THE UNIVERSITY OF BRITISH COLUMBIA

Curriculum Vitae for Faculty Members

Date: July, 2025 **Initials:** AMW

1. **SURNAME:** Weber **FIRSTNAME:** Alexander
   MIDDLE NAME(S): Mark
2. **DEPARTMENT/SCHOOL:** Pediatrics, Division of Neurology
3. **FACULTY:** Medicine
4. **PRESENT RANK:** Assistant Professor (Partner)
   SINCE: 18/06/2020

5. POST-SECONDARY EDUCATION

Institution	*Degree*	*Subject Area*	*Supervisors*	*Dates*
University of Toronto	Honours Bachelor of Science[1]	Chemistry with double minor in mathematics and philosophy	Dr. C Goh	2003-2007
University of Toronto	Master of Science	Physiology and Neuroscience[2] Thesis: *Single Channel Conductance of the CaV2.2 Calcium Channel*	Dr. EF Stanley	2007-2009
McMaster University	Doctor of Philosophy	Biomedical Engineering Thesis: *Magnetic Resonance Imaging Analysis of Neural Circuit Abnormalities in: Medication Naïve Children with Obsessive-Compulsive Disorder, and Normal Healthy Adults During Acute Alcohol Intoxication*	Dr. MD Noseworthy Dr. N Soreni	2009-2013

[1] *Graduated with high distinction*

[2] *Department of Physiology with a Collaborative Program in Neuroscience*

Special Professional Qualifications

Qualification	*Dates*
Applied Suicide Intervention Skills Training (ASIST), Living Works, Whitehorse, YT	2014
GE Pulse Programming and MRI Science Course	2016
Foundations of Pedagogy 1, Centre for the Integration of Research, Teaching and Learning, UBC, Vancouver, BC	2018
Philips Clinical Science Workshop (Sequence Development, Reconstruction, and Pulse Programming), UBC, Vancouver, BC	2019
Biostatistics Workshop Series, Research Education, BCCHRI, Vancouver, BC	2019
SFU Research Computing Summer School, SFU's Big Data Hub, SFU, Vancouver, BC	2019

6. EMPLOYMENT RECORD

(a) Prior to coming to UBC

University, Company or Organization	*Rank or Title*	*Dates*
University of Toronto, Toronto, ON	NSERC Student Fellowship	May-Aug 2006
Blooming Acres, Barrie, ON	Autistic Residence Front Line Staff	Summer 2007
CUPE Local 3906, McMaster University, Hamilton, ON	Union Bargaining Team – Post Doctoral Unit	Jun 2011 – Feb 2012
CUPE Local 3906, McMaster University, Hamilton, ON	Executive Member and Grievance Officer	Oct 2012 – Aug 2013
CUPE Local 3906, McMaster University, Hamilton, ON	Staff Supervisor	Dec 2012 – Aug 2013
Residential Youth Treatment Services, Health and Safety Services, Whitehorse, YT	Residential Care Worker	Nov 2013 – Sept 2015
What's Up Yukon, Whitehorse, YT	Freelance Writer	Jan 2015 – 2019

(b) At UBC

Department	*Rank or Title*	*Dates*
UBC Dept. of Pediatrics / Division of Neurology	Postdoctoral Research Fellow	Oct 2015 – Jun 2019
BC Children's Research Institute	Staff Scientist / Independent Investigator	July 2019 – Present
UBC Dept. of Pediatrics / Division of Neurology	Assistant Professor (Partner)	June 2020 – Present
UBC Dept. of Neuroscience	Associate Member	July 2020 – Present
UBC School of Biomedical Engineering	Associate Member	July 2020 – Present
UBC Women+ and Children's Health Program	Member and Graduate Student Supervisor	Feb 2022 – Present
UBC Djavad Mowafaghian Centre for Brain Health	Full Member	March 2022 – Present
BCCH MRI Research Facility	Key Partner for BCCHRI Imaging Platform Development for Research Services	Dec 2024 - Present

In 2015-2019, I completed a postdoctoral fellowship in Dr Alexander Rauscher's lab (UBC), where I was able to add a wide variety of MRI techniques to my skill-set, and applied them in various subject groups. My postdoctoral research was mainly focused on combining diffusion tensor imaging (DTI), myelin water imaging (MWI), and susceptibility based imaging techniques (such as quantitative susceptibility mapping (QSM) and R_2^* mapping) in novel ways to better understand white matter damage and development. Work from that time resulted in a publication in *Frontiers in Neurology*, which used DTI and QSM, along with previously published MWI results from the same study, to persuasively demonstrate that varsity ice-hockey concussion damage seen at two-weeks post-injury was likely a result of myelin sheaths 'loosening', or 'unraveling', as opposed to complete disintegration, as previously thought. This publication gained significant attention in the media, for which I was interviewed for three television interviews (two for Global News and one on CityTV's Breakfast Television).

I was appointed an Independent Investigator at BCCHR in July 2019, and in June 2020 was appointed as Assistant Professor (Partner) in the Dept of Pediatrics, UBC. I spent the first year (2019-2020) setting up my lab, finishing up previous work and publishing papers, as well as started networking and collaborating on potential new projects. I submitted several grants as PI (Brain Canada, CIHR Catalyst

Grant, NSERC Discovery Grant) and joined several grants as co-applicant. I also started a monthly MRI Journal Club, taught a course in Clinical Research Methods, and hired a co-op student at the beginning of the summer of 2020. I have since established myself as: i) an expert in measuring cerebrovascular health in the brain using novel MRI techniques; ii) an expert in the fractal nature of brain signalling using functional MRI; and a jack-of-all-trades with respect to multi-modal quantitative MRI. I have been the Primary Supervisor for several graduate and undergraduate students, all of whom have graduated on time, and have published first-author manuscripts. For the winter 2024 semester, I taught a graduate course I developed for the Women+ and Children's Health Sciences program: WACH505 - Fundamentals of Magnetic Resonance Imaging. In 2024 I received an NSERC Discovery Grant to continue my fractal analysis research in the developing brain.

Imaging the developing brain is an exciting and challenging field that I am passionate about. With greater technological advances in perinatal and neonatal care, more preterm infants are being born and surviving into adulthood. Up to half of preterm infants develop neurological, cognitive, and motor deficits later in life. At the same time, infants born at term are also susceptible to acquired brain injuries. Better understanding of this critical period in brain growth could shed light on both normal fetal brain development and neural plasticity and compensation from injuries. Furthermore, sensitive and specific imaging markers for brain tissue and repair are crucial for measuring potential treatment effects objectively and early.

(c) Date of granting of tenure at UBC

N/A

7. LEAVES OF ABSENCE AND DELAYS

March 2020 to March 2022: The global COVID-19 pandemic delayed my progress in establishing my independent research program: it forced me to work from home, affected my mental health, reduced face-to-face interactions with other researchers on a daily basis, reduced time spent at the MRI Centre, made recruitment of volunteers more difficult, and more.

8. TEACHING

(a) Areas of special interest and accomplishments

Through teaching, I hope to share with my students a deep understanding of not only why we believe what we believe today, but also show them how we got there, and hopefully motivate them to push into new levels of understanding. In order to properly educate, one must be both informed of and ready to apply the most up-to-date evidence-based pedagogical practices. Thus, I strive to continuously improve upon what I have learned, and to keep up with the field. True learning, however, appears to occur when students are actively engaged with the content (Hake, 1997; Wieman, 2014). This means that, as a lecturer, I aim to fill my class time with activities that have been proven to engage and motivate, encourage collaboration, and reach higher levels of learning - such as analyzing, synthesizing, and evaluating - across factual, conceptual, procedural, and metacognitive knowledge.

My biggest accomplishment in Teaching has been developing, from scratch, a graduate program for the Women+ and Children's Health Sciences: WACH505 - Fundamentals of Magnetic Resonance Imaging. See below for more details.

(b) Courses Taught

Year	*Course #*	*Hours*	*Class Size*	*Contact Hrs*	*Taught*			
					Lec	*Tut*	*Lab*	[1] *Other*
2009W	CHEM 1A03/1E03	130	50			65	65	
2011W	CHEM 1A03/1E03	130	50			130		
2012W	CHEM 1A03/1E03	130	50			130		
2013W	BIOCHEM 3D03	130	140					130
2020	Pediatric Neurology Research Curriculum	100	15		10			90
2020	BMEG 557	20	15		1			19
2021	BMEG 557	20	15		1			19
2022	Pediatric Neurology Research Curriculum	20			2			18
2022	BMEG 557	20	15		1			19
2022	Precision Health Analysis Bootcamp fMRI Analysis Parts I and II	80	30		4			76
2023	Pediatric Neurology Research Curriculum	20			2			18
2023	BMEG 557	20	15		1			19
2023	WACH502	20	23		1.5			18.5
2024	WACH505	520	15	20	50			470
2024	BMEG 557	20	15		1			19
2025	Pediatric Neurology Research Curriculum	20			2			18

[1] Other includes preparation time for lectures, meetings, etc.

Brief Descriptions of the Principal Courses I Taught:

CHEM 1A03/1AA3 & 1E03–Introductory Chemistry I / II & General Chemistry for Engineers: In this large-class undergraduate course, we discussed chemical concepts, theories, and examples of fundamental chemistry, applied these concepts to current examples within the themes of health, energy, the environment, and materials, and helped to develop skills needed to solve chemical problems. I also helped run the first of a now annual 'special lab group' made up of gifted first year students. This group was tasked with choosing a chemistry problem in industry and attempting to solve it.

BIOCHEM 3D03 – Metabolism and Regulation: An introduction to key principles in intermediary metabolism, covering principles of bioenergetics, major pathways for carbohydrates, proteins and lipids in energy production, nitrogen metabolism, biosynthesis of small molecules, as well as the integration and regulation of metabolic activities.

Pediatric Neurology Research Curriculum: Introduction to Clinical Research Methods: In this small seminar style course targeted towards medical residents and fellows in the department of pediatrics, we cover the basics of clinical research methods, ranging from how to formulate a research question, write a study plan, choose study subjects, increase precision and accuracy in measurements, estimating sample size, all the way to designing cohort, cross-sectional, and case-control studies. More advanced topics include how to enhance causal inference in observational studies, how to design a randomized blinded trial, alternative trial designs, and how to design studies of medical tests.

BMEG 557 - Statistical Methods in Evaluating Medical Technologies: The objective of this course is to teach biomedical engineering students the important principles of applied biostatistics. This is an introductory course for those students who will use the knowledge they acquire to continue learning more advanced techniques in future biostatistical course work. The course is designed to help students: (a) understand and employ the concepts and fundamental principles of one of the core disciplines of healthcare industry, (b) to interact effectively with medical professionals in hospitals, medical clinics, and medical or clinical laboratory research centers in various collaborative endeavors, and (c) to intelligently read and analyze journal articles and technical reports that use biostatistical methods and use them in the advancement of their careers in different medical or healthcare industries.

Precision Health Analysis Bootcamp: Fmri Analysis Parts I & II: The focus of this course/bootcamp is to first explain the basic concepts behind functional MRI, and then focus on the data preprocessing and core tools/file formats. A tutorial portion with live coding helps students understand how to create a python virtual environment, install a singularity image, and how to call singularity inside a PBS script. The second session focused on freesurfer and DTI preprocessing: both as a lecture explaining the basic concepts, and as a tutorial on how to run modules and programs on Sockeye at UBC.

WACH 502: Seminars in Women+ and Children's Health: Biological and social determinants of health, health equity and inclusion. My lecture focuses on Magnetic Resonance Imaging in Child Health and Disease.

WACH 505: Fundamentals of Magnetic Resonance Imaging: This course introduces students to the basic concepts underlying magnetic resonance imaging (MRI). The course starts with a historical overview of medical imaging in general, leading to the development of MRI. It then introduces basic physical concepts used in MRI and some of the basic principles. Expanding on these concepts, we cover image weighting and contrast, special encoding and image formation, parameters and pulse sequences, instrumentation, and equipment. Students learn what magnetic resonance phenomenon is, how magnetic resonance signals are generated, how an image can be made using MRI, and how soft tissue contrast can change with imaging parameters. We also introduce MR imaging sequences of spin echo, gradient echo, fast spin echo, echo planar imaging, inversion recovery, etc. Finally, we cover more advanced MRI techniques such as functional, diffusion, quantitative, phase-based, spectroscopy MRI, and more. As there are no prerequisites for this course, all concepts are taught and explained in an intuitive format with minimal mathematics.

(c) Other Teaching of Undergraduates, Graduates and Postgraduates

In addition to the teaching described above, I am an associate member in the Department of Neuroscience and The School of Biomedical Engineering at UBC. Through my supervision of students doing research with me, I teach the physics of MR imaging, its application in biomedical research, statistical concepts, software programming and troubleshooting, the philosophy and practice of science, as well as writing skills. This informal teaching occurs in one-on-one discussions, group discussions, weekly lab meetings, and various assignments.

(d) Students Supervised

Level	Total	Current	Completed
Undergraduate Students	7	2	5
Graduate Students	5	0	5
Postgraduate MD	1	0	1

Summer, Co-op, and Undergraduate Students Supervised

Total: 7 (2 current, 5 completed)
Summer Student Total: 2 (0 current, 2 completed)
Co-op Student Total: 3 (1 current, 2 completed)
Undergraduate Student Total: 2 (1 current, 1 completed)

Student Name	*Program Type*	*Year*		*Supervisory Role*	*Achievements*
		Start	*Finish*		
Summer Students					
Anna Pukropski	German Academic Exchange Service (DAAD)	Aug 2016	Nov 2016	Co-Supervisor	Shared first author publication (Frontiers Neurology); Obtained her Masters
Serafina Ermolenko	Volunteer	May 2024	September 2024	Primary Supervisor	
Co-op Students					
Olivia Campbell	UBC Co-op Student Combined Major in Computer Science, Life Science, and Physics	May 2020	May 2021	Primary Supervisor	BB&D Research Day: Lightning Talk 2020
Johann Drayne	UBC Co-op Student, Honours Physics	Jan 2021	Aug 2021	Primary Supervisor	ISMRM 2022 Oral presentation; One first-author paper
Undergraduate Students					
Thomas Carmichael	UBC Honours Integrated Sciences (Thesis based)	Sept 2023	April 2024	Primary Supervisor	
Floria Lu	Volunteer (Summer Student starting May 2025)	May 2024	Present	Primary Supervisor	2025 Faculty of Medicine Summer Student Research Program (FoM SSRP) $2,800; One first author paper (in preparation)
Erhan Asad-Javed	UBC Co-op Student Mathematics & Data Science	May 2025	Present	Primary Supervisor	

Graduate Students Supervised

Total: 5 (0 current, 5 completed)
M. Sc. Total 5; (0 current, 5 completed)
Ph. D. Total 0; (0 current, 0 completed)

Student Name	*Program Type*	*Year*		*Supervisory Role*	*Department*	*Achievements*
		Start	*Finish*			
Masters						

Anna Zhu	MASc	May 2021	Aug 2023	Primary Supervisor	School of Biomedical Engineering	BB&D Research Day: Graduate Student Poster Award 2021; ISMRM 2022 Poster; One second-author paper (Pediatric Research); One first-author paper (submitted)
Allison Mella	MSc	September 2021	Aug 2023	Primary Supervisor	Dept of Neuroscience	Syd Vernon Graduate Student Award 2021W ($3,500); Faculty of Medicine Graduate Award 2021W ($4,500); Trainee Boost Award ($5,000); ISMRM 2023 Oral Presentation; One first author paper (Cerebral Cortex); one second author paper (PLOS Complex Systems).
Olivia Campbell	MASc (May - Oct); MEng	May 2021	April 2022	Primary Supervisor	School of Biomedical Engineering	Several posters. Two first-author publications (Frontiers in Physiology; and Human Brain Mapping); one co-author publication (Topics in Spinal Cord Injury Rehabilitation) Switched to MEng Oct 2021
Evelyn Armour	MEng	Nov 2021	Aug 2022	Co-supervisor	School of Biomedical Engineering	Internship; Several posters; Best Poster Award at DOHaD 2022; Currently a medical student at the University of Alberta
Lydia Sochan	MASc	September 2022	June 2024	Primary Supervisor	School of Biomedical Engineering	Effie I. Lefeaux Scholarship in Intellectual Disability 2023W ($2,100); Syd Vernon Graduate Student Award 2023W ($2,000); 2023 ISMRM Educational Stipend ($825); BB&D Trainee Travel Grant Award; One first author paper (Under Review)
PhD						

Postgraduate Students Supervised

Total: 1 (0 current, 1 completed)
MD Postdoctoral Fellows Total: 1 (0 current, 1 completed)
Clinical Fellows Total: 0 (0 current, 0 completed)
Residents Total: 0 (0 current, 0 completed)

Student Name	***Program Start***	***Year***		***Supervisor***	***Co-Supervisor***	***Achievements***
		Finish				
Yuting Zhang	Radiology	Feb 2018	Feb 2019	Weber	Rauscher	Topic: Advanced quantitative brain imaging investigation of preterm and term injured neonates, along with healthy term controls. One first author publication (Am J Neuroradiology); two second author publications (NMR Biomedicine; Am J Neuroradiology)
Clinical Fellows						
Residents						

Graduate Student Supervisory Committees

Total: 5 (4 current, 1 completed)
M. Sc. Total: 4 (3 current, 1 completed)
Ph. D. Total: 1 (1 current, 0 completed)

Student Name	*Program Type*	*Year*		*Supervisory Role*	*Department*	*Achievements*
		Start	*Finish*			
Masters						
Vanessa Diamond	Thesis	Jan 2022	April 2024	Committee member; Supervisor: Jonathan Rayment	Experimental Medicine	Multiple international posters; one first author publication (JMRI in revision); another first author paper being written (Acad Radiol); one second author publication (Eur Resp J)
Layan Bashi	Thesis	Sept 2022	Present	Committee member; Supervisor: Sharon Dell	WACH	
Sarah Tischer	Thesis	Sept 2024	Present	Committee member; Supervisor: Jill Zwicker	Graduate Programs in Rehabilitation Sciences	
Carson Leach	Thesis	2025	Present	Committee member; Supervisor: Shubhayan Sanatani	WACH+	
PhD						
Siara Kainth	Thesis	Sep 2023	Present	Committee member; Supervisor: Jill Zwicker	Graduate Programs in Rehabilitation Sciences	

Research Staff Supervision

Name	*Program Type*	*Start*	*Finish*	*Principal Investigator*	*Achievements*
Isabel Wilson, BSc	Research Assistant	Sept 2024	Present	Alexander Weber	One first author paper (in preparation)

(e) Continuing Education Activities

1) Activities as presenter/facilitator at Continuing Medical Education or Continuing Professional Development courses (UBC and non-UBC)

2) CME / CPD activities as an attendee

1. **Foundations of Pedagogy** Fall 2018
   Centre for Teaching, Learning and Technology, UBC
   Learned concepts in evidence-based teaching to effectively teach a lesson in a STEM undergraduate classroom, with emphasis on alignment of learning objectives, activities, and assessment.
2. **Teaching and Learning Fellows Development Series** Spring 2019
   Faculty of Science and Centre for Teaching, Learning and Technology, UBC
   Integrated a learning community model to establish networking connections for postdoctoral fellows pursuing pedagogical issues, as well as foster multidisciplinary curricula, and incorporate community into higher education.
3. **Biostatistics Workshop Series** Fall 2019
   Research Education, BCCHRI, Vancouver, BC
   Taught by Boris Kuzeljevic, this workshop covered topics such as data manipulation, non-parametric statistics, correlation coefficients, inferential statistics, linear regression, logistic regression, and ROC curves.
4. **Faculty of Medicine Supervision Workshop** Jan 13th, 2021
   Graduate and Postdoctoral Studies, Faculty of Medicine, UBC, Vancouver, BC
   Lead by Theresa Rogers and Brianne Howard, this workshop covered topics such as how to be a good supervisor that supports healthy supervisory relationships. Covered challenging case-studies and discussed solutions.
5. **Supporting Excellent Graduate Supervisory Relationships** March 12th, 2021
   Graduate and Postdoctoral Studies, UBC, Vancouver, BC
   Lead by Theresa Rogers and Brianne Howard, this workshop covered topics such as how to be a good supervisor that supports healthy supervisory relationships. Covered challenging case-studies and discussed solutions.
6. **SBME Propels: Effective PI-Trainee Relationships** Oct 15th, 2021
   School of Biomedical Engineering, UBC, Vancouver, BC
   Lead by Brianne Howard and Theresa Rogers (UBC's Faculty of Graduate and Postdoctoral Studies). Topic: Building a strong student-supervisor relationship.
7. **SBME Propels: Authentic Leadership** Oct 29th, 2021
   School of Biomedical Engineering, UBC, Vancouver, BC
   Lead by Dr. Anne-Marie Sorrenti, Leadership Consultant & Executive Coach and Lecturer at the University of Toronto's Faculty of Engineering. Topic: Developing your personal authentic leadership style by discovering your values. This session will prepare you to view subsequent SBME Propels leadership sessions through your own personalized lens, informing how you can apply the concepts conveyed through the sessions to your own leadership style.
8. **SBME Propels: Situational Leadership** Nov 26th, 2021
   School of Biomedical Engineering, UBC, Vancouver, BC
   Lead by Pamela Potts, StarFish Medical's Director of People and Culture. Topic: Personalizing your management style for each member of your team
9. **Mentoring for Leadership Tea** Nov 29th, 2021
   BCCHR, Vancouver, BC

Lead by Jehannine Austin, the topic of this mentorship session was: Leading a research team, and the role of developing and defining a mission, vision, culture and values.

10. **SBME Propels: Wellbeing in Intellectually Demanding Careers** Jan 11th, 2022
School of Biomedical Engineering, UBC, Vancouver, BC
Lead by Carolina Tropini
11. **SBME Propels: Impostor Syndrome and Perfectionism** Feb 4th, 2022
School of Biomedical Engineering, UBC, Vancouver, BC
Lead by Isabeau
12. **SBME Propels: Nurturing the Next Generation** March 4th, 2022
School of Biomedical Engineering, UBC, Vancouver, BC
Lead by Leonard Foster
13. **Mentoring for Leadership Tea** April 1st, 2022
BCCHR, Vancouver, BC
Lead by Laura Sly: Graduate Student Supervision – Let's Rock The Boat
14. **Grants Architecture Workshop** May 4th, 2022
BCCHR, Vancouver, BC
Participants reviewed key aspects of the structure and presentation of a research proposal. Research grants are a visual product, so using concepts of visual and design thinking can help to develop a better, more easily read and reviewed proposal. Some simple, easy things can make a big difference for the reader. Facilitated by: Dr. Dawn McArthur, Director, Research & Technology Development, RTDO.
15. **CIHR Reviewer in Training (RiT) Program** Fall 2022
The RiT program offered Career Researchers (ECRs) a learning opportunity to gain a better understanding of the elements of high-quality review and the peer review process through direct participation in the Project Grant competition with the support of a Mentor. RiT participants were assigned three applications to conduct reviews, attend the peer review meeting, present their reviews, and participate in the committee meeting. Following completion of the RiT program, participants were promoted within CIHR's Reviewer Pathway and were expected to participate in peer review when requested and available to do so.
16. **Tips and Tricks on Applying to (Interdisciplinary) Grants and Establishing Collaborations as An Early Career Researcher** Feb 6th, 2023
UBC Translational Medicine Research Rounds, UBC, Vancvouer, BC
Lead by Juzer Kakai, this talk spoke about the funding landscape and resources available to Early Career Researchers to apply for grant funding. The discussion touched on how to cultivate collaborations and participate in interdisciplinary grant applications; meaningfully addressed questions pertaining to EDI and sex/gender considerations in proposals; and resources available to help one succeed in preparing funding applications.
17. **Grant Cycles: Getting Started, Keeping it Going, and Avoiding the Endless Loops** Dec 4th, 2023
BCCHR, Vancouver, BC
Lead by Dawn McArthur
18. **Supervision Workshop: Managing Effective Relationships with Your Graduate Students** Jan 22nd, 2024
WACH, Vancouver, BC
Shared resources to help refine supervision practices for seasoned faculty members. Included a framework to guide deeper and more meaningful supervisor and graduate student relationships and space to reflect on supervisory practices to date. The session was designed for faculty members with some existing experience supervising graduate students but was open to all interested faculty and postdoctoral fellows.

19. **Early Career Mentorship Workshop: Who's Doing What Now?** April 22nd, 2024
BCCHR, Vancouver BC
Project Management and Communication for Successful Projects facilitated by the Research Project Management Unit (RPMU)
20. **Supporting Graduate Students in Exploring Career Paths Beyond Academia**
June 18th, 2025
Joint workshop by UBC Career Centre and Graduate and Postdoctoral Studies, UBC, Vancouver, BC
This session offered practical strategies to help faculty engage in early, meaningful conversations that connect students' academic experiences to a wide range of career possibilities.

(f) Visiting Lecturer (indicate university/organization and dates)

(g) Educational Leadership

1. **Magnetic Resonance Imaging Journal Club (MRJC)** Jan 2020 - Present
Started a monthly journal club, in which I lead and facilitate monthly discussions on interesting scholarly articles in all things MR related. The MRJC aims to stimulate discussion of emerging MRI technologies, clinical and scientific applications, basic concepts, and its history.
2. **Precision Health Data Analysis Bootcamp** Summer 2022
Helped acquire funding, develop, and facilitate the Precision Health Data Analysis Bootcamp with Dr. Phillip Richmond and Lynne Williams.
3. **BCCH MRI Research Facility Wiki** Dec 2024
Created[1] and spearheaded a 'wiki' website for BCCH MRI Research Facility users. The website aims to provide a wealth of resources for neuroimaging data scientists in order to educate and empower users to plan their research, apply for grants, create their MRI protocol sequences, analyze their data, publish their work, and share their findings with the scientific and lay community.
[1] with help from Lynne Williams

(g) Curriculum Development & Innovation

1. **BMEG 557** Fall 2020
Helped develop this course with Dr. Sharareh Bayat (the primary lecturer). I helped with writing and developing the syllabus, the assignments, quizzes, and taught one lecture in December.
2. **Precision Health Analysis Bootcamp: fMRI Analysis Parts I and II** Summer 2022
Along with Phillip Richmond and Lynne Williams, helped develop this section (fMRI Analysis Parts I and II) for the Precision Health Analysis Bootcamp that was run over the summer of 2022. Originally Lynne Williams was supposed to present. However, after she sustained a bike-related concussion, I was asked to replace her. Lynne provided me with her fMRI slides from previous years, which I used as a framework to develop my course. However, I found there was not too much that was useful from those slides, and I prepared the 4 hours of slides and tutorials almost from scratch.
3. **WACH 505 (Fundamentals of Magnetic Resonance Imaging)** Winter 2023

Developed an MRI course for the new Women+ and Children's Health Graduate Program (2023) from scratch. This course introduces students to the basic concepts underlying magnetic resonance imaging (MRI). The course starts with a historical overview of medical imaging in general, leading to the development of MRI. It then introduces basic physical concepts used in MRI and some of the basic principles. Expanding on these concepts, we then cover image weighting and contrast, special encoding and image formation, parameters and pulse sequences, instrumentation, and equipment. Students learn what magnetic resonance phenomenon is, how magnetic resonance signals are generated, how an image can be made using MRI, and how soft tissue contrast can change with imaging parameters. Also introduced are MR imaging sequences of spin echo, gradient echo, fast spin echo, echo planar imaging, inversion recovery, etc. Finally, we cover more advanced MRI techniques such as functional, diffusion, quantitative, phase-based, spectroscopy MRI, and more.

(i) Other Teaching & Learning Activites

1. **Toronto District School Board Teaching Assistant** Spring 2008
   Center for Addiction and Mental Health and Toronto District School Board, Toronto, ON
   Volunteered one-on-one with high-school students with first episode schizophrenia and assisted each one according to their individual needs and challenges. Was able to assess which way each student dealt best with frustration, initiating work, creating a plan of action and seeing problems from different angles.
2. **Physiology Science Demonstrator at Science Rendezvous** May 2009
   Department of Physiology, University of Toronto, Toronto, ON
   Demonstrated physiological concepts to children, students, and the community. Learned to communicate scientific concepts to a general audience.
3. **Let's Talk Science** Sept 2010 – May 2011
   Let's Talk Science National, Hamilton, ON
   Created and presented talks geared towards high school students in order to engage them and create an interest in the sciences.
4. **Universe of the Brain** Dec 2018
   Planetarium Star Theatre, HR MacMillan Space Centre, Vancouver, BC
   Along with several other colleagues from the UBC MRI Research Centre, prepared and presented an interactive multi-media show on the 'universe of the brain'. Presented various original images and videos from multi-model MRI brain scans, and discussed how MRIs can be used to examine structural, functional, and metabolic properties of the CNS.

9. SCHOLARLY AND PROFESSIONAL ACTIVITIES

(a) Areas of special interest and accomplishments

Research Keywords
MRI, pediatrics, brain development, functional MRI, long-range temporal correlations, brain criticality, complexity, cerebrovascular brain health, myelin, white matter, mild traumatic brain injury, spinal cord injury, susceptibility weighted imaging, R_2^*, quantitative susceptibility mapping, diffusion weighted imaging, orientation dependence, magnetic resonance spectroscopy, medical imaging, neuroimaging, neuroscience.

Summary

As a pediatric imaging researcher, my main goals are to better understand MRI contrast mechanisms in order to develop novel imaging and post-processing techniques that aim to improve sensitivity and specificity of biophysical properties of the brain. My goal is to then use these techniques to better understand differences or changes in white matter in the injured or unhealthy pediatric brain, which can then be used to improve our basic knowledge of the brain, early diagnoses, and to track disease progress with new treatments. I will work to create infrastructure to provide access and education to clinical researchers who want to engage in using imaging to understand complex neurological and developmental disorders, and to create knowledge translation pathways, such as simple-to-use pipelines in order to better integrate advanced post-processing into the clinical imaging arsenal at BCCH.

My main intent is to develop excellence in imaging research so that UBC/BCCHRI becomes a leader in pediatric imaging. I believe we have a centre and the resources to achieve this goal. My aim is to serve as a Scientific Lead by: 1) developing my own independent career research interests; and 2) taking on the development and management of affiliated onsite research projects.

Specifically, my research plan over the next five years is to continue 1) investigating cerebrovascular health by making advances in SWI/QSM research; 2) continue studying long range temporal correlations in fMRI; and 3) using advanced multimodal MRI to improve pediatric brain research. For 1), my next project involves using deep learning algorithms to recover unfiltered phase data from clinical SWI scans which would allow for retrospective analysis of iron levels in preterm infants. I am also working with Thiviya Selvanathan on using SWI to study neonates with hypoxic-ischemic encephalopathy. For 2), I will spend the next 5 years trying to understand (i) structural brain recovery using SWI and DWI methods and ii) functional brain recovery using fMRI LRTC analysis, over the first year of life. Currently we are writing a critical review of complexity analysis in fMRI, and publishing a study demonstrating necessary methodologies to improve and standardize the field. Next, depending on funding, I will either recruit and scan a longitudinal cohort of very preterm infants to complete this project, or will leverage open access data such as the Lifespan Baby Connectome Project. Finally, for 3) I plan to continue to collaborate with colleagues on various projects, including: Thiviya Selvanathan (HIE in newborns - CIHR Project Grant; HIE followup); Alexander Rauscher (Concussion – CIHR Project Grant); Jill Zwicker (DCD brain developement); Liisa Holsti (COMFORT MRI); Anita Datta and Gabriella Horvath (Rett); and more.

Research Development
New MRI Data Analysis Methods

1. Quantitative Susceptibility Mapping: with this technique, we are able to map the magnetic properties of tissue.
2. Tissue orientation dependent analysis of R_2^* signal in neonates: by resolving the signal by angle, we can investigate white matter development in infants.
3. Respiract®: by using a gas control system, we can alter end-tidal gas concentrations in the lungs and blood of subjects, in order to investigate brain blood vessel health and oxygen extraction fraction.
4. Myelin water fraction filtering: in collaboration with Dr. Grabner, we are investigating whether certain advanced filtering methods can lead to better noise reduction in myelin water fraction analysis.
5. Hurst exponent and fractal dimension analysis of resting state fMRI time series: with this technique, we may be able to compute the complexity of fMRI time series in the grey matter. This may be helpful as a clinical diagnostic measure of traumatic brain injuries, epilepsies, and in mental health disorders such as obsessive-compulsive disorder.

Biomedical Applications

1. Creating an MRI protocol for neonatal brain MRI at BC Children's Hospital.

2. By combining DTI, MWI and QSM imaging, myelin health in concussed ice hockey players can be explored in ways that would not be possible if you were to use any one of those imaging methods on their own.
3. The Respiract® is being used in spinal cord injured subjects in order to investigate potential brain damage post injury.

Current Projects Related to Pediatric Imaging

1. Imaging of focal cortical dysplasias (FCD): FCD is very difficult to detect in brain scans. We are working to develop MRI scans for their detection, with the goal of improving post-surgery outcomes.
2. Advanced imaging in neonates: susceptibility-based MRI has been underutilized and explore in term and preterm neonatal brains. Several different quantitative and qualitative maps can be processed from this scan, which may be useful for investigating cortical maturation, diffuse white matter injury, brain tissue oxygenation, hemorrhage, and magnetic susceptibility (iron, calcification, myelin).
3. Imaging of Rett Syndrome: We are working to develop MRI scans for a study looking at Rett Syndrome and its subtypes. We hope to be able to develop a quantitative MRI protocol that will help classify and study different subtypes and severities of Rett Syndrome in children.
4. Iron imaging in sleep and concussion: using QSM, measure iron levels in children with concussions, and correlate with sleeplessness and recovery.
5. Develop innovative artificial intelligence tools to analyze cohorts with very large number of variables, integrating neuroimaging, clinical and socio-demographic data.

(b) Research or equivalent grants (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC))
BOLD = current funding

Granting Agency	***Title***	***Grant Type***	***Amount Per Year***	***Duration***	***PI***	***Co-PI(s)***
BCCHRI – Clinical & Translational Research Seed Grant	Cerebral Perfusion And Oxygenation in Hypoxic Ischemic Neonates	C	$5,000	02/2016-02/2017	**Alexander Weber**	Cristina Mignone
[1]BCCHRI - Brain, Behaviour and Development Catalyst Grant	Magnetic Resonance Imaging of Focal Cortical Dysplasia	C	$10,000	02/2017-02/2019	Alexander Rauscher	Dewi Schrader, **Alexander Weber**
BCCHRI Investigator Establishment Award	n/a	NC	$250,000	12/2019 - 11/2022	**Alexander Weber**	

BCCHRI Special Funding Award - Scanner time on BCCH 3T Research MRI	n/a	NC	$80,000	12/2019 - 11/2024	**Alexander Weber**	
[2]CIHR	A prospective and longitudinal investigation of concussive and subconcussive mild traumatic brain injury mechanisms in ice hockey players	C	$220,000 /yr for 5 years ($1.1 M total) My portion: $0	03/2020 - 2025	Lyndia Wu	Alexander Rauscher, Peter Cripton, William Panenka, Jack Taunton, Paul van Donkelaa, **Alexander Weber**
BCCHRI - Brain, Behaviour and Development Catalyst Grant	Brain Health in Preterm Infants: Cerebral Metabolic & Rate of Oxygen (CMRO2) Brain Mapping	C	$20,000 for one year	03/2021 - 03/2023	**Alexander Weber**	Ruth Grunau
O.R.S.A. Research Grant	Functional, Metabolic, and Structural MRI Findings in Rett Syndrome	C	$28,000	02/2021 - 02/2023	**Alexander Weber**	Anita Datta, Gabriella Horvath, Alexander Rauscher
[3]BCCHRI - BB&D Establishment Fund Competition	Translational Collaborative Informatics Platform for Precision Health	C	$95,000 My portion: $0	06/2022	Gabriella Horvath	**Alexander Weber**, Alexander Rauscher, Anita Datta, Jessica Dennis, + 13 more
BCCHRI - BB&D Event Support Fund	Precision Health Data Analysis Bootcamp	C	$1,000	07/2022	**Alexander Weber**	Lynne Williams and Phillip Richmond
British Columbia Children's Hospital Foundation	fMRI Temporal Dynamics: Their Origins and Development in Newborns	NC	$25,000	04/2023 - 03/2024	**Alexander Weber**	
[4]DMCBH Kickstart Grant with Dept of Pediatrics	New Magnetic Resonance Approaches To Understanding Developmental Visual Disorders	C	$40,000 My portion: $6,000	06/2023	Deborah Giaschi	**Alexander Weber**, Tamara Vanderwal, Hee Yeon Im, Miriam Sperin

British Columbia Children's Hospital Foundation	fMRI Temporal Dynamics: Their Oriins and Development in Newborns	NC	$25,000	03/2024 - 02/2025	**Alexander Weber**	
BCCHRI - BB&D Open Access Publication Fund	Cerebrovascular Reactivity Following Spinal Cord Injury	C	$2,000	2024	**Alexander Weber**	
NSERC Discovery Grant	**Mapping the Structural and Functional Development of the Brain in the First Year of Life: A State-of-the-Art Quantitative MRI Approach**	**C**	**$40,000 / yr for 5 years + $12,500 ECR supp.**	**06/2024 - 06/2029**	**Alexander Weber**	
CIHR	**Brain Connectome and Neurodevelopment in Neonatal Hypoxic-Ischemic Encephalopathy**	**C**	**$123,165 / yr for 5 years**	**06/2025 - 06/2030**	**Thiviya Sel-vanathan**	**Alexander Weber, and eight others.**
BCCHRI - Catalyst Grant	**Brain and Motor Development of Young Children**	**C**	**$20,000 / year**	**Nov 2024**	**Jill Zwicker, Alexander Weber**	**n/a**
BCCHRI - Catalyst Grant	**Brain development in infants who receive CALMER**	**C**	**$20,000 / year**	**Dec 2024**	**Liisa Holsti, Manon Ranger**	**Thiviya Selvanathan, Alexander Weber**
BCCHRI - BB&D Open Access Publication Fund	Assessing Semi-Regional Cerebral Oxygen Consumption ($CMRO_2$) in Preterm Neonates: A Quantitative MRI Cohort Study with Exploratory Analysis of Respiratory Support	C	$4,000	2025	**Alexander Weber**	

[1] I supported in grant preparation, recruitment, and data analysis
[2] I supported in grant preparation, study design, and am currently involved in data analysis
[3] I supported in grant preparation, and MRI data advice
[4] I supported in grant preparation, and methods design.

Grants Submitted and Currently Under Review

Granting Agency	*Title*	*Grant Type*	*Amount Per Year*	*Duration*	*PI*	*Co-PI(s)*

(c) Research or equivalent contracts, including funding for clinical trials (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC). BOLD = current funding.

(d) Invited Presentations

	Presentation Title	Institution/Organizat	Date
	Local		
1.	Diffusion Entropy Reveals White Matter Damage from Mild Concussions in Ice Hockey Players.	MRI Research Centre Annual Retreat	May 25^{th}, 2016
2.	Diffusion Imaging Reveals White Matter Damage in Ice Hockey Players for up to Two Months Post-Concussion	UBC Postdoctoral Research Day	September, 2016
3.	Diffusion Imaging Reveals White Matter Damage in Ice Hockey Players for up to Two Months Post-Concussion	CFRI TGIF Seminar Series, BCCHRI	October, 2016
4.	Diffusion Imaging Reveals White Matter Damage in Ice Hockey Players for up to Two Months Post-Concussion.	CFRI TGIF Seminar Series	October, 2016
5.	Measuring Sports Head Injuries: A Longitudinal Examination of Hockey Concussions with Conventional and Advanced MRI	BC Neuropsychiatry Grand Rounds, UBC	December 7^{th}, 2016
6.	Adventures in Susceptibility Imaging	Brain, Behaviour & Development: Research in Progress	March 7^{th}, 2018
7.	Unravelling the Pathological Insights From Quantitative Susceptibility Mapping and Diffusion Tensor Imaging in Ice Hockey Players Pre and Post-concussion.	BC CAN Meeting	December 6^{th}, 2018
8.	Myelin Water Imaging and R_2^* Mapping in Neonates	Brain, Behaviour & Development: Neuroscience Day	December 14^{th}, 2018
9.	Myelin Water Imaging and R_2^* Mapping in Neonates	UBC MS Connect Presentation	March 12^{th}, 2019
10.	Magnetic Susceptibility Imaging in the Developing Brain: Probing Health, Injury, and Disease	Department of Pediatrics Grand Rounds, UBC	July 5^{th}, 2019
11.	Magnetic Susceptibility Imaging in the Developing Brain: Probing Health, Injury, and Disease	Department of Neuroscience Grand Rounds, UBC	Oct 2^{nd}, 2019
12.	Magnetic Susceptibility Imaging in the Developing Brain: Probing Health, Injury, and Disease	Brain, Behaviour & Development: Research Day	Oct 3^{rd}, 2019

13.	Cerebrovascular Health in Spinal Cord Injuries	Brain, Behaviour & Development: Research in Progress	February 5^{th}, 2020
14.	Pick My Brain: An Imaging Brain Scientist's Perspective	BCCHR Summer Student Research Program	July 17^{th}, 2020
15.	Imaging Focal Cortical Dysplasia	Neuroradiology Networking Discussion Panel	September 15^{th}, 2020
16.	Brain Health in Preterm Infants: Cerebral Metabolic Rate of Oxygen Brain Mapping	Neonatal Intensive Care Unit Research Rounds	May 7^{th}, 2021
17.	Functional, Metabolic, and Structural MRI Findings in Rett Syndrome	Anesthesiology Research Rounds	Nov 10^{th}, 2021
18.	Brain Health in Preterm Infants: Cerebral Metabolic Rate of Oxygen Brain Mapping	Neonatal Intensive Care Unit Knowledge Translation Rounds	Dec 1^{st}, 2021
19.	Measuring Brain Criticality Through the Hurst Exponent of the BOLD Signal In Preterm Infants: A Longitudinal fMRI Study	14^{th} Annual UBC MRI Research Centre & Researchers' Retreat	May 30^{th}, 2022
20.	The WeberLab: Leveraging Quantitative Multi-Model MRI to Study Neonatal Brain Development	Dr. Steven Miller's Lab	Oct, 2023
21.	The WeberLab: Leveraging Quantitative Multi-Model MRI to Study Neonatal Brain Development	BCCH Neuroscience Rounds	Nov 29^{th}, 2023
22.	How Current Incentives for Scientists Lead to Poor Science for Everyone	NeuroImagersWest: Mental Health in Science Meeting	May 18^{th}, 2024
23.	Investigating the Development and Disruption of Brain Dynamics and the Critical Brain Hypothesis	BB&D Research Day	Nov 25^{th}, 2024
24.	Reproducible Manuscripts	UBC MRI Research Centre and MRI Physics Group	Nov 27th, 2024
25.	Mapping Tiny Brains: Advanced Imaging and Insights into Preterm Neurodevelopment	Department of Pediatrics Grand Rounds WACH Presentation, UBC	January 17^{th}, 2025

(e) Invited Participation

(f) Conference Participation (Organizer, Chair, Moderator, etc.)

(g) Other Presentations

	Presentation Title	Institution/Organizat	Date
	Local		

1.	Partial Least Squares Correspondence Analyis: A Framework to Simultaneously Analyze Behavioral and Genetic Data	SMGG Journal Club	Dec 4th, 2019
2.	A "Gentle" Intro to Deep Learning in Medical Imaging	MR Journal Club	Jan 28th, 2020
3.	Deep Learning Workshop Using Python and JupyterNotebook	MR Journal Club	Feb 25th, 2020
4.	My Sisyphean Quest to Learn How to Highline	Dept of Physics - Hobbies and Special Interests	June 9th, 2020
5.	Dead salmon and voodoo correlations: should we be sceptical about functional MRI?	MR Journal Club	July 28th, 2020
6.	Motion Correction in MRI of the Brain	MR Journal Club	Mar 2nd, 2021
7.	Philosophical Issues in Neuroimaging	MR Journal Club	Oct 26th, 2021
8.	Brain Imaging Data Structure Tutorial	MR Journal Club	April 26th, 2022
9.	Diffusion MRI fiber tractography of the brain	MR Journal Club	Feb 28th, 2023
10.	Brain Extraction Methods Comparisons	MR Journal Club	Sept 26th, 2023
11.	Reproducible Manuscripts	MR Journal Club	June 26th, 2024

(h) Scholarship of Education Activites

(i) Professional Contributions

10. SERVICE TO THE UNIVERSITY

(a) Areas of special interest and accomplishments

I am interested in helping BC Children's Hospital and the MRI Research Centre at UBC become a leader in pediatric MR Imaging. This work includes networking with clinicians and other researchers interested in advancing UBC's capabilities in terms of state-of-the-art advanced imaging. Educating, communicating, writing grants, purchasing new equipment, running brainstorm sessions, seminars and mini-conferences; these and more are needed in order to bring us up to a world-class level. As well, I strive to reach out to national and international researchers in order to collaborate on multi-site projects. I have spent the last nine years collaborating and working with people from both Children's Hospital and UBC MRI Research Centre, as well as attending and presenting at meetings, conferences, update sessions, and more. I have developed, from scratch, a graduate course teaching the fundamentals of MRI (Women+ and Children's Health Program). I created this course because I have seen how many students begin and conduct their research in magnetic resonance imaging without ever knowing how an MRI actually works. Thus, I saw a need to develop a course that would be open to all students from any department and with no prerequisites. This course has also provides a much needed opportunity for other faculty to teach: in its inaugural year (W2024), I had five Faculty members give guest lectures (Alexander Rauscher, Shannon Kolind, Andrew Yung, Rachel Eddy, Thiviya Selvanathan).

(b) Memberships on committees, including offices held and dates

	Committee	Role	Description	Date
1.	UBC MRI Research Centre and MRI Physics Group	member	Meet once a week to discuss and present problems in MRI and physics	2015 – present
2.	Brain, Behaviour & Development Theme	member	Meet once a month for various conferences and seminars to share and discuss brain development in pediatrics	2015 – present
3.	Visualizing the Brain Group	member	Sub-theme of BB&D; brings together a community of researchers and clinicians who "visualize brain function" in its broadest sense	2015 – present
4.	V-Brain	member	Help setup a neuroimaging database across BC	2019 - present
5.	BCCHR IT Road-map	member	Help develop better IT solutions for researchers at BCCHRI	2020 - present
6.	EDI Dept Pediatrics	member	Help battle discrimination and racism in the Dept of Pediatrics	2020 - 2022?
7.	College of Reviewers (CIHR)	associate member	The College of Reviewers is a member-focused resource designed to professionalize peer review, enhance review quality, and provide a more stable base of experienced reviewers for all funding competitions.	2023 - 2025
8.	PhD Rotation Committee for the School of Biomedical Engineering	member	Help rank applicants to the PhD rotation program in the School of Biomedical Engineering	2023- present
9.	BCCH MRI Research Facility Protocol Review Committee	member	Before a research study can begin at the BCCH MRI Research Facility, an application made by a PI must be reviewed and approved by the Protocol Review Committee	2024 - present
10.	Neurodevelopmental & Neurological Disorders Group	member	Sub-theme of BB&D; share and discuss relevant research in neurodevelopmental & neurological disorders	2024 - present
11.	BCCH MRI Research Facility Steering Committee	member	Our goal is to develop a Pediatric MRI Investigator Support Unit; My role is as Lead for Pediatric MRI Science, Education and Technology Development	2024 - present
12.	College of Reviewers (CIHR)	full member	The College of Reviewers is a member-focused resource designed to professionalize peer review, enhance review quality, and provide a more stable base of experienced reviewers for all funding competitions.	2025 - present

13.	Faculty of Medicine Research Committee	member	Appointed as one of two early career faculty representatives. The committee guides the Faculty's strategic research direction, recommends research-related initiatives for approval, and facilitates coordination and information exchange on internal and external research opportunities.	2025 - present

(c) Faculty Mentoring

	Member	**Faculty**	**Date**
1.	Thais Rangel Bousquet Carrilho	Postdoctoral Research Fellow, Department of Obstetrics and Gynaecology, Faculty of Medicine	2025 – present

(d) Other services, including dates

1. Helped Drs Ruth Grunau and Steven Miller set up an imaging protocol at BCCH to mirror one that Dr. Miller was running at Sick Children's Hospital in Toronto. This included reducing the BCCH magnetic transfer imaging (MTR) sequence from 20 minutes to 5 minutes, making the T1 mapping faster, improving spectroscopy and setting up a SWI scan. August 2016.
2. Helped Dr. Vesna Sossi (PI) and her team Dr. Rebecca Williams (Post doc at the University of Calgary) and Connor Bevington (PhD candidate) set up and run the Respiract Unit at the new MRI facility at the Centre for Brain Health. This was a multi-day project involving training Dr. Williams and Connor on how to use the Respiract Unit, how to analyze the data, and attempting to set-up the unit on the PET/MRI. August 2019.
3. Together with GE Scientist Dr. Jing Zhang, helped improve the way the BCCHRI MRI Centre performed its proton MRS sequence. Whereas before they were acquiring their pulse sequence without an unsuppressed water reference, Dr. Zhang and I were able to reveal why this significant piece of information was not being acquired. This will markedly improve future MRS scans. 2019
4. Wrote an easy-to-use post-processing script for the BCCHRI MRI Centre to use in order to analyze their MRS sequences; something they were unable to do before and were instead sending data to Dr. Steven Miller's group in Toronto to analyze.
5. Helped setup a Github for BCCHR with Lynne Williams. 2020. https://github.com/BCCH-MRI-Research-Facility
6. Helping Danny Kim setup Nifti-to-DICOM viewing on the PACS system at BCCHRI. 2020.
7. Helping Bruce Bjornson and the MRI Centre at BCCHR develop low TR / long timeseries functional MR Imaging. 2020.
8. DCMH Neuroscience Endowment Awards Committee. 2020.
9. DCMH Neuroscience Endowment Awards Committee. 2021.
10. Developing a J-Editing Sequence to detect GABA for Debbie Giaschi's lab. 2022.
11. Setting up a Virtual Environment with Lynne Williams for MRI Researchers to aid with MRI processing on UBC's Sockeye High Performance Computing Cluster. 2022

