

University of British Columbia Department of Surgery

Division of Neurosurgery

Annual Report 2023/2024

For year ended December 31, 2024



THE UNIVERSITY OF BRITISH COLUMBIA

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Division Overview

Message from the Head

Our division is built upon the three pillars of clinical excellence, education and research. Over the last year, we have continued forward in each of these areas. New faculty and new surgical endeavours continue to grow our clinical efforts. Dr. Michael Craig has joined the faculty at the Royal Columbian Hospital. He completed a fellowship in spinal surgery in Calgary and will bring this expertise to RCH. Dr. Michael Honey has joined the faculty at Lion's Gate Hospital and brings a wealth of experience in facial pain surgery. The VGH team has advanced the surgical treatment of epilepsy under the direction of Dr. Mostafa Fatehi. In the new year, we plan to introduce neuromodulation to the treatment options available for these patients. The spinal and pediatric neurosurgeons continue to set the standard of care for their colleagues across Canada and around the world. Teaching remains at the core of our efforts and we received very positive feedback from the UBC Postgraduate Medical Education Office during their internal review of our division. Our program director, Dr. Ash Singhal, received a Faculty of Medicine award for his clinical teaching. We continue to produce outstanding neurosurgeons and our last two chief residents have accepted positions at UBC and UCLA. Our two senior residents have secured prestigious fellowships and all our residents continue to thrive in this learning environment. This year we published 95 peer-reviewed publications and secured over \$6 million in research funding. A review of the publications will demonstrate that they cover the entire spectrum of neurosurgery including a paper coauthored by Dr. Gary Redekop in the *New England Journal of Medicine*. In recognition of their work, Dr. Faizal Haji was awarded the Hjalmar Johnson New Investigator Award, Dr. Charlotte Dandurand presented the best paper at the North American Spine Society annual meeting and Dr. Nic Dea received the Benzel Research Award at the 2024 Spine Summit. Our chief resident, Dr. Michael Rizutto, received the Outstanding Resident Award from Vancouver Coastal Health. We welcome the opportunity to continue to improve the quality of our patients' lives.

Chris Honey

Mission

To provide excellence in patient care, teaching and research and to respect and serve our patients welfare.

Vision

To be a world class academic institution in the field of neurological surgery, through the pursuit of teaching, research and innovative patient care.

Values

To value our patients' rights, individuality and cultural diversity.

To act in the best interests of our patients & to value our colleagues and fellow workers.

To respect and value all members of our multidisciplinary team.

To encourage creativity and innovation among ourselves and our colleagues.

To pursue the practice of evidence-based medicine & to maintain and advance life long learning.

To assess continuously the effectiveness and efficiencies of our therapies.

To share unstintingly our knowledge with our colleagues and students, the care providers of the present and the future & to be sensitive to the needs of our community.

To value and support our family, friends, and each other.

UBC Division of Neurosurgery Members

Vancouver General Hospital Cranial

Charles Haw
Stefan Lang
Thomas Zwimpfer
Chris Honey
Ryojo Akagami
Mostafa Fatehi
Serge Makarenko
Peter Gooderham



Gary Redekop

Vancouver General Hospital Spine

Charlotte Dandurand
Tamir Ailon
Nic Dea
Charles Fisher*
Raphael Charest-Morin
Marcel Dvorak*
John Street*
Scott Paquette
Brian Kwon*

(*orthopedic surgeons)



Victoria General Hospital

Ian Fleetwood
Evan Frangou
Stephen Hentschel
Richard Reid
John Sun
Daniel Warren



Royal Inland Hospital

Richard Brownlee
Reena Baweja*
Fred (Ferdinand) Matanaj**
Jean-François Chevalier**



Royal Columbian Hospital

Andrew Lee
Zurab Ivanishvili
Michael Nikolakis
Mark Bigder
Navraj Heran
Zulfiqar Kaderali



Michael Craig



Lions Gate Hospital

Abdu Mutat*
Ryan Janicki
Danny Mendelsohn
Ramesh Sahjpaul
Sahid Gul



Michael Honey



Kelowna General Hospital

Michael Tso
Daniel Yavin*
Kim Lefevre
Preneshlin Govender
Gary Goplen*



David Omahen



BC Children's Hospital

Mandeep Tamber
Ash Singhal
Faizal Haji



Associated Members of the Division

Charles Dong
Wolfram Tetzlaff
Navjot Chaudhary
David Fairholm**



* = not in the Division

**=not in picture

New Members

Dr. Michael Craig



Dr. Craig graduated from Dalhousie Medical School in 2017, before coming to UBC for Neurosurgery residency. He has had extensive exposure to skull base and cerebrovascular surgery. He then completed the University of Calgary Complex Spine Fellowship. Clinical interests include degenerative cervical myelopathy, and minimally invasive spine surgery.

Dr. Michael Honey



Dr. Michael Honey grew up in Vancouver, British Columbia, attending UBC on a full scholarship. He completed medical school at UBC and his neurosurgical residency at the University of Manitoba. Throughout his career, Dr. Honey has garnered numerous accolades, including multiple national and international awards for his research – AANS Vesalius Award, CNS Ronald R. Tasker Young Investigator Award, CNSF K.G. McKenzie Memorial Prize (2nd Place) – as well as numerous publications in peer-reviewed journals.

He has undertaken specialized training at UBC in cranial and pain surgery, as well as at the Pan AM Clinic in Winnipeg, where he focused on concussion management. Notably, in his chief year, he achieved the highest score in Canada on the Findlay Neurosurgical examination.

Dr. Honey has been recruited to Lions Gate Hospital in North Vancouver, where he maintains a high-volume practice specializing in cranial and spinal surgery. Alongside his clinical work, he remains deeply engaged in teaching and academic pursuits.

Senior Administrative Assistant

Sachiyo Kaneko provides exemplary administrative assistance for the entire Division.

Research Coordinators



Danielle Pietramala

Danielle obtained a Bachelor of Science from UBC and coordinates a series of clinical trials for Dr. Honey which involves recruiting participants, managing ethics applications, and obtaining grant funding. Danielle also lends a hand to Dr. Honey's neurosurgical fellows who are interested in conducting their own research projects.



Hannah Schoenroth

Hannah completed a Bachelor of Kinesiology at the University of Toronto and is one of the Clinical Research Coordinators for the Division of Neurosurgery. She works closely with Dr. Zwimpfer in the Hydrocephalus Clinic, and also assists Drs. Akagami, Fatehi, and Redekop with ethics applications, patient recruitment, and data collection for various neurosurgery research projects.



Kelsey Cruz

Kelsey graduated from Thompson Rivers University with a Bachelor of Science and has recently started as a Clinical Research Coordinator for Dr. Peter Gooderham and Dr. Serge Makarenko. She coordinates a prospective registry for patients at VGH with a diagnosis of subarachnoid hemorrhage. She also works with the neurosurgical residents conducting research projects, assisting with ethics, patient recruitment, and data collection.



Evan Wilson

Evan completed a Bachelor of Engineering at the University of Guelph in 2024, specializing in Biomedical Engineering. He is now working as the Research Technician and Coordinator for Dr. Lang's Functional Neurosurgery Lab at VGH. Evan applies neuroimaging tools and analysis techniques to analyze DBS effects on brain networks.



Annika Weir

Annika Weir graduated from the University of Victoria with a Bachelor of Science degree in Biochemistry and Applied Ethics. She recently started as the Neurosurgery Research Coordinator at BC Children's Hospital, working closely with Drs. Singhal, Tamber and Haji. She is responsible for the ethics applications, patient recruitment, data collection, and coordination of all pediatric neurosurgery research projects.

Obituary



Doug Cochrane, 1950-2024

It is with great sadness that we share the news of the passing of Doctor and Professor David Douglas Cochrane. Doug, as he was widely known, leaves an enduring legacy of inspiring all who worked with him to be better, and inspiring institutions to become better versions of themselves.

He was born in Cambridge, Ontario, Canada in 1950. After a remarkable high school academic and athletic career, Doug felt called to Medicine and graduated as the Gold Medalist at University of Toronto Medical School. After completing his Neurosurgery Residency at the University of Calgary, Doug completed a Pediatric Neurosurgery Fellowship at the Hospital for Sick Children in Toronto and then returned to Calgary to start his Faculty career in 1981. After a move to British Columbia Children's Hospital and University of British Columbia in 1986, he started an incredible 30-year-long work partnership with Paul Steinbok in the Division of Pediatric Neurosurgery at BCCH. In British Columbia, Doug took on increasingly complex roles, with excellence being the constant. Head of Pediatric Surgery (10 years), VP Medical for BC Children's and the Provincial Health Services Authority (7 years), and Chair of the BC Patient Safety and Quality Council (20 years). Doug trained generations of Canadian and International medical students, residents, and fellows, while caring for the sickest children in the province and performing over 3000 Neurosurgical operations. Tens of thousands of clinic patients and their families remember his skill, his constant good cheer, and his smile.

If you ask anyone, patient, family, medical student, resident, fellow, nurse, attending – all would say the same thing: “Doug always had time for me.” His profound dedication to his patients drove his academic and professional pursuits in patient safety, but most importantly was evident to every patient and family Doug cared for. Authentic dedication, sustained over decades at this intensity, is both rare and inspirational.

All of us, in Pediatric Neurosurgery, are better because of him. The accolades and achievements, far too many to list, do not singularly define a great career. Rather, it is the enduring echoes of inspiration and impact – on the institutions and on countless people who stand on the shoulders of this humble giant.

With all that said, Doug’s greatest love was his family. He leaves behind his loving wife Barbara, with whom he shared a 50-year adventure, his daughters Dawn and Katherine, and his grandchildren with whom he was absolutely besotted, Max, Sophia, Ben, and Gabe.

(Ash Singhal & Barb Cochrane, February 2024)

Clinical Activities

Vancouver General Hospital (cranial)

The Division of Neurosurgery at the Vancouver General Hospital (VGH) functions as the quaternary referral service for the Province of British Columbia. The adult neurosurgical service at VGH is led by Dr. Peter Gooderham and provides specialized care in cerebrovascular, skull base, epilepsy, hydrocephalus and functional neurosurgery. There were approximately 5,000 ambulatory patient visits and 1,800 operations.

Vancouver General Hospital (spine)

The Combined Neurosurgical and Orthopedic Spine Program is a provincial quaternary service caring for complex spinal conditions including spinal oncology, intradural pathology, complex adult deformity and spinal cord injury. Under the leadership of Dr. Nicolas Dea, this unique team manages complex spinal surgery and spinal care for patients from across the province and Yukon Territory as well as routine cases from within the Vancouver Coastal Health region. There are currently 9 spine surgeons on the team with approximately 900 patients annually receiving spinal surgery under their care. They have an internationally recognized fellowship program that trains four fellows in this field each year. Their research productivity and academic excellence is recognized around the world.

Royal Columbian Hospital

The Division of Neurosurgery at Royal Columbian Hospital is the primary neurosurgical centre in the Fraser Health Authority. The neurosurgical group within Fraser Health Authority operates primarily from the Royal Columbian Hospital with additional elective spinal procedures conducted at the Eagle Ridge Hospital site. The neurosurgical group is looking forwards to the long-planned expansion/redevelopment of the RCH site with an anticipated growth in services and capacity to address the needs of Fraser Health patients. Currently the group has 7 full-time adult neurosurgeons (7 FTE) with the recent addition of Dr. Michael Craig. Dr. Craig joins our group having trained in neurosurgery at U.B.C. with additional complex spine subspecialty training at the University of Calgary.

Neurosurgical procedures (n=1489) were conducted in the operating room. These included scheduled, unscheduled, and emergent cases. The operative case volume includes a large number of brain tumor procedures, including primary brain tumor, metastatic disease, extra-axial tumors. Trauma, both cranial and spinal form a large part of the surgical practice including spinal instrumentation/stabilization, cement stabilization (kyphoplasty) and decompressive surgery. Dr. Bigder, in conjunction with Dr. Andrew Thamboo (endoscopic sinus surgery) has continued to develop the endoscopic pituitary and anterior skull base program at RCH. Neuro-endovascular procedures were conducted in the interventional suite by Drs. Heran and Kaderali including treatment of ruptured/unruptured aneurysms, vascular malformations and dural AV fistulas, carotid stenting. Bedside percutaneous procedures (burr hole evacuation for chronic subdural

hematomas) under local anesthetic are routinely performed to optimize the care of patients with chronic/subacute subdural hematomas. This has allowed the Royal Columbian Hospital to treat approximately 100 subdural cases a year outside of the operating room permitting those resources to be utilized for other needs and reducing length-of-stay. Insertion of intracranial pressure monitors, cerebral oximetry, and external ventricular drains are commonly performed in the intensive care unit on critically ill neurosurgical and trauma patients. The Neurosurgical program has established the common practice of fluorescence guided tumor resection with the use of 5-ALA/Gleolan for the surgical treatment of glial tumors.

