

**CANADIAN ASSOCIATION OF NEUROPATHOLOGISTS
L'ASSOCIATION CANADIENNE DES NEUROPATHOLOGISTES**

60th ANNUAL BUSINESS MEETING

Virtual - Zoom

Thursday October 22nd, 2020

1200-1330 CDT

AGENDA

- 1. Call to Order**
- 2. Notice of Quorum**
- 3. Approval of Agenda**
 - a. Motion to approve the CANP 2020 business meeting agenda
- 4. Approval of Minutes of 59th Annual Business Meeting, Kingston, Ontario**
 - a. Motion to approve the CANP 2019 business meeting minutes
- 5. President's Report – Dr. Peter Gould (See addendum A)**
- 6. Secretary-Treasurer's Report – Dr. Peter Schutz**
 - a. Motion to approve the two new CANP members
 - b. Motion to approve the Event and Management Plus Inc contract
 - c. Motion to approve the CANP 2019/20 financial statements
 - d. Motion to approve the CANP 2020 Membership dues increase
 - e. Motion to approve the election of one new regular member to the Endowment Trust Fund Committee
- 7. CPD – Julia Keith**
- 8. Professional Affairs committee – David Munoz**
 - a. Motion to approve the Abstract Publication Strategy
- 9. Archives – Events & Management Plus Inc**
- 10. Website update - Dr. A. Gao**
- 11. RCPSC NP Specialty Committee – Dr. Patrick Shannon**
- 12. International Society of Neuropathologists – Dr. Del Bigio**
- 13. Future meetings**
 - a. 2021 – currently planned for Saskatoon in October. May be changed to virtual if travel is restricted.
- 14. Adjournment**

Addendum A

5.0 President's Report – Dr. Peter Gould

The year 2020 will be remembered by our members as the year of the pandemic.

Our association began the year with the launch of the CANP twitter account @NeuropathCANP and rejuvenation of the Executive, as Peter Schutz took over the role of secretary-treasurer from Julia Keith.

We began to plan the 2020 meeting, and invited speakers for our symposium and the named lectures. We also spoke with the Ontario Molecular Pathology Research Network about co-development of a molecular neuropathology educational workshop to precede the Saskatoon meeting. At the same time we followed up on our plan to engage the Events & Management Plus association management company and drew up a request for services which we submitted at the end of March. By this time the disruptive effects of the pandemic were already starting to be felt and we had to consider modifying our previous arrangements for the Saskatoon conference.

We finalized our arrangements with Events & Management Plus at the beginning of May so they could assume the day-to-day administration of association affairs, including an overhaul of the canp.ca website and renegotiation of our Saskatoon contracts.

Andrew Gao took over from Jason Karamchandani as CANP webmaster at this time.

I would like once again to thank Julia and Jason for all their hard work of behalf of the association, some of which continues behind the scenes.

Following the 2020 AANP virtual meeting in June, we decided it was feasible to transition our own meeting to a virtual format, although we had to drop our plans for the molecular neuropathology educational workshop. At the time of this report our preparations are well underway and we are confident that the virtual meeting will be a success.

Nevertheless there are obvious benefits of physical meetings, and we remain committed to meeting next year in Saskatoon once life returns more to normal.

I hope you have succeeded in staying safe in these uncertain times, and I thank you for taking time to participate in the 2020 annual business meeting in order to chart the course ahead for our association.

6.0 Secretary-Treasurer's Report – Dr. Peter Schutz

Major developments in 2020, including hiring Events and Management Plus for management services for our association and transitioning to a virtual meeting because of the COVID19 pandemic, are to some extent reflected in the financial facts of the past year, and will have implications in future years.

The membership has remained stable over the past year with one request for a transition from junior to active, one from active to retired, with a total membership of 104 (85 regular; 7 junior; 11 retired). We look forward to the election of Dr. Andrew Gao, proposed by Dr. Keith and seconded by Dr. Munoz, as new regular member, and Dr. Chris Newell as new junior member, supported by Dr. Ng, at this year's business meeting. Curricula vitae for both will be distributed to attendees of the business meeting.

We remember Dr. Samuel K. Ludwin and Dr. François Gagné, who passed away during last year.