12. WACH PROGRAM Focus. April 2022
13. Adjudicate the 2022 Faculty of Medicine Graduate Student Awards
14. Adjudicate the 2023 Faculty of Medicine Graduate Student Awards
15. Adjudicate the 2024 Faculty of Medicine Graduate Student Awards

11. SERVICE TO THE HEALTH PROFESSIONS / HEALTH AUTHORITIES

(a) Areas of special interest and accomplishments

(b) Memberships on committees, including offices held and dates

1. Member, Search Committee for the position of Director, Research Informatics, BCCHR. September-November 2022
2. Member, Search Committee CRC Tier 2 Digital Health, BCCHR. Feb 2023
3. Member, Review Committee: 2024 Trainee Outstanding Achievement Awards, BCCHR. May 2024

(c) Other service, including dates

1. BCCHR - BB&D Theme Review Nov 4 and 5th 2020. In late 2020, BCCHR brought in external reviewers for all four Themes to review the Themes on various areas. I was part of the group "BB&D Theme Investigators Group #1", a 45 minute session so reviewers could hear directly from Theme Investigators. Link
2. Canadian Research Chair Tier 2 in Digital Health. Jan 2021. I was part of the Clinical Investigators interview panel for all three candidates for 45 minutes each, as well as six hours of talks we were also expected to attend (two one-hour talks for all candidates).
3. ID Clinician-Scientist Candidate Interview for BC Children's and UBC. Nov 2021
4. BCCHR Clinical & Translational Research Seed Grants Review Committee. 2022

12. SERVICE TO THE COMMUNITY

(a) Areas of special interest and accomplishments

My service to the community has generally been in mental health. I started volunteering in undergrad in a neuroscience nursing ward, which helped spark a passion of mine for both neuroscience and mental health in general, but also for working directly with clients who are dealing with these issues on a daily basis. I believe that volunteering gives us an opportunity to give back to the community, but also to see a side of the world that we may be privileged enough not to have had to see. Thus, there is so much to learn from volunteering in different fields and getting to know people who struggle with various issues. Although it can be seen below that I have not had much service to the academic community, I believe that service to the oppressed or disadvantaged community is as important.

(b) Memberships on scholarly societies, including offices held and dates

1. Chemistry Students' Union Vice President, Sept 2006 - Aug 2007, Chemistry Students' Union, University of Toronto, Toronto, ON. Planned, organized, advertised and implemented social and academic activities for chemistry students.
2. Graduate Association Executive Member, Sept 2007 – Aug 2009, Graduate Association of Students in Physiology, University of Toronto, Toronto, ON. Contributed and participated in all meetings/events. Seminar coordinator for the 2008/2009 term; website coordinator for the 2007/2008 term.
3. BME Graduate Association Co-President, Sept 2010 – Aug 2011, School of Biomedical Engineering, McMaster University, Hamilton, ON. Organized various social and academic events for graduate students in the Biomedical Engineering program.

(c) Memberships on other societies, including offices held and dates

1. *Vice President* , Feb 2014 – August 2015, Yukon Youth Outdoor Leadership Association, Whitehorse, YT. Created partnerships with organizations that focus on disadvantaged youth. Provided funding for these youth to engage in athletic and outdoor activities, such as mountain biking and ropes courses in the summer, and skiing and snowboarding in the winter. Wrote, applied and secured funding for the summer and winter programs.

(d) Memberships on scholarly committees, including offices held and dates

(e) Memberships on other committees, including offices held and dates

1. *Human Rights and Peace Committee* , Jun 2011 – Dec 2011, Hamilton District Labour Council, Hamilton, ON. Inform, promote and educate the HDLC on all matters pertaining to human and civil rights, peace issues and women's issues.
2. *Health and Safety Representative* , Jan 2014 – September 2015, Residential Youth Treatment Services, Health and Social Services, Whitehorse, YT. Acted as a link between workers and employers in supporting occupational health and safety.

(f) Editorships (list journal and dates)

(g) Reviewer (journal, agency, etc. including dates)

1. European Radiology, International Journal – March 15th 2019
2. NeuroImage, International Journal – August 27th 2019
3. Pediatric Research, International Journal – March 27th, 2020
4. European Radiology, International Journal – June 25th, 2020
5. PLOS One, International Journal – September 9th, 2020
6. Neuroimage: Clinical, International Journal - January 9th, 2021
7. Journal of Clinical and Translational Research - April 15th, 2021
8. Neuroimage: Clinical, International Journal - September 1st, 2021
9. Neuroimage: Clinical, International Journal - February, 2022
10. NMR in Biomedicine, International Journal - September, 2022

11. **CIHR Reviewer in Training** - 3 submissions reviewed - Fall 2022
12. Magnetic Resonance Imaging, International Journal - January, 2023
13. Neurotrauma Reports, International Journal - February, 2023
14. Human Brain Mapping, International Journal - June, 2023
15. **CIHR Reviewer** - 1 submission reviewed - November, 2024
16. **CIHR Postdoctoral Research Fellowship Award Reviewer** - November, 2024
17. Human Brain Mapping, International Journal - January, 2025
18. Pediatric Research, International Journal - April, 2025

(h) External examiner (indicate universities and dates)

1. Peter Stenfen - MSc, Dept Neuroscience - UBC - Nov 13th 2020
2. Meighan Maria Roes - PhD, Dept of Psychology - UBC - Dec 15th 2021
3. Jessica Archibald - PhD, Dept of Experimental Medicine - UBC - Jan 2023
4. Jacob Stubbs - PhD, Dept of Psychiatry - UBC - Jan 2023
5. Michelle Medina - MSc, Dept of Physics and Astronomy - UBC - July 2023
6. Breanna Nelson - PhD Comprehensive Exam, Dept of Experimental Medicine - UBC - April 2024
7. Sam Connolly - MSc, Dept of Physics and Astronomy - UBC - July 2024
8. Cristina Schaurich - PhD Comprehensive Exam, Dept of Experimental Medicine - UBC - January 2025
9. Breanna Nelson - PhD, Dept of Experimental Medicine - UBC - May 2025
10. Ava Grier - MSc, Dept of Neuroscience - UBC - June 2025

(i) Consultant (list organization and dates)

(j) Other service to the community

1. *Patient Care* – Neuroscience Nursing Ward, Sept 2006 - Aug 2007, Toronto Western Hospital, Toronto, ON. Alleviated patients' anxiety by making conversation, playing games and/or getting them things they needed: water, magazines, food, etc.
2. *Patient Care* - Emergency Department, Sept 2007 - Aug 2008, Toronto Western Hospital, Toronto, ON. Greeted patients entering the ER, explained the triage process, and provided various things like wheelchairs, ice, water, blankets, etc. Was able to successfully support patients who were confused or in pain, and to relax patients who were tense, angry or frustrated.
3. *Team Leader for Toronto Street Needs Assessment Program*, Apr 2009, City of Toronto, Toronto, ON. Lead a team of three around a designated area in Toronto, interviewing every single individual we came across. Learned to be a team leader and to talk to complete strangers.
4. *Telephone Support Line*, Sept 2008 – Aug 2009, Center for Addiction and Mental Health, Toronto, ON. Learned to implement active listening in order to support callers with mental health or addiction issues and help them to achieve independence and control over their life decisions.

5. *Big Brother*, Nov 2009 – Nov 2010, Big Brothers and Big Sisters of Hamilton and Burlington, Hamilton, ON. Spent time once a week participating in low cost activities with my matched 'Little Brother'. Learned to take on the role of a mentor and role model.
6. *Books to Bars*, Aug 2011 – Aug 2013, Books to Bars, Hamilton, ON. Created a partnership with a local used bookstore to lend me any extra books they had every month, which I then donated to the books to prisons program, Books to Bars.
7. *Salvation Army Suicide Crisis Line*, Feb 2013 – Aug 2013, Salvation Army Suicide Prevention Services, Hamilton, ON. Talked to and helped a diverse range of clients throughout the community facing various issues including critical suicidal emergencies, addictions, loneliness, and mental health.
8. *Yukon Distress & Support Line*, Sept 2014 – September 2015, The Second Opinion Society, Whitehorse, YT. Provided assistance, support and resource information over the phone for people in distress Yukon-wide. Employed active listening and applied suicide intervention skills to help clients with various issues, including trauma, critical suicidal emergencies, addictions, mental health, loneliness, and family issues.
9. Poster judge for Brain, Behaviour & Development: Research Day – Oct 3rd, 2019
10. Lightning Talks judge for Brain, Behaviour & Development: Research Day – Nov 23rd, 2023
11. Poster judge for WACH Research Day - April 16, 2024

Communications and Media Interactions

1. Suicide Crisis Line Interview for *CTV News* 2014. Link
2. Interview about QSM and DTI imaging in concussion with *Global News*, Sept 4th, 2018
3. Live interview about QSM and DTI imaging in concussion with *Global News*, Sept 4th, 2018
4. Interview about QSM and DTI imaging in concussion with *City TV's Breakfast Television*, Sept 4th, 2018
5. Interview about QSM and DTI imaging in concussion with *Ubyssey*, Sept 21st, 2018. Link
6. *O.R.S.A* 30th Anniversary Rett Syndrome Podcast, June 4th, 2021. Link
7. Interview about an ultramarathon I ran in the North Shore mountains (80 km, 7,300 m elevation, 29 hours) with *North Shore News*, Sept 21st, 2024. Link
8. Interview about two of my recently published papers on preterm brain development using fMRI for *BCCHR News, Research Highlight*, Jan 24, 2025. Link. Featured on *Research Canada*'s Top Stories of the Week Feb 7 2025 Link.
9. Interview about two of my recently published papers on preterm brain development using fMRI for *BCCHF Ask Report 2025-2026*, Jan, 2025.
10. *Pediatric Research*'s Early Career Investigator biocommentary, May, 2025. doi: 10.1038/s41390-025-04167-x

13. AWARDS AND DISTINCTIONS

(a). Awards for Teaching (indicate name of award, awarding organizations, and date)

	Name of Award	Amount	Awarding Institution	Date
1.	Supervisor Recognition Award		UBC Science Co-op	Dec 2021

(b). Awards for Scholarship (indicate name of award, awarding organizations, date)

	Name of Award	Amount	Awarding Institution	Date
1.	NSERC Undergraduate Student Research Award	$6,500	Natural Sciences and Engineering Research Council	Summer 2005
2.	David L. Coffen Memorial Scholarship in Organic Chemistry	$800	Department of Chemistry, University of Toronto	Feb 2006
3.	UofT Dept. of Physiology Scholarship	$2,000	Department of Physiology, University of Toronto	Sept 2007
4.	UofT Fellowship	$1,600	University of Toronto	Sept 2008
5.	UofT Neuroscience Program CAN-2009 Travel Award	$500	Neuroscience Program, University of Toronto	May 2009
6.	NSERC Postgraduate Scholarship (PGS D)	$63,000	Natural Sciences and Engineering Research Council	2010-2012
7.	Dr. David Williams Award in Biomedical Engineering	$1,000	School of Biomedical Engineering, McMaster University	Nov 2012
8.	Child & Family Research Institute M.I.N.D. Postdoctoral Fellowship	$100,000	BC-Children's Research Institute	Jul 2016 – Jul 2018

(c). Awards for Service (indicate name of award, awarding organizations, and date)

(d). Other Awards

14. OTHER RELEVANT INFORMATION (Maximum One Page)

THE UNIVERSITY OF BRITISH COLUMBIA

Publications Record

Date: July, 2025 **Initials:** AMW

SURNAME: Weber **FIRSTNAME:** Alexander
MIDDLE NAME(S): Mark

Authorship Statement

* Most important papers

Underline – Trainees under my direct supervision
Italic – My doctoral Supervisor
Bold Italic – My postdoctoral supervisor

Key to my contribution:

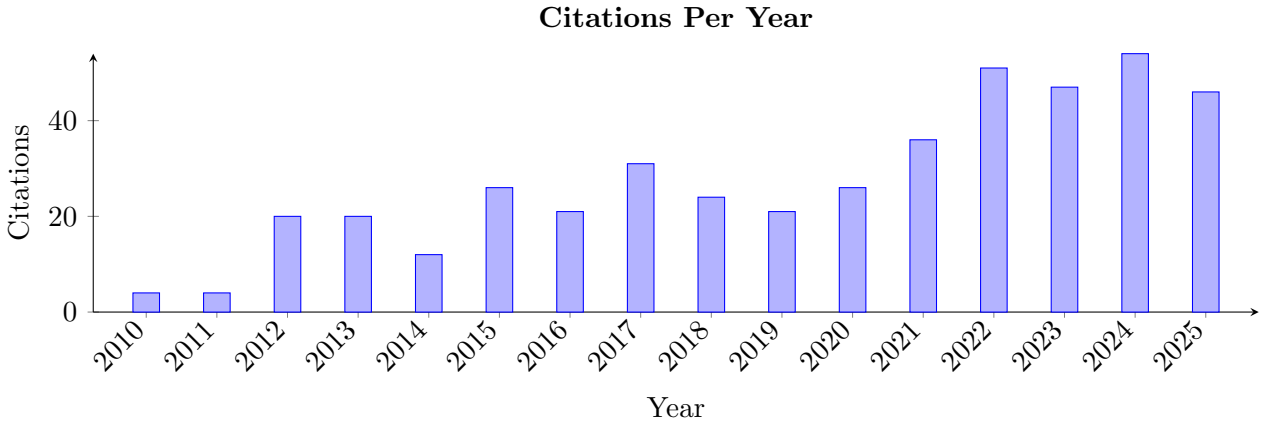
FA - First Author - typically performed the majority of the experiments in the manuscript, wrote the first draft
CA - Contributing Author – typically helped with experimental design, completed some experiments, edited the draft manuscript
SA - Senior Author – typically conceived the experimental approach, supervised the writing of the manuscript, corresponding author for the paper

In the field of MRI, publication is mainly in specialized journals which have impact factors ranging between 2 and 6. For example, Magnetic Resonance in Medicine, which is the leading journal in the field, has an impact factor of 3.6. It is very rare that MRI scientists publish in the top journals Nature and Science. I am only aware of two recent papers ("Travelling-wave nuclear magnetic resonance", Brunner et al. Nature 2009 and "Magnetic resonance fingerprinting", Ma et al. Nature 2013.) The highest impact an MRI method can have is when it is adopted by MRI scanner manufacturers and used in thousands of patients.

1. REFEREED PUBLICATIONS

Summary (July 2025):

Number of refereed publications = 24
Number of refereed publications that are open access = 19/24
Number of citations = 457
h-index = 12



Journal Name	Impact Factor	Category	Rank	Referred Publication List Number
American Journal of Neuroradiology	3.65	Neuroimaging	6/14	9,11
Canadian Medical Association Journal Open	6.94	Medicine	13/160	4
Cerebral Cortex	4.86	Cognitive Neuroscience	31/115	21
Frontiers in Human Neuroscience	2.33	Neuropsychology and Physiological Psychology	21/76	17,18
Frontiers in Neurology	4.00	Clinical Neurology	100/199	8
Frontiers in Physiology	4.56	Physiology	32/113	12
Human Brain Mapping	4.55	Neurosciences	23/134	13
Journal of Magnetic Resonance Imaging	4.81	Radiology, Nuclear Medicine and Imaging	30/333	14
MAGMA	2.84	Radiology, Nuclear Medicine & Medical Imaging	43/129	7
Nature Neuroscience	21.13	Neurosciences	2/267	1,2
Neuroimage	7.4	Cognitive Neuroscience	7/115	15
NMR in Biomedicine	4.04	Spectroscopy	9/44	10
Nutrients	5.72	Food Science	40/389	19
Pediatric Research	3.1	Pediatrics	30/330	22
PLOS Complex Systems	n/a	Biology	n/a	20
Progress in Neuropsychopharmacology & Biological Psychiatry	5.07	Clinical Neurology	38/199	6
Psychiatry Research	11.22	Psychiatry	85/146	5
Topics in Spinal Cord Injury Rehabilitation	2.9	Rehabilitation	51/161	16

Visualization, Image Processing and Computation in Biomedicine	1.3	Imaging	n/a	3

(a) Journals

1. Gardezi SR, **Weber** AM, Li Q, Wong FK, & Stanley EF. PDLIM5 Is Not a Neuronal CaV2.2 Adaptor Protein. *Nature Neuroscience*, August 2009; **12(8)**:957–958. doi: 10.1038/nn0809-957a. CA (IF 21.13; Citations 15; No Altmetric data to report.)
2. *__Weber__ AM, Wong FK, Tufford AR, Schlichter LC, Matveev V, & Stanley EF. N-Type Ca2+ Channels Carry the Largest Current: Implications for Nanodomains and Transmitter Release. *Nature Neuroscience*, November 2010; **13(11)**:1348–1350. doi: 10.1038/nn.2657. FA (IF 21.13; Citations 147; Altmetric score = 4; > 70% all altmetric papers; > 66% last three months. 161 user saves, 3 social-media posts, 0 news outlets, and 1 English Wikipedia pages.)

   We were the first group to measure neuronal voltage gated calcium channels using physiological levels of Ca^{2+}. Our study helped overturn the generally accepted conductance hierarchy of calcium channels, and allowed future researchers to use physiologically measured conductance levels for their models.
3. Warsi MA, **Weber** AM, & *Noseworthy* MD. Brain Fractal Blood-Oxygen Level Dependent (BOLD) Signals: The Effect of MRI Acquisition Parameters on Temporal Fractal Dimension (FD) Stability. *Visualization, Image Processing and Computation in Biomedicine*, 2013; **2(1)**. doi: 10.1615/VisualizImageProcComputatBiomed.2013006007. CA (IF 1.3; Citations 1; No Altmetric data to report.)
4. Anglin RE, Rosebush PI, *Noseworthy* MD, Tarnopolsky M, **Weber** AM, *Soreni* N, & Mazurek MF. Metabolite Measurements in the Caudate Nucleus, Anterior Cingulate Cortex and Hippocampus among Patients with Mitochondrial Disorders: A Case-Control Study Using Proton Magnetic Resonance Spectroscopy. *CMAJ Open*, April 2013; **1(1)**:E48–E55. doi: 10.9778/cmajo.20120020. CA (IF 6.94; Citations 8; No Altmetric data to report.)
5. **Weber** AM, *Soreni* N, Stanley JA, Greco A, Mendlowitz S, Szatmari P, Schachar R, Mannasis K, Pires P, Swinson R, & *Noseworthy* MD. Proton Magnetic Resonance Spectroscopy of Prefrontal White Matter in Psychotropic Naïve Children and Adolescents with Obsessive–Compulsive Disorder. *Psychiatry Research: Neuroimaging*, April 2014; **222(1-2)**:67–74. doi: 10.1016/j.pscychresns.2014.02.004. FA (IF 11.22; Citations 29; No Altmetric data to report.)
6. **Weber** AM, *Soreni* N, & *Noseworthy* MD. A Preliminary Study of Functional Connectivity of Medication Naïve Children with Obsessive–Compulsive Disorder. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, August 2014; **53**:129–136. doi: 10.1016/j.pnpbp.2014.04.001. FA (IF 5.07; Citations 35; Altmetric score = 3; > 41% all altmetric papers; > 48% last three months. 56 user saves, 1 social-media posts, 0 news outlets, and 1 English Wikipedia pages.)

7. **Weber** AM, *Soreni* N, & *Noseworthy* MD. A Preliminary Study on the Effects of Acute Ethanol Ingestion on Default Mode Network and Temporal Fractal Properties of the Brain. *Magma (New York, N.Y.)*, August 2014; **27(4)**:291–301. doi: 10.1007/s10334-013-0420-5. (IF 2.84; Citations 45; Altmetric score = 1; > 22% all altmetric papers; > 26% last three months. 60 user saves, 4 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
8. *__Weber__ AM, Pukropski A, Kames C, Jarrett M, Dadachanji S, Taunton J, Li DKB, & ***Rauscher*** A. Pathological Insights From Quantitative Susceptibility Mapping and Diffusion Tensor Imaging in Ice Hockey Players Pre and Post-concussion. *Frontiers in Neurology*, 2018; **9**. doi: 10.3389/fneur.2018.00575. (IF 4.00; Citations 27; Altmetric score = 88; > 98% all altmetric papers; > 97% last three months. 50 user saves, 41 social-media posts, 11 news outlets, and 0 English Wikipedia pages.)
   This paper is unique as it uses a longitudinal research design – meaning that subjects were scanned before and after mild traumatic brain injuries. The results show that changes in myelin water imaging previously reported from the same cohort were likely due to myelin sheath unravelling, as opposed to complete myelin breakdown and removal. This finding is also supported by animal studies performed by other labs. This paper received significant media attention, including several television interviews.
9. Zhang Y, ***Rauscher*** A, Kames C, & **Weber** AM. Quantitative Analysis of Punctate White Matter Lesions in Neonates Using Quantitative Susceptibility Mapping and R2* Relaxation. *AJNR. American journal of neuroradiology*, July 2019; **40(7)**:1221–1226. doi: 10.3174/ajnr.A6114. SA (IF 3.65; Citations 7; Altmetric score = 4; > 72% all altmetric papers; > 67% last three months. 13 user saves, 9 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
10. *__Weber__ AM, Zhang Y, Kames C, & ***Rauscher*** A. Myelin Water Imaging and R_2^* Mapping in Neonates: Investigating R_2^* Dependence on Myelin and Fibre Orientation in Whole Brain White Matter. *NMR in Biomedicine*, March 2020; **33(3)**. doi: 10.1002/nbm.4222. (IF 4.04; Citations 32; Altmetric score = 8; > 82% all altmetric papers; > 79% last three months. 29 user saves, 15 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
    This study is special as we found that R_2^* mapping and myelin water imaging can provide valuable insights into the development of white matter in neonates. We discovered that R_2^* values are dependent on both myelin content and fibre orientation. This suggests that these imaging techniques could be used to track white matter development and potentially identify abnormalities in neonates. These findings could have significant implications for understanding and diagnosing neurodevelopmental disorders in early life.
11. **Weber** A, Zhang Y, Kames C, & ***Rauscher*** A. Quantitative Susceptibility Mapping of Venous Vessels in Neonates with Perinatal Asphyxia. *American Journal of Neuroradiology*, July 2021; **42(7)**:1327–1333. doi: 10.3174/ajnr.A7086. FA (IF 3.65; Citations 5; No Altmetric data to report.)
12. *Campbell O, Vanderwal T, & **Weber** AM. Fractal-Based Analysis of fMRI BOLD Signal During Naturalistic Viewing Conditions. *Frontiers in Physiology*, 2021; **12**:809,943. doi: 10.3389/fphys.2021.809943. Co-SA (IF 4.56; Citations 15; Altmetric score = 0; > 1% all altmetric papers; > 1% last three months. 21 user saves, 1 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)

In this study we found that the complexity of fMRI signals varies between different mental states. Specifically, we observed that the complexity of these signals is higher during movie watching compared to an eyes-open resting state. This suggests that the brain's response to complex stimuli, such as movies, involves a more intricate network of neural activity than previously thought. These findings have important implications for our understanding of how the brain processes information and could potentially influence the design of future neuroimaging studies.

13. Campbell OL & **Weber** AM. Monofractal Analysis of Functional Magnetic Resonance Imaging: An Introductory Review. *Human Brain Mapping*, June 2022; **43(8)**:2693–2706. doi: 10.1002/hbm.25801. SA (IF 4.55; Citations 32; Altmetric score = 1; > 38% all altmetric papers; > 52% last three months. 22 user saves, 2 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
14. Bartels LM, Doucette J, Birkl C, Zhang Y, **Weber** AM, & ***Rauscher*** A. Orientation Dependence of R2 Relaxation in the Newborn Brain. *NeuroImage*, October 2022; p. 119702. doi: 10.1016/j.neuroimage.2022.119702. Co-SA (IF 7.4; Citations 17; Altmetric score = 7; > 80% all altmetric papers; > 77% last three months. 11 user saves, 9 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
15. Fothergill A, Birkl C, Kames C, Su W, **Weber** A, & ***Rauscher*** A. The Effects of Wearing a 3-Ply or KN95 Face Mask on Cerebral Blood Flow and Oxygenation. *Journal of Magnetic Resonance Imaging*, June 2023; **57(6)**:1696–1701. doi: 10.1002/jmri.28448. Co-SA (IF 4.81; Citations 0; Altmetric score = 25; > 94% all altmetric papers; > 92% last three months. 6 user saves, 50 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
16. **Weber** AM, Nightingale TE, Jarrett M, Lee AHX, Campbell OL, Walter M, Lucas SJE, Phillips A, ***Rauscher*** A, & Krassioukov AV. Cerebrovascular Reactivity Following Spinal Cord Injury. *Topics in Spinal Cord Injury Rehabilitation*, May 2024; **30(2)**:78–95. doi: 10.46292/sci23-00068. FA (IF 2.9; Citations 5; Altmetric score = 4; > 70% all altmetric papers; > 70% last three months. 3 user saves, 7 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
17. Malik M, **Weber** A, Lang D, Vanderwal T, & Zwicker JG. Cortical Grey Matter Volume Differences in Children with Developmental Coordination Disorder Compared to Typically Developing Children. *Frontiers in Human Neuroscience*, May 2024; **18**. doi: 10.3389/fnhum.2024.1276057. CA (IF 2.33; Citations 3; Altmetric score = 0; > 10% all altmetric papers; > 18% last three months. 13 user saves, 1 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
18. Malik MA, **Weber** AM, Lang D, Vanderwal T, & Zwicker JG. Changes in Cortical Grey Matter Volume with Cognitive Orientation to Daily Occupational Performance Intervention in Children with Developmental Coordination Disorder. *Frontiers in Human Neuroscience*, May 2024; **18**. doi: 10.3389/fnhum.2024.1316117. CA (IF 2.33; Citations 1; No Altmetric data to report.)
19. McWilliams S, Hill O, Ipsiroglu OS, Clemens S, **Weber** AM, Chen M, Connor J, Felt BT, Manconi M, Mattman A, Silvestri R, Simakajornboon N, Smith SM, & Stockler S. Iron Deficiency and Sleep/Wake Behaviors: A Scoping Review of Clinical Practice Guidelines—How to Overcome the Current Conundrum? *Nutrients*, January 2024; **16(15)**:2559. doi: 10.3390/nu16152559. CA (IF 5.72; Citations 3; Altmetric score = 1; > 21% all altmetric papers; > 39% last three months. 28 user saves, 1 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)