The primary focus of the neurosurgical group has been on clinical neurosurgical care within Fraser Health. The group participates in postgraduate medical education, primarily at the PGY-1 (non-neurosurgeon) level. The RCH neurosurgical group has also worked with neurosurgical residents including both UBC residents and visiting residents from other Canadian programs.

Kelowna General Hospital

The neurosurgical team at the Kelowna General Hospital is led by Dr. Preneshlin Govender and includes 5 neurosurgeons: Dr. Govender, Dr. David Omahen, Dr. Daniel Yavin, Dr. Michael Tso, and Dr Carolyn Lai.

Dr Carolyn Lai began a neurosurgery locum in Kelowna in July 2023 and is now a full time permanent Neurosurgery Staff since July 2024. While she has done multiple fellowships, she has a general neurosurgery practice with special interest in skull base tumours and neuro-oncology.

Dr Rita Nguyen, who is originally from Calgary, began a neurosurgery locum at Kelowna General Hospital in the latter part of 2024. She has previously completed a Paediatric Neurosurgery fellowship.

While Dr Kim Lefevre has retired from full time practice, he continues to assist with elective neurosurgery cases.

The neurosurgical service workload at Kelowna General Hospital continues to have 1/3 cranial and 2/3 spine case split.

80% of the cases are performed in scheduled/elective surgical time and 20% after hours in the emergency surgical time. We are in the process of arranging extra emergency rooms to be run on weekends to facilitate the increase in trauma and urgent cases.

The endovascular and minimally invasive spine programs continue to grow with the addition of new equipment this past year.

Victoria General Hospital

The Division of Neurosurgery at Victoria General Hospital is led by Dr. Daniel Warren and offers neurosurgical care for patients on Vancouver Island. There are seven neurosurgeons: Dr. Daniel Warren, Dr. Evan Frangou, Dr. Stephen Hentschel, Dr. Oliver Ayling, Dr. Richard Reid, Dr. Ian Fleetwood and Dr. John Sun.

Dr. Daniel Warren has subspecialty interest in minimally invasive and complex spine reconstruction. Dr. Warren remains as the Division Head, President and fellowship director for the Vancouver Island Neurosurgical Foundation (VINF) and is the active President of the BC Association of Neurosurgeons (BCAN).

Dr. Evan Frangou specializes in minimally invasive and complex spine reconstruction. He is the IT lead for Island Health CPOE, the Medical Student and Resident education lead and ICU Liaison for Neurosurgery within Island Health. Dr. Frangou is also our site representative on the executive for BCAN.

Dr. Stephen Hentschel specializes in neuro-oncology and skull base surgery. He is the former Division Head. He serves in administrative leadership as Medical Director Surgical Services for Island Health.

Dr. Oliver Ayling relocated to our group in Island Health from Interior Health and is a much welcome addition. The move was not an easy one for him however this allows him to be closer to family. He intends to grow his interest in complex and minimally invasive spine techniques. There is also an interest in improving care for Spine Oncology patients. He intends to assume a leadership role in guiding the acquisition of new technologies to improve outcomes for spine patients while maintaining an active interest in general neurosurgery.

Dr. Richard Reid provides complex spine reconstruction and general neurosurgery. He is the former Division Head and remains our Trauma Lead for the Division of Neurosurgery in Island Health.

Dr. Ian Fleetwood specializes in cerebrovascular neurosurgery and neuro-oncology. He remains the OR and On-call schedule lead. Dr. Fleetwood is an active participant regarding contractual negotiations for the Division of Neurosurgery with Island Health.

Dr. John Sun has a general neurosurgery practice which includes functional neurosurgery. He is the NPH clinic associate and event planner for Neurosurgery Island Health. Dr. Sun has recently reduced his status to 0.5 FTE yet maintains an active interest in medical-legal matters for Neurosurgical patients.

The division maintains a Non-profit Organization, VINF, to support education and research. We have had a host of resident trainees over the past year from the University of Calgary, The University of Ottawa and from our home program at UBC. Our group also graduated two fellows this year. One international trainee who completed a Neurosurgery Residency at McMaster University and a Canadian graduate who had completed residency training at the University of Western Ontario and a Neuro-oncology fellowship in the United Kingdom. Both have moved on to staff positions with one taking on a full-time role in Regina, Saskatchewan. Our site continues to strive to provide year long educational opportunities for students/trainees from the Island Medical Program, Canadian Neurosurgical residency training programs and to future fellows. Mr. Alex Russell has moved into a supervisory role for VINF and general operations are now provided by Ms. Sydney Waddington who is performing excellently in this role.

Our Neurosurgical Consultant associate Dr. Navjot Chaudhary is no longer affiliated with VINF as VINF moves toward a focus on education and research. Dr. Chaudhary remains a part of the Island Health Neurosurgery community and there are some early discussions around the development of non-operative concussion management for patients in our community. Dr. Chaudhary has developed an interest in this area and works with a consulting group in another region for patients with concussion related issues. The development of Clinical Programs to improve patient care in our community will hopefully continue to be a goal of our division.

Lions Gate Hospital

Lions Gate Hospital neurosurgery provides comprehensive neurosurgical care for cranial and spinal patients. This site provides excellent learning opportunities for medical students and residents. Clinical services at Lions Gate Hospital are set to transition to a new state-of-the-art tower in March 2025. Lions Gate Hospital is also excited to welcome a new Mazor robot guidance system for spinal surgery. This technology is the first of its kind in Western Canada and only the third in all of Canada. There are 6 neurosurgeons at Lions Gate Hospital as the hospital was fortunate to onboard staff neurosurgeon Dr. Mike Honey to the group, which comprises Dr. Gul (Head of VCH Neurosurgery Coastal Community of Care), Dr. Ryan Janicki (Lions Gate Hospital neurosurgery education site lead), Dr. Ramesh Sahjpaal, Dr. Abdu Mutat and Dr. Danny Mendelsohn.

BC Children's Hospital

The Division of Pediatric Neurosurgery is led by Dr. Ash Singhal and has established itself as one of the foremost pediatric neurosurgical units in Canada and is acclaimed internationally as a leader in pediatric neurosurgery. The Division comprises three full-time neurosurgeons: Dr. Singhal, Dr. Mandeep Tamber and Dr. Faizal Haji.

The Division of Pediatric Neurosurgery is located at B.C. Children's Hospital, a part of Children's and Women's Health Centre. This is a tertiary care children's hospital with the full range of support services and the most modern equipment available for the management of neurosurgical disorders in children. There are a number of well-established, multidisciplinary programs including a spina bifida program, spasticity and motor disorders program, an epilepsy surgery program, a neuro-oncology program, and cranio-facial program.

The Division performs approximately 300 neurosurgical operations yearly, and addresses the full range of neurosurgical conditions in children. Cases are individually reviewed by multidisciplinary teams leading to optimized surgical care. The Division has consistently had among the shortest postoperative stays in Canada for a variety of neurosurgical conditions, including major craniotomies and shunt procedures, attesting to the low rate of postoperative complications. They also have one of the lowest rates of pediatric neurosurgical operations per unit population in North America, and this in part reflects the thoughtful approach of the neurosurgeons to the management of neurosurgical conditions and the ability of the neurosurgical team to achieve

enduring results. They have achieved the lowest rates of blood transfusion in the world for open procedures to correct various types of craniosynostosis.

The Division of Pediatric Neurosurgery is part of the Division of Neurosurgery at the University of British Columbia. The neurosurgeons have a major role in the education of medical students and residents in the Neurosurgical training program at UBC. In addition to residency training, the Division provides a 1-year fellowship for fully trained neurosurgeons, who wish special additional training in pediatric neurosurgery. This fellowship has been accredited by the Accreditation Council for Pediatric Neurosurgery in the United States of America.

Royal Inland Hospital

The neurosurgical service at Royal Inland Hospital as had some struggles over the last year. The retirement of Dr. Richard Brownlee at the end of the summer 2024 has left the service down to 3 neurosurgeons with a large clinical load to fill. Out of province recruitment is underway with goals to fill the roster to a complement of 5 neurosurgeons.

Teaching

Undergraduate Program

Program Director

Dr. Serge Makarenko

As another calendar year draws to a close, medical student education continues to thrive within Division of Neurosurgery. We had 62 third- and fourth-year medical students rotate on two- and four-week elective rotations through VGH Cranial Neurosurgery service, with additional students joining the BC Children's Pediatric Neurosurgery, Lion's Gate Hospital Neurosurgery, and VGH Spine Surgery rotations. The positive experiences with staff and residents have been reflected in the popularity of the rotations with students from within and outside the province of British Columbia.

Didactic lectures are set up in both formal and informal settings, as learners partake in Neurosurgery Grand Rounds on Thursday Academic Half-Days. Students also engage in customized neurosurgeon-lead personal teaching sessions where they hear about a neurosurgical topic of their choice. Faculty members regularly contribute with formalized didactic teaching with senior medical students with Faculty of Medicine at University of British Columbia. This includes over 8 hours of trauma simulation education every 8-week surgical block. Sessions implement an approach to managing neurosurgical emergencies as students work in a team-based environment. These are supplemented with 2 hours of formal lectures with overview of brain injury and management of elevated ICP, subarachnoid hemorrhage, brain and spinal disease pathology.

Post-graduate Residency Program

Program Director

Dr Ash Singhal

Residents

- Michael Rizzuto PGY-6
- Alex Rebchuk PGY-5
- Celine Hounjet PGY-3
- Jessica Wang PGY-2
- Angela Yang PGY-1
- Afaf Al-Hatmi PGY-1
- Karanpreet Dhillon PGY-1



The residents in the UBC Neurosurgery Residency program have access to an enormous breadth of clinical and non-clinical educational experiences. At Vancouver General Hospital they have the opportunity to be directly involved with over 2000 cranial and spinal surgical cases per year. Additionally, each year they visit several busy community-based hospitals that perform approximately 1000 cases per year each. This clinical experience allows for the development of outstanding technical skills, which have been recognized around North America. Each year, residents also present at the annual resident research day, UBC Department of Surgery Chung Research day, biannual research rounds and host visiting professors such as Dr. Raslan from OHSU and Dr. Sinclair from Ottawa, who visited our institution this year.

This year we saw the program expand in a substantial way with the addition of 3 new PGY-1 residents: Drs. Dhillon, Yang and Al-Hatmi. Since joining they have performed their inaugural rotations through the cranial and spinal services at VGH, performed their month-long surgical teaching block (CRASH) and travelled to Edmonton for the annual neurosurgery rookie camp. Congratulations go out to Dr. Alex Rebchuk after his successful completion of the written Royal College examination. Additionally, he has accepted a prestigious fellowship in endovascular neurosurgery at the Barrow Neurological Institute to follow completion of his training in June 2026. Dr. Jessica Wang successfully completed the Foundations of Surgery written examination in the Fall of 2024. She also attended the Canadian Spine Society annual conference and gave a podium presentation on her work. Drs. Dhillon, Wang, Hounjet and Rebchuk attended the annual CNSF meeting in Toronto this year to present their ongoing research and Dr. Rebchuk gave a talk at the International Consortium on Meningiomas. Our chief resident, Dr. Michael Rizzuto, has accepted a fellowship at Thomas Jefferson University in endovascular neurosurgery upon completion of his training in June 2025. This will be followed by a second fellowship in open cerebrovascular and skull base surgery at the University of Miami. This year, Dr. Rizzuto received the Nis Schmidt History of Surgery prize and the Outstanding Resident Award from Vancouver Coastal Health. He also completed his MSc through the London School of Economics supported by the UBC Neurosurgery Durity Fund.

The UBC Neurosurgery residents also enjoyed a number of team building activities over the course of 2024, sponsored by the UBC Division of Neurosurgery. On their annual resident retreat, they enjoyed a weekend in Whistler which included a day of fly-fishing and hiking. Dr. Singhal hosted the 1st annual UBC Pumpkin Carving competition in the fall, seeing some spectacular pumpkins carved by the residents and staff. Later in the year the residents returned to the old UBC Neurosurgery CaRMS interview stomping grounds at the TBC Go karting track in Richmond, where they were hosted by Dr. Akagami who took the podium and showed the residents how to glide around the track. Finally, the year culminated in Dr. Singhal's tradition of inviting the residents over during the holidays for dinner to reflect on the year and celebrate the group's accomplishments.