In April we have signed a contract with Events and Management Plus (EM+) for a monthly fee of \$ 833.33 before taxes with a term of appointment until 2023. The contract covers services for a central office structure, membership and finance management, website and communications, support of the annual meeting and support of continuing professional development. Expertise from EM+ has proved invaluable for the transition to a virtual meeting. Improvements of association financial management with increased efficiency are expected over the coming years. In view of the positive experience of the CANP executive with EM+, we will seek confirmation for this arrangement at this year's business meeting.

Financial statements are attached to this report. Service fees for EM+ are accounted for as management fees. For reasons related to rules governing the RBC Money Market Fund, the fund had to be sold in its entirety, not just to cover a shortfall of \$ 20,000 for the 2019 meeting and as previously approved at the business meeting. Re-investment of the additional funds will be discussed at the Endowment Trust Fund Committee meeting. A significant amount of dues payments were still outstanding at the time of compiling this report. We will make efforts to remind the membership to pay association dues.

In view of significant distributions from the Endowment Trust Fund in 2018 and 2019 to supplement the funding of annual meetings, we will review financing of future meetings closely and aim to enforce greater budgetary discipline. At the same time our operating expenses have increased by \$ 900 per month in order to benefit from external management services, which will eventually improve future budgeting, but which will also require additional current revenue. We will present a motion to increase the annual dues for regular members by \$ 100 as of 2021 in order to stabilize our financial situation.

This year's virtual meeting is budgeted at \$ 15,000 excluding speaker honoraria and awards. Conference fees received for this meeting up to the time of writing this report amount to \$ 14,750, so that we are hopeful to stay within reasonable financial limits for this year's meeting.

The Endowment Trust Fund Committee Meeting will be held on October 8 and a report will be provided at the Annual General Meeting.

7.0 CPD – Julia Keith

Continuing Professional Development:

H. Dow submitted CPD interim report to the RCPSC for the re-accreditation application for Standards that were partially compliant. Report was accepted as complete.

RCSPC grant was applied for by H.Dow, EM+

8.0 Professional Affairs committee – David Munoz

Committee Update. The PAC has not held a meeting since the last CANP annual meeting in 2019. We will be asking for nominations and volunteers to refresh the PAC. Current membership includes Drs Peter Gould, Julia Keith, Leslie Hamilton, and myself.

Professional Practice Guidelines. The plans for next year include writing Canadian Professional Practice Guidelines for neuropathology. The PAC will consider alternatives for publication of the abstracts presented at the CANP meeting.

CANP 2020 AGM Motion - Abstract Publication Strategy

9.0 Archives – Events & Management Plus Inc

EM+ are hosting the CANP archives. We currently have 5 boxes of documents containing:

- Financial documents
- Abstract submissions
- Membership information
- Annual Meeting documents

Known items to be forwarded to the office: Dr. Jason Karamchandani has some items which may be put on display at . Dr. Peter Gould has an old volume of Diagnostic Case submission from 1964-1977 to be forwarded.

Any member who have old CANP-ACNP materials should contact canp@eventsmgt.com to arrange sending them to the office.

10.0 Website update - Dr. A. Gao

The CANP website will be receiving a much need update in the coming months (late 2020, early 2021) with the support of Events Management (Heather Dow and Colleen Fifield). The goals are to improve website functionality and user experience and update important CANP- and neuropathology-related content. We have already made a few changes in the website design and content, and future tasks include the following:

- Migrate to a more modern platform with improved user experience (Wordpress)
- Refresh the website's visual design
- Improve user login and account management

- Update the public and private member directory
- Increase website functionality, including: meeting registration, abstract submission, membership application and renewal (payment of fees)
- Update and organize website content, including: past and present meeting information, archived diagnostic case presentations, National Neuropathology lecture series
- Increase accessibility of important updates and announcements for CANP members
- Improve public engagement and integration with social media

Comments and suggestions regarding website changes can be directed to: canp@eventsmgt.com and/or andrew.gao@uhn.ca.

11.0 RCSPC NP Specialty Committee – Dr. Patrick Shannon

The RCSPC Specialty Committee meeting is scheduled for October 14th and a report will be given at the AGM.

RCSPC grant was applied for by H.Dow, EM+

12.0 International Society of Neuropathologists – Dr. Del Bