Duke Hotel. Breakfast and Lunch will be provided.

A link to register is provided here <https://sahcoreoutcomes.com/202-2/>

You can alternatively use the QR Code



Thank you for taking part in this important initiative,

Chris Andersen, Shane English, Justin Presseau, Beverley Shea and collaborators.

Here are some additional publications associated with this work:

<https://www.frontiersin.org/articles/10.3389/fneur.2022.1068499/full>

<https://www.frontiersin.org/articles/10.3389/fneur.2022.1000454/full>

<https://n.neurology.org/content/100/15/e1565>

<https://link.springer.com/article/10.1007/s12028-018-0566-0>