Fellowships

Functional Neurosurgery



Dr. Ben Ho joined us in Jan 2024 and trained with our team for one year. He will return to Melbourne to work with their functional neurosurgery program.



Dr. Intouch Sopchokchai joined us in July 2024 and will be studying functional neurosurgery for one year. Dr. Spochokchai received his neurosurgical training in Thailand and will be returning there to focus on functional neurosurgery

Skull Base Neurosurgery



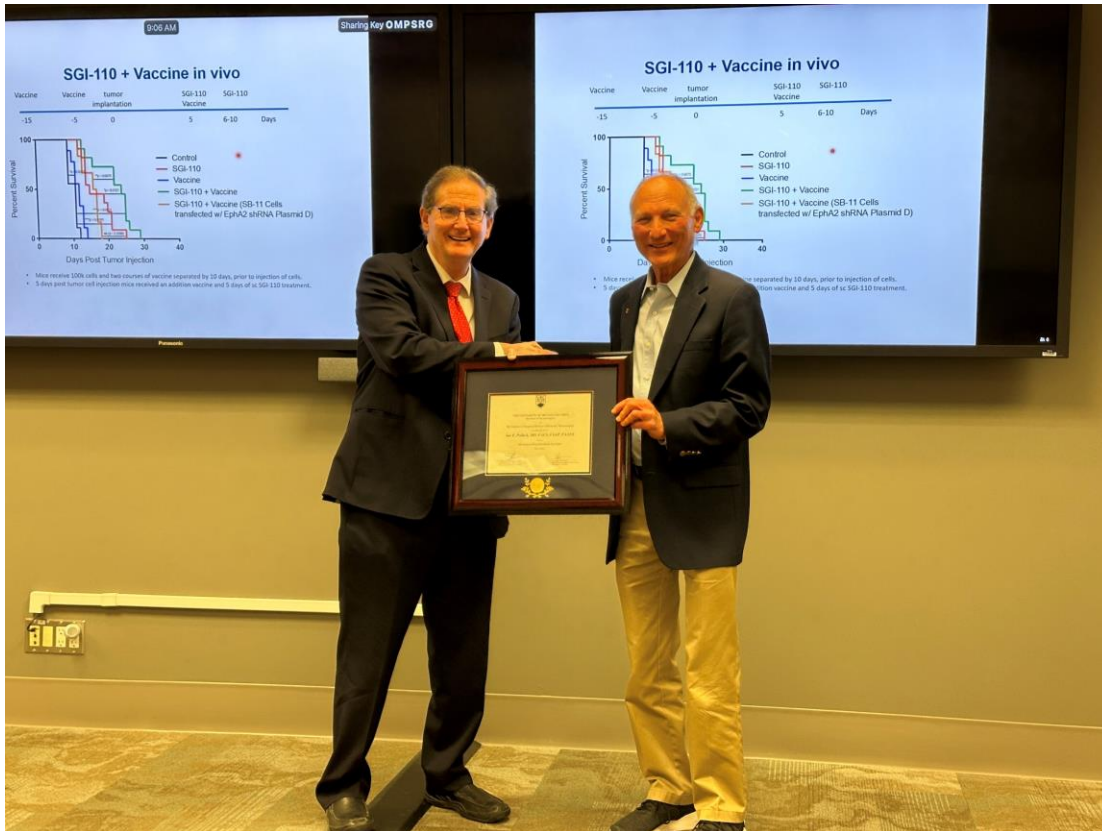
Dr. David Tan (Australia) joined us to be UBC Skull Base Fellow under Dr. Ryojo Akagami, Dr. Peter Gooderham and Dr. Serge Makarenko to undergo training in complex open and endoscopic skull base tumors. Aside from clinical duties, the fellow organises Cadaveric Skull base Workshops, undertakes research and contributes to local resident and medical student teaching. Post-fellowship Dr. Tan plans to return to Adelaide, Australia.

Pediatric Neurosurgery

The Division of neurosurgery at BC Children's Hospital has one or two fellowships per year.

Lectureships

Dr. P.D. Moyes Lectureship



The 45th annual B.C. Neuroscience Day was highlighted by the P.D. Moyes Lectureship given by Professor Ian Pollack (seen here with Dr. Paul Steinbok). His work in pediatric neurosurgery was inspirational.

Awards and Promotions

Dr. Charlotte Dandurand presented the best paper at the North American Spine Society annual meeting and received the Luiz Vialle AO Spine Knowledge Forum Award for her outstanding performance, active participation, dedication, quality of work, and leadership of AO Spine KF members.

Dr. Nic Dea received the 2024 Benzel Research Award from the AANS/CNS Section of Spine and Periferal Nerve.

Dr. Faizal Haji was awarded the Hjalmar Johnson New Investigator Award.

Dr. Serge Makarenko was promoted to Clinical Assistant Professor at UBC and received the Louis Lipsey Toohill Scholarship to supervise clinical neuroscience research.

Dr. Scott Paquette was promoted to Clinical Professor at UBC.

Dr. Ash Singhal received the UBC Faculty of Medicine Award for Excellence in Clinical Teaching.

Dr. Michael Rizzuto (Chief Resident) received the Nis Schmidt History of Surgery prize and the Outstanding Resident Award from Vancouver Coastal Health.

Research

Grants (Peer-Reviewed Competitive)