20. Drayne JP, Mella AE, McLean MM, Ufkes S, Chau V, Guo T, Branson HM, Kelly E, Miller SP, Grunau RE, & **Weber** AM. Long-Range Temporal Correlation Development in Resting-State fMRI Signal in Preterm Infants: Scanned Shortly after Birth and at Term-Equivalent Age. *PLOS Complex Systems*, December 2024; **1(4)**:e0000,024. doi: 10.1371/journal.pcsy.0000024 SA (IF n/a; Citations 1; Altmetric score = 1. 2 user saves, 1 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
21. *Mella AE, Vanderwal, Tamara, Miller, Steven P, & **Weber**, Alexander M. Temporal Complexity of the BOLD-Signal In Preterm Versus Term Infants. *Cerebral Cortex*, November 2024; **34(11)**. doi: 10.1093/cercor/bhae426 SA (IF 4.86; Citations 5; Altmetric score = 2; > 39% all altmetric papers; > 61% last three months. 3 user saves, 6 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
    This study is significant as it provides insights into the impact of preterm birth on cerebral development. We used the Hurst exponent (H) to measure temporal complexity in resting state functional magnetic resonance signals in preterm and term born infants. The findings suggest that H increases with age and is lower in infants born earlier. The study also found that motor and sensory networks showed the greatest increase in H. The study indicates that H reflects developmental processes in the neonatal brain, with the BOLD signal in preterm infants transforming from anticorrelated to correlated, but reduced compared to term born infants.
22. Carmichael TG, ***Rauscher*** A, Grunau RE, & **Weber** AM. The Application of Magnetic Susceptibility Separation for Measuring Cerebral Oxygenation in Preterm Neonates. *Pediatric Research*, March 2025; doi: 10.1038/s41390-025-03966-6 SA (IF 3.1; Citations 1; Altmetric score = 1; > 21% all altmetric papers; > 38% last three months. 1 user saves, 2 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
    Published as fully reproducible manuscript at WeberLab/Chisep_CSVO2_Manuscript
23. Zhu A, Chau C, Chan N, Chacko A, Holsti L, Grunau RE, & **Weber** AM. Regional Cerebral Metabolic Rate of Oxygen and Levels of Respiratory Support in Preterm Neonates. *NMR in Biomedicine*, May 2025; **38(6)**:e70,065. doi: 10.1002/nbm.70065 SA (IF 4.04; Citations 0; Altmetric score = 2; > 39% all altmetric papers; > 65% last three months. 0 user saves, 4 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
    Published as fully reproducible manuscript at WeberLab/CMRO2_Manuscript

(b) Conference Proceedings

Oral Presentations

1. **Weber** AM & Stanley EF. Single Channel Conductance of CaV2.2 at Physiological $[Ca^{2+}]_{ext}$. In *Biophysical Society*. Boston, US, February 2009;
2. **Weber** AM, *Soreni* N, & *Noseworthy* MD. Evaluating Disorganization in the Intoxicated Brain: A Resting State fMRI Study. In *European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*. Leipzig, DE, October 2011;
3. **Weber** AM, *Soreni* N, Stanley JA, Greco A, Szatmari P, Schachar R, Mannasis K, Pires P, & *Noseworthy* MD. Altered Functional Connectivity in Children with Obsessive-Compulsive Disorder. In *European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*. Leipzig, DE, October 2011;

4. **Weber** AM, *Soreni* N, & *Noseworthy* MD. Proton Magnetic Resonance Spectroscopy of Orbital Frontal White Matter in Medication Naïve Children with OCD. In *European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*. Lisbon, PT, October 2012;
5. **Weber** AM, Zhang Y, Kames C, & ***Rauscher*** A. Myelin Water Imaging and R2* Mapping in Neonates. In *International Society for Magnetic Resonance in Medicine (ISMRM)*. Montreal, CA, May 2019;
6. Campbell O, Vanderwal T, & **Weber** AM. Fractal-Based Analysis of Movie Watching vs. Eyes-open Resting State Reveals Widespread Differences in fMRI Signal Complexity. In *BB&D Research Day Lightning Talk*. January 2021;
7. Drayne JP, Campbell O, Chau C, Miller S, Grunau R, & **Weber** AM. Fractal Analysis of the BOLD Signal in Preterm Infants Scanned Shortly After Birth and at Term-Equivalent Age. In *International Society of Magnetic Resonance in Medicine*. London, UK, May 2022;
8. Mella AE & **Weber** AM. Altered Brain Signaling Complexity in Preterm-born and Term-born Infants at Term Age: A Functional MRI Study. In *International Society for Magnetic Resonance in Medicine*. Toronto, Ontario, Canada, June 2023;

Poster Presentations

9. **Weber** AM & Goh C. Molecular Dynamic Simulations of SLS Collagen Assembly Using Various Forms of Nucleotide Triphosphates. In *The Natural Sciences and Engineering Research Council of Canada (NSERC) Student Fellowship Poster Day*. Toronto, CA, August 2005;
10. **Weber** AM, Chan AW, Owens S, & Stanley F. Modulation of CaV2.2 (N-Type) Calcium Channels via G-Protein and PKC Pathways in Dorsal Root Ganglia Neurons. In *Proceedings of the Society for Neuroscience*. Washington DC, US, November 2008;
11. **Weber** AM, Sheffield P, & *Noseworthy* MD. Fractal Dimensional Analysis of BOLD Signals in the Resting State Inebriated Brain. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Stockholm, SE, May 2010;
12. **Weber** AM, *Soreni* N, Stanley JA, Greco A, Szatmari P, Schachar R, Mannasis K, Pires P, & *Noseworthy* MD. Altered Functional Connectivity in Children with Obsessive-Compulsive Disorder. In *Proceedings of the European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*. Leipzig, DE, October 2011;
13. Pukropski A, **Weber** AM, Jarrett M, Kames C, Dadachanji S, Li DKB, Taunton J, & ***Rauscher*** A. Quantitative Susceptibility Mapping of Hockey Players After Mild Traumatic Brain Injury. In *TBI: Mechanisms & Therapies*. Honolulu, HI, USA, April 2017;
14. **Weber** AM, Jarrett M, Hernandez-Torres E, Dadachanji S, Li D, Taunton J, & ***Rauscher*** A. Diffusion Imaging Reveals White Matter Damage in Ice Hockey Players for up to Two Months Post-Concussion. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Honolulu, HI, USA, April 2017;
15. Pukropski A, **Weber** A, Jarrett M, Kames C, Dadachanji S, Li D, Taunton J, & ***Rauscher*** A. Quantitative Susceptibility Mapping of Hockey Players after Mild Traumatic Brain Injury. In *Proceedings of the Organization for Human Brain Mapping (OHBM)*. Vancouver, BC, Canada, June 2017;
16. **Weber** AM, Jarrett M, Dadachanji S, Li D, Taunton J, & ***Rauscher*** A. Diffusion Entropy of Fractional Anisotropy Values in White Matter in Mild Traumatic Brain Injury. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Honolulu, HI, USA, April 2017;

17. Meighen R, **Weber** AM, & Woodward T. Principal Component Analysis of Schizophrenia Reveals Link between Auditory Hallucination Severity and Fractional Anisotropy in the Corpus Callosum. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Paris, France, June 2018;
18. Shcranzer R, Grabner G, **Weber** A, Bredies K, Reishofer G, & ***Rauscher*** A. Use of Different Filtering Techniques to Improve the Quality of Myelin Water Fraction Maps. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Montreal, CA, May 2019;
19. Zhang Y, Kames C, ***Rauscher*** A, & **Weber** AM. R2* Relaxometry and Quantitative Susceptibility Mapping for Brain Injury Detection in Neonates. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Montreal, CA, May 2019;
20. Zhang Y, ***Rauscher*** A, & **Weber** AM. R2* Relaxation Rate of White Matter in Neonates and Correlation with Clinical Predictors of Neonatal Encephalopathy. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. Montreal, CA, May 2019;
21. Beyazaei N, Cho J, Xiao K, Friedlander R, McFee K, Hall C, ***Rauscher*** A, **Weber** A, Vercauteren S, van der Loos M, & Ipsiroglu OS. Integrating Iron Research in Clinical Practice: A Service Design Project for Investigating Disruptive Sleep & Wake-Behaviours. In *Proceedings of World Sleep*. Vancouver, CA, September 2019;
22. Bartels L, Doucette J, Birkl C, Zhang Y, **Weber** AM, & ***Rauscher*** A. Orientation Dependency of T2 in Newborn White Matter Shows Dipole-Dipole Interaction Effects. In *BB&D Research Day Poster Presentation*. January 2021;
23. Bartels L, Doucette J, Birkl C, Zhang Y, **Weber** AM, & ***Rauscher*** A. Orientation Dependency of T2 in Newborn White Matter Shows Dipole-Dipole Interaction Effects. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. May 2021;
24. Campbell O, Vanderwal T, & **Weber** AM. Fractal-Based Analysis of Movie Watching vs. Eyes-open Resting State Reveals Widespread Differences in fMRI Signal Complexity. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. May 2021;
25. **Weber** AM, Zhang Y, Kames C, & ***Rauscher*** A. Quantitative Susceptibility Mapping of Venous Vessels in Neonates with Perinatal Asphyxia. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. May 2021;
26. Campbell O, Vanderwal T, & **Weber** AM. Fractal-Based Analysis of Movie Watching vs. Eyes-open Resting State Reveals Widespread Differences in fMRI Signal Complexity. In *Proceedings of the Organization for Human Brain Mapping (OHBM)*. June 2021;
27. Drayne J, Miller S, Grunau R, & **Weber** AM. Fractal-Based Analysis in Infants Born Pre-Term Reveals Networks That Develop the Most after Birth. In *BB&D Research Day Poster Presentation*. October 2021;
28. Zhu A, Chan N, Grunau R, & **Weber** AM. Brain Health in Preterm Infants: Cerebral Metabolic Rate of Oxygen (CMRO2) Using Advanced MRI. In *BB&D Research Day Poster Presentation*. October 2021;
29. Fothergill A, Birkl C, Kames C, **Weber** AM, & ***Rauscher*** A. The Impact of 3-Ply and KN95 Facemasks on Cerebral Blood Flow and Oxygenation. In *Proceedings of the BIC-ISMRM Postgraduate Symposium*. London, UK, April 2022;
30. Fothergill A, Birkl C, Kames C, **Weber** AM, & ***Rauscher*** A. The Impact of 3-Ply and KN95 Facemasks on Cerebral Blood Flow and Oxygenation. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. London, UK, May 2022;

31. Campbell O, Vanderwal T, & **Weber** AM. Fractal-Based Analysis of fMRI BOLD Signal during Naturalistic Viewing Conditions. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. London, UK, May 2022;
32. Zhu A, Chan N, Grunau RE, & **Weber** AM. Brain Health in Preterm Infants: Cerebral Metabolic Rate of Oxygen (CMRO2) Using Advanced MRI. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. London, UK, May 2022;
33. Bartels L, Doucette J, Birkl C, **Weber** AM, & ***Rauscher*** A. Diffusion Metrics in Human White Matter Depend on Fiber Orientation. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. London, UK, May 2022;
34. Ma B, Bartels L, Kames C, Zhang Y, **Weber** AM, & ***Rauscher*** A. Quantitative Susceptibility Mapping of Early Myelination in the Posterior Limb of Internal Capsule in Neonates. In *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM)*. London, UK, May 2022;
35. Armour EE, McLean MA, Phillips H, Chau CMY, Synnes A, Miller SP, **Weber** AM, & Grunau RE. Early Stress Relates to Lower Brain Signaling Efficiency and Outcomes in Children Born Very Preterm. In *Proceedings of the Developmental Origins of Health and Disease (DOHaD)*. Vancouver, BC, August 2022;
36. Mella A & **Weber** AM. Altered Brain Signaling Complexity in Preterm and Term Infants: A Functional MRI Study. In *Proceedings of the Radiology Research Day*. Vancouver, BC, October 2022;
37. McLean M, Armour EE, Weinberg J, Miller SP, **Weber** AM, & Grunau RE. Early Analgesia and Sedation Are Related to Altered Brain Efficiency and Hpa-Axis Activity in Very Preterm Children at School Age. In *Proceedings of the International Society for Developmental Psychobiology (ISDP)*. San Diego, USA, November 2022;
38. Zhu A, Chan N, Holsti L, Grunau RE, & **Weber** AM. Brain Health in Preterm Infants: Cerebral Metabolic Rate of Oxygen (CMRO2) Using Advanced MRI. In *Proceedings of the BB&D Research Day*. Vancouver, BC, November 2022;
39. Sochan L, Vanderwal T, Giaschi D, & **Weber** AM. Association between Long Range Temporal Correlations in fMRI BOLD Signal and the Excitatory-Inhibitory Transmitter Ratio. In *Proceedings of the BB&D Research Day Poster Presentation*. Vancouver, BC, November 2023;
40. Carmichael G, Zhu A, Chau C, Chan N, Chacko A, Holsti L, Grunau R, & **Weber** AM. An Investigation of Regional Cerebral Venous Oxygenation in Preterm Neonates Using Quantitative Susceptibility Mapping. In *Perinatal Child Health Research Annual Meetings*. Vancouver, BC, June 2024;
41. Carmichael G, Zhu A, Grunau R, & **Weber** AM. An Investigation of Regional Cerebral Venous Oxygenation in Preterm Neonates Using Quantitative Susceptibility Mapping. In *Multidisciplinary Undergraduate Research Conference (MURC)*. Vancouver, BC, March 2024;
42. Sochan L, Vanderwal, Giaschi D, & **Weber** AM. Association Between Long Range Temporal Correlations in fMRI BOLD Signal and the Excitatory-Inhibitory Transmitter Ratio. In *International Society for Magnetic Resonance in Medicine (ISMRM)*. Singapore, May 2024;
43. Lu F & **Weber** AM. Revealing Hidden Insights: Deep Learning Recovery of SWI Data to Explore Brain Iron and Neurodevelopment in Preterm Infants. In *Summer Student Research Program Poster Day*. Vancouver, BC, Canada, July 2025;

(c) Other

2. NON-REFEREED PUBLICATIONS

(a) Journals

1. **Weber** AM, Nightingale TE, Jarrett M, Lee AHX, Campbell O, Walter M, Lucas SJ, Phillips A, ***Rauscher*** A, & Krassioukov A. Cerebrovascular Reactivity Following Spinal Cord Injury. *Medrxiv*, June 2022; doi: 10.1101/2022.06.28.22276567. FA (Altmetric score = 1. 0 user saves, 3 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
2. Mella AE, Vanderwal T, Miller SP, & **Weber** AM. Temporal Complexity of the BOLD-Signal In Preterm Versus Term Infants. *Biorxiv*, December 2023; doi: 10.1101/2023.12.08.570818. SA (Altmetric score = 2. 0 user saves, 5 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)
3. Archibald J, **Weber** AM, Scheuren PS, Ortiz O, Choles C, Lee JJ, Zölch N, MacMillan EL, & Kramer JLK. Integrating Structural, Functional, and BiochemicalBrain Imaging Data with MRShiny Brain - An Interactive WebApplication, December 2024. doi: 10.55458/neurolibre.00029. CA (No Altmetric data to report.)
4. Sochan L, Archibald J, & **Weber** AM. Does the Brain's E:I Balance Really Shape Long-Range Temporal Correlations? Lessons Learned from 3T MRI, April 2025. doi: 10.1101/2025.03.28.645973. SA (Altmetric score = 5. 0 user saves, 12 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)

(b) Conference Proceedings

(c) Other

Number of Github public repositories: 30
Number of total forks: 5
Number of total stars: 18

3. BOOKS

(a) Authored

(b) Edited

(c) Chapters

1. **Weber** AM, Torres C, & ***Rauscher*** A. Imaging the Role of Myelin in Concussion. *Neuroimaging Clinics of North America*, February 2018; **28(1)**:83–90. doi: 10.1016/j.nic.2017.09.005. FA (Citations 15; Altmetric score = 5; > 73% all altmetric papers; > 70% last three months. 48 user saves, 8 social-media posts, 0 news outlets, and 0 English Wikipedia pages.)

4. PATENTS

5. SPECIAL COPYRIGHTS

6. ARTISTIC WORKS, PERFORMANCES, DESIGNS

7. OTHER WORKS

(a) Adventure Journalism

In my spare time, I like to get outdoors and learn new things. I am passionate about exploring mountains in different seasons and in different forms: hiking, trail running, rock climbing, ice climbing, skiing, canoeing, etc. Not only are these sports challenging, fun and exciting, but they often involve complex skill and technical knowledge building, humility, preparedness, first aid and survival know-how, determination, the willingness to fail over and over again in safe environments in order to learn, leaderships skills, teamwork, trust, and more. As well, more and more studies are showing not only the physical and mental health benefits of exercise, but also of being in nature. I enjoy sharing my stories of success and failure, of learning and growth, and the benefits of challenging yourself and the beauty of the outdoors.

1. Ice Climbing Ain't for the Faint of Heart, What's Up Yukon, Yukon, Jan 21, 2015 link
2. Adventures in Tombstone Territorial Park, What's Up Yukon, Yukon, Feb 26, 2015 link
3. Romance and Rock Climbing: A Mexican Adventure, What's Up Yukon, Yukon, Mar 19, 2015 link
4. Climbing in Thailand, What's Up Yukon, Yukon, Mar 26, 2015 link
5. Hiking the West Coast Trail: Or, how I learned to love ultra-light backpacking, What's Up Yukon, Yukon, Apr 16, 2015, link
6. Exploring the link Beauty of the Juneau Ice Cave, What's Up Yukon, Yukon, bit.ly/2R3JXzH
7. Slim's River West Trail, What's Up Yukon, Yukon, Jun 4, 2015 link
8. Marathon Man: our resident masochist prepares for the Yukon River Trail Marathon, What's Up Yukon, Yukon, Jul 16, 2015 link
9. Doing the Squirrel-Paddle: An aquatic rodent was the surprise highlight en route from Carmacks to Dawson, What's Up Yukon, Yukon, Jul 23, 2015 link
10. Boulder On!: The Ibex Valley offers rock-solid fun for the adventurous this weekend, What's Up Yukon, Yukon, Aug 6, 2015 link
11. Mind-Blowing Beauty: Even if you've done it before, the Chilkoot Trail may offer "the most incredible hike of your life", What's Up Yukon, Yukon, Aug 13, 2015 link
12. Beauty and Humility in the 'Cirque of the Unclimbables': Climbing the Lotus Flower Tower (part 1), What's Up Yukon, Yukon, Dec 10, 2015 link
13. In the 'Cirque of the Unclimbables' – Part 2, What's Up Yukon, Yukon, Apr 21, 2016 link
14. In the 'Cirque of the Unclimbables' – Part 3, What's Up Yukon, Yukon, Aug 4, 2016 link
15. In the 'Cirque of the Unclimbables' – Part 4, What's Up Yukon, Yukon, Aug 25, 2016 link
16. Fear and Loathing: My Journey to Completing My First Ironman, Part One, What's Up Yukon, Yukon, Sep 15, 2016 link

17. Never Again: My Journey to Completing My First Ironman, Part Two, What's Up Yukon, Yukon, Sep 22, 2016 link
18. Bugaboos – Part 1, What's Up Yukon, Yukon, Dec 14, 2016 link
19. Taking the Kain Route: Bugaboos – Part 2, What's Up Yukon, Yukon, Feb 15, 2017 link
20. Pacing Ourselves to Pigeon Spire: Bugaboos – Part 4, What's Up Yukon, Yukon, Feb 22, link
21. Taking on Sunshine Crack: Bugaboos – Part 3, What's Up Yukon, Yukon, Feb 22, 2017 link
22. There and Back: Hiking the Kalalau Trail, Kauai, Hawaii, What's Up Yukon, Yukon, Oct 4, 2017 link
23. Bear Mountain – A Loving Tribute to a Living Nightmare: First attempt, summer of 2016 – Part 1 of 2 What's Up Yukon, Yukon, Sep 19, 2018 link
24. Bear Mountain – A Loving Tribute to a Living Nightmare: First attempt, summer of 2016 – Part 2 of 2 What's Up Yukon, Yukon, Oct 24, 2018 link
25. Bear Mountain – A Redux: Second Attempt - Summer 2017, What's Up Yukon, Yukon, Dec 5, 2018 link

8. WORK SUBMITTED (including publisher and date of submission)

1. Sochan L, Vanderwal T, Giaschi D, & **Weber** AM. Association between Long Range Temporal Correlations in fMRI BOLD Signal and the Excitatory-Inhibitory Transmitter Ratio. *Submitted to* Imaging Neuroscience

9. WORK IN PROGRESS (including degree of completion)

1. Archibald J, Near J, **Weber** AM, Kramer JLK, Mikkelsen M, Craven A, Oeltzschner G, MacMillan EL, & Zölch N. An End-to-End Guide on How to Simulate an sLASER MRS Basis-Set with FID-A across Vendors *Paper written. Waiting for code fix. Plan to submit to* Imaging Neuroscience.
2. Archibald J, **Weber** AM, Scheuren P, Ortiz O, Choles C, Lee J, Zölch N, MacMillan EL, & Kramer JLK. Integrating Structural, Functional, and Biochemical Brain Imaging Data with MRShiny Brain - an Interactive Web Application *Paper written. Waiting for reconsenting process. Plan to submit to* Scientific Data.
3. Alexander Mark **Weber**, Alexander ***Rauscher***, & Lyndia C Wu. Investigating Head Impacts and Concussions in Ice Hockey Players *We are currently in the data analysis period. I have helped with designing the pulse sequences and with data analysis.*
4. Evelyn Armour, Mia McLean, Ruth Grunau, & Alexander Mark **Weber**. Fractal Analysis of Resting State fMRI Signal in Preterm Infants Scanned at Eight Years *Data analysis complete; M McLean is writing two papers.*

10. ONGOING COLLABORATIONS

Local

1. Ruth Grunau, Neonatal brain MRI
2. Dewi Schrader, Focal cortical dysplasia detection
3. Stefan Reinsberg, Physics & Astronomy: Brain oxygenation using cerebral vascular reactivity
4. David Li, Radiology: Neurotrauma
5. Todd Woodward, Principal component analysis of fractional anisotropy in white matter of subjects with schizophrenia
6. Osman Ipsiroglu, Iron deficiency in children and adolescents with restless leg syndrome
7. Tim Oberlander, Gut microbiome and brain MRI
8. Tammy Vanderwal, fractal dynamics of fMRI
9. Evelyn Stewart, fractal dynamics of fMRI in children with OCD
10. Donna Lang, impact of e-cigarettes containing nicotine on white matter microstructure in young adults
11. Osman Ipsiroglu, Sleep and concussion
12. Ruth Grunau, Canadian Brain Platform (CNBP): a next-generation framework for the early identification of behavioural deficits in at-risk newborns
13. Anita Datta and Gabriella Horvath: Rett Syndrome MRI
14. Jonathan Rayment and Rachel Eddy: hyperpolarized xenon lung MR imaging
15. Shannon Kolind: Hyperfine portable 64mT MRI Scanner
16. Tamara Vanderwal: Mutli-echo fMRI pulse sequence development and data analysis
17. Deborah Giaschi: MEGA-PRESS J-editing for GABA measurement
18. Jess Archibald: ASL-prep help with ASL processing
19. Jess Archibald: ShinyR Open Source Spectroscopy
20. Jill Zwicker: processing large imaging datasets on high performance computing clusters (UBC's Sockeye or BCCHR's GPCC)
21. Jill Zwicker: VBM analysis of children with Developmental Coordination Disorder
22. Liisa Holsti and Manon Ranger: COMFORT MRI

National and International

1. Günter Grabner, Department of Radiologic Technology, Carinthia University of Applied Sciences, Klagenfurt, Austria: Denoising of myeling water imaging
2. Steven Miller, Toronto: Neonatal brain MRI
3. Yuting Zhang, Department of Radiology, Children's Hospital of Chongqing Medical University: Neonatal brain MRI,
4. Department of Radiology, Vienna Medical University: Advanced MRI for the detection of focal cortical dysplasia