Granting Agency	Title	\$ per year	Year	PI	Co-PI(s)
New Frontiers in Research Fund	The cell-typespecific basis of epilepsy and treatment in the living human brain	\$125,000	Mar 2023-Mar 2025	M.Cembrowski	Gary Redekop
Intuitive Foundation	Development and Evaluation of Digital Traumatic Brain and Spine Injury Training of General Surgeons in Regional Ethiopia	\$75,000	Apr-Dec 2023	Ron Lett	Gary Redekop Dr. Tsega Laeke Assistant Prof. Addis Ababa University Dr. Esayas Adfris Tefera Assistant Prof. Gondor University Ethiopia
North America Spine Society	Can personalized blood biomarkers detect residual disease in surgically treated chordoma? A pilot study	\$36,000	2023-2024	R. Charest-Morin	S Yip, R Goodwin, C Bettegowda, N Dea
Ner Frontier Exploration	Personalized Biomarker for primary bone tumors	\$125,000	2023-2025	R. Charest-Morin	C Bettegowda,N Dea, S Yip
BCCH Research Institute (BCCHRI)	Datamining Patient Characteristics to Prognosticate Pediatric Epilepsy Surgery– A Retrospective Cohort Stud	\$3,600,000 total	2023-2026	M. Tamber	M Connolly, M Görges, T van Rooij, B Bjornson
CIHR	The cell-type-specific basis of epilepsy and treatment in the living human brain	\$250,000	2023	M. Cembrowski	M Fatehi
BC Cancer Emerging Multidisciplinary Research Programs competition	ReCoN – Targeting Drivers of Lethal Glioma Brain Tumours	\$1,200,000	2024-2027	Chen	M Fatehi, R Harrison, M Marra, P Sorensen, S Yip
Brain Canada Momentum Grant	The cell-type-specific basis of epilepsy and treatment in the living human brain	\$200,000	2024-2025	M. Cembrowski	M Fatehi, G Redekop, McGuire
Parkinson Canada New Investigator	Network signatures of non-motor symptom outcomes following deep brain stimulation in Parkinson’s disease	\$132,000	2024-2027	S. Lang	
Vancouver Coastal Health Research Institute	Mentored Clinician Scientist Award	\$150,000	2024-2026	S. Lang	
UBC Department of Surgery Pilot Project Grant	Simultaneous functional MRI and Deep Brain Stimulation	\$15,000	2024-2025	S. Lang	
Brain Tumor Foundation of Canada Research	Simulating brain tumor resection to optimize onco-functional balance	\$25,000	2024-2026	S. Lang	M. Fatehi S. Makarenko

Adult Hydrocephalus Clinical Research Network (AHCNRN)	Randomized, Blinded, Placebo-Controlled Trial of Shunt Surgery in Idiopathic Normal Pressure Hydrocephalus	\$5,000,000	2023-2027	T Zwimpfer	
Karen Mann Catalyst Grant in Medical Education	Exploring anatomy knowledge in acute care surgical practice	\$90,000	2024-	F. Haji	L. Streith
International Development, Aid and Collaboration Program, Royal College Canada International	Developing post-graduate Surgical Oncology training in West Africa	\$90,000	2024-	S. Nanji	F. Haji
International Development, Aid and Collaboration Program	Implementation of Essential Surgical Skills Training in Rural Central African Republic	\$90,000	2024-	S.Joharifard	F. Haji
Royal College Foundation Canadian Aid and Action Fund	Creating a virtual education platform for rural surgical providers across Canada	\$45,000	2024-	E. Joos	F. Haji
Establishing An International Core Outcome Set for Subarachnoid Hemorrhage (SAH)	CIHR	\$726,000	2024-2027	G Redekop Co-Investigator	Shane English (Ottawa), PI
Establishing An International Core Outcome Set for Subarachnoid Hemorrhage (SAH)	Heart & Stroke Foundation of Canada	\$144,000	2024-2027	G Redekop Co-Investigator	Shane English (Ottawa), PI

Publications

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85. The Influence of Comminution and Posterior Ligamentous Complex Integrity on Treatment Decision Making in Thoracolumbar Burst Fractures Without Neurologic Deficit? Aly MM, **Dandurand C**, Dvorak MF, et al. *Global Spine J.* 2024 Feb;14(1_suppl):41S-48S. doi: 10.1177/21925682231196452. PMID: 38324603
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88. Treatment of hydrocephalus following posterior fossa tumor resection: a multicenter collaboration from the Hydrocephalus Clinical Research Network. Dewan MC, Isaacs AM, Cools MJ, Yengo-Kahn A, Naftel RP, Jensen H, Reeder RW, Holubkov R, Haizel-Cobbina J, Riva-Cambrin J, Jafrani RJ, Pindrik JA, Jackson EM, Judy BF, Kurudza E, Pollack IF, Mcdowell MM, Hankinson TC, Staulcup S, Hauptman J, Hall K, **Tamber MS**, Cheong A, Warsi NM, Rocque BG, Saccomano BW, Snyder RI, Kulkarni AV, Kestle JRW, Wellons JC 3rd J. *Neurooncol.*, 2023 [PMID: 37129738].
89. Treatment of intramedullary spinal cord tumors: a modified Delphi technique of the North American Spine Society Section of Spine Oncology. Hersh AM, Pennington Z, Lubelski D, Elsamadicy AA, **Dea N**, Desai A, Gokaslan ZL, Goodwin CR, Hsu W, Jallo GI, Krishnaney A, Laufer I, Lo SL, Macki M, Mehta AI, Ozturk A, Shin JH, Soliman H, Sciubba DM. *J Neurosurg Spine.* 2023 Oct 13;40(1):1-10. doi: 10.3171/2023.8.SPINE23190. Print 2024 Jan 1. PMID: 37856379
90. Understanding Decision Making as It Influences Treatment in Thoracolumbar Burst Fractures Without Neurological Deficit: Conceptual Framework and Methodology. **Dandurand C**, Öner CF, et al. *Global Spine J.* 2024 Feb;14(1_suppl):8S-16S. doi: 10.1177/21925682231210183. PMID: 38324598
91. Use of Jugular Venous Pressure to Optimize Outcomes of Vestibular Schwannoma Resection: A Review of the Literature and Proof of Concept. Benjamin Brakel, Jessica Wang, Jeremy Kam, Henrik Huttunen, Bali Dhaliwal, Jon McEwen, Brian Westerberg, **Serge Makarenko, Ryojo Akagami**. *Journal of Neurological Surgery*, May 13, 2024 ISSN 2193-6331
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93. Ventral targeted anterior capsulotomy for treatment-resistant depression and obsessive-compulsive disorder: a treatment method with cases. Hurwitz TA, Avecillas-Chasin JM, Bogod NM, **Honey CR**. *Journal of Affective Disorders* 2024 350:887-894. doi: 10.1016/j.jad.2024.01.176.
94. Vertebral Artery Mobilization During Transcondylar Extreme Far Lateral Approach for Excision of Large Foramen Magnum Meningioma: 2-Dimensional Operative Video. Jeremy Kam, Mendel Castle-Kirszbaum, Celine Hounget, Hannah Schoenroth, Benjamin Brakel, **Serge Makarenko, Peter Gooderham, Ryojo Akagami**. *Operative Neurosurgery* Vol.00;1, 2024. Doi.org/10.1227/ons.0000000000001135
95. What Factors Influence Surgeons in Decision-Making in Thoracolumbar Burst Fractures? A Survey-Based Investigation of a Panel of Spine Surgery Experts. Schnake KJ, Dvorak MF, Öner CF, **Dandurand C**, Muijs S, Bigdon SF. *Global Spine J.* 2024 Feb;14(1_suppl):62S-65S. doi: 10.1177/21925682231211286. PMID: 38324596

Presentations

1. Alhasanie K, **Haji F**, Eva K, Walker J. The Implications of Geopolitical Conflicts on Medical Education Systems: Lessons from the Syrian War. 2023 CHES Celebration of Scholarship, Vancouver, BC, October 3, 2023.
2. **Akagami R**. Advances in surgical approaches to vestibular schwannoma. 2024 Candian Neurological Sciences Federation Congress
3. **Akagami R**. Neurosurgical complications: Real-life Lesson and Consequences. 2024 Candian Neurological Sciences Federation Congress
4. Brakel B, Westerberg B, **Akagami R**, **Makarenko S**. Use of Jugular Venous Pressure to Optimize Outcomes of Vestibular Schwannoma Resection: A Review of the Literature and Proof of Concept. Chung Research Day. Vancouver, British Columbia 2024
5. Cembrowski M, Kraus L, Bristow B, Fatehi M, **Redekop G**. Cell-type specific dysregulations in the epileptic human brain. Canadian Association for Neuroscience annual meeting. Vancouver, BC. May 2024.
6. Choi Y, **Makarenko S**. The Impact of Pre-operative Corticosteroid Use on Intra-operative Diagnosis of PCNSL. Chung Research Day. Vancouver, British Columbia. Podium Presentation, 2024
7. **Dandurand C**. Symposium hosted by AO KF trauma & infections May 18th 2024: Solving treatment variability for thoracolumbar burst fractures
Global Spine Congress 2024
8. **Dandurand C**. The role of MIS surgery in TL A3A4 fracture
Global Spine Congress 2024
9. **Dandurand C**. Health economic analysis of neurologically intact thoracolumbar A3 and A4 fractures is dominant in supporting surgery over nonsurgical treatment.
(best paper)
NASS 2024
10. **Dandurand C**.: A data-driven approach to categorize patients with degenerative cervical myelopathy: a K-prototype clustering analysis of the CSORN DCM database.
Global Spine Congress 2024
11. **Dea N**. Surgical Considerations in the Treatment of Spinal Metastatic Disease
2023 British Columbia Cancer Agency Summit, Vancouver, November 2023
12. **Dea N**. Previously untreated chordoma: Surgery or Radiation.
2024 Spine Summit, Las Vegas, February 2024
13. **Dea N**. Metastatic Spine Surgery: When should we say no to surgery
2024 Global Spine Conference, Bangkok, May 2024
14. **Dea N**. Surgical Considerations in the Treatment of the Spinal Metastatic Disease

15. **Dea N.** Zaldivar J. Cervical Spine Chordomas: Surgical Outcome Assessment in a Multicenter Cohort from the AO Spine Primary Tumor Research and Outcome Network. (Benzel Research Award Abstract Winner)
Spine Summit 2024, Las Vegas, USA, February 2024
16. **Dea N,** Zaldivar J. Cervical Spine Chordomas: Surgical Outcome Assessment in a Multicenter Cohort From the Primary Tumor Research and Outcomes Network (PTRON).
Global Spine Conference. Bangkok, Thailand, May 2024.
17. Elder M, Watson I, Weir A, **Singhal A, Haji F, Tamber MS.** Implementation of an Early Intervention Management Pathway for Intraventricular Hemorrhage of Prematurity: A Quality Improvement Analysis Including Resource Utilization.
Annual Meeting of the International Society for Pediatric Neurosurgery, Toronto, October 2024.
18. Elder M, Watson I, Weir **A, Singhal A, Haji F, Tamber MS.** Implementation of BC Children's Hospital Intraventricular Hemorrhage of Prematurity Management Pathway: A Quality Improvement Analysis.
2024 Canadian Neurological Sciences Foundation Congress, Toronto, ON, May 2024
19. English S, and the SAHara Trial Investigators (**Redekop G**). Liberal or Restrictive Transfusion Strategy in Aneurysmal Subarachnoid Hemorrhage. Critical Care Review (CCR) Meeting.
Melbourne, Australia. December 2024.
20. Evaniew N, Coyle M, Rampersaud YR, Bailey CS, Jacobs WB, Cadotte DW, Thomas KC, Attabib N, Paquet J, Nataraj A, Christie SD, Weber MH, Phan P, Charest-Morin R, Fisher CG, Hall H, McIntosh G, Dea N. Timing of Recovery After Surgery for Patients with Degenerative Cervical Myelopathy: An Observational Study From the Canadian Spine Outcomes and Research Network.
North American Spine Society Annual Meeting, Los Angeles, USA, October 2023
21. Evaniew N, Bailey CS, Rampersaud YR, Jacobs WB, Phan P, Nataraj A, Cadotte DW, Weber MH, Thomas KC, Manson N, Attabib N, Paquet J, Christie SD, Wilson JR, Hall H, Fisher CG, McIntosh G, Dea N. Anterior vs Posterior Surgery for Patients with Degenerative Cervical Myelopathy: An Observational Study From the Canadian Spine Outcomes and Research Network.
Global Spine Conference. Bangkok, Thailand, May 2024.
22. **Fatehi M.** Brain tumor related epilepsy.
2024 Candian Neurological Sciences Federation Congress
23. Faran M., Pietramala D., Schmidt F., Polyhronopoulos N., Sandhu M., Dong J., Vila-Rodriguez F., **Honey C., Lang S.** Sex Disparity in Parkinson's Disease Patients Undergoing Deep Brain Stimulation: A Single-Centre, Retrospective Cohort Study.
World Society for Stereotactic and Functional Neurosurgery 2024
24. Faran M., Pietramala D., Schmidt F., Polyhronopoulos N., Sandhu M., Dong J., Vila-Rodriguez F., **Honey C., Lang S.** Emotional Wellbeing After Bilateral Deep Brain Stimulation of the Subthalamic Nucleus for Parkinson's Disease: A Retrospective Cohort Study.
American Society for Stereotactic and Functional Neurosurgery 2024

25. Gariscsak P, Braund H, **Haji F**. Does Sequence Matter? Effect of Simulated Environment Complexity on Cognitive Load and Learning.
International Conference on Academic Medicine, Vancouver, BC, April 12-15, 2024.
26. **Haji F**, Streith L. What makes an expert, an expert? Roundtable Presentation,
2023 CHES Celebration of Scholarship, Vancouver, BC, October 3, 2023.
27. Ho B, Hu A, **Honey CR**. VANCOUVER syndrome: a curable neurogenic cough.
Fall Voice Conference, Phoenix, Oct 24-26, 2024
28. **Honey CR**. The Vagal Rhizopathies.
UBC Neurosurgery Grand Rounds, Vancouver, Sept 12, 2024
29. **Honey CR**. DBS for spasmodic dysphonia: a new field with a surprising target.
UK and Ireland Neuromodulation Society annual meeting, Dublin, Ireland, October 3, 2024
30. **Honey CR**. Pain procedures in palliative care. A North American Perspective.
Royal Marsden Hospital Pain Conference, London, UK, December 6, 2024
31. Lai R, Dundon B, Williamson M, **Haji F**. Creating a database to track the natural history and surgical outcomes of pediatric patients with spinal dysraphism followed in the British Columbia Children's Hospital Spinal Cord Clinic.
BCCH research institute research day, July 27, 2023.
32. **Lang S**. Non-motor outcomes of Deep Brain Stimulation in Parkinson's Disease: summary of the current evidence of how DBS affects the non-motor symptoms of PD.
Parkinson BC Regional Conference. Richmond, BC. 2024
33. **Lang S**. MR guided High Intensity Focused Ultrasound- an overview.
Pacific Parkinson Research Institute Annual Scientific Briefing, 2024
34. **Lang S**. Deep brain stimulation: a general overview.
Parkinson Canada Charity Event: Rhythms of Resilience. Vancouver, 2024
35. **Lang S**. Deep brain stimulation for dystonia and tremor: an overview.
International Neuromodulation Society Biannual meeting, 2024
36. **Lang S**. Low Intensity Focused Ultrasound Neuromodulation.
Canadian Neuromodulation Society Journal Club Presentation. 2024
37. Li J, Almeida L, Wang J, Yao S, **Makarenko S**, et al. Population-Based Local Control and Survival Outcomes of Brain Post-Metastasectomy Adjuvant Radiotherapy Versus Observation.
Chung Research Day. Vancouver, British Columbia 2024
38. **Makarenko S**. Advances in Surgical Management of Gliomas.
Neuro-Oncology Speakers, Vancouver, British Columbia. February 2024.
39. **Makarenko S**. Grade 3 meningioma survival and recurrence outcomes in an international multicenter cohort.
International Consortium of Meningiomas Toronto, Ontario. June 2024

40. Mizubuti GB, Arellano R, Maxwell S, Phelan R, Braund H, Dalgarno N, Hobbs H, Szulewski A, **Haji F**. Identifying Resident Competencies for Point-of-Care Ultrasound in Anesthesia Using a National Delphi Method.
International Conference on Residency Education, Halifax, NS, October 19-21, 2023.
41. Moien Afshari F, Agha Khani Y, Hrazdil C, Percy J, Fatehi M, **Redekop G**. Vagus Nerve Stimulation (VNS): Who Benefits Most in the Long Run? American Epilepsy Society annual meeting. Los Angeles, CA. December 2024.
42. Jakopin NE, Myong E, Bogucki T, Gray D, Gross P, McComb JG, Shannon CN, **Tamber MS**, Toyama M, van der Willigen T, Yazdani A, Hamilton MG, Koschnitzky JE, Chau MJ. Establishing Ranked Priorities for Future Hydrocephalus Research.
15th Meeting of the Hydrocephalus Society, Hamburg, Germany, August 2023
43. Richards C, Watson I, Haji F, Singhal A, Tamber M. Pediatric Intracranial Infections Complicating Bacterial Sinusitis in British Columbia.
American Society of Pediatric Neurosurgery Meeting, Hawaii, January 25, 2024.
44. Richards C, Watson I, **Singhal A, Haji F, Tamber MS**. COVID-Related Changes in the Epidemiology of Infective Intracranial Complications of Bacterial Sinusitis in British Columbia.
47th Annual Meeting of the American Society of Pediatric Neurosurgery Annual Meeting, Maui, HI, January 2024
45. Shergill K, Westerberg B, **Akagami R, Makarenko S**. Comparing Outcomes of Solo Neurosurgical versus Multidisciplinary Approaches in Retrosigmoid Resection of Vestibular Schwannomas.
Chung Research Day. Vancouver, British Columbia. 2024
46. Streith L, Teunissen P, **Haji F**. At It's Core: The Foundational Role of Anatomy in Surgical Communication, Decision-Making, and Practice.
International Conference on Academic Medicine, Vancouver, BC, April 12-15, 2024.
47. Streith L, Teunissen P, **Haji F**. Surgical anatomy as praxis: an initial exploration into surgical cognition.
2023 CHES Celebration of Scholarship, Vancouver, BC, October 3, 2023.
48. **Tamber M**. Randomized Controlled Trials. Vancouver Spine Surgery Program Research Presentation. Vancouver General Hospital, November 1, 2023
49. **Tamber M**. Cohort Studies. Vancouver Spine Surgery Program Research Presentation. Vancouver General Hospital, December 6, 2023
50. **Tamber M**. COVID-Related Changes in the Epidemiology of Infective Intracranial Complications of Bacterial Sinusitis in British Columbia.
22nd Annual Caribbean Neurosciences Symposium (virtual). February 9, 2024
51. **Tamber M**. Under Pressure – Things That Go Lump in the Head. Child Health BC – Pediatric Critical Care Learning (PCCL) Online Webinar(virtual). February 16, 2024

52. **Tamber M.** Automated Lesion Detection in Epilepsy. Pediatric Neuroradiology Grand Rounds, BC Children's Hospital, April 30, 2024.
53. **Tso MK,** et al. Aneurysm Case. Canadian Interventional Neuro Group (CING) Meeting (Niagara On the Lake, ON) · May 25, 2024
54. **Zwimfer T,** et al. Long-term Cognitive and Gait Outcomes after Primary Endoscopic Third Ventriculostomy (ETV) in Adults from the AHCRN with Chronic Obstructive Hydrocephalus. International Society of Hydrocephalus and CSF Disorders meeting, Hamburg, Germany Aug. 2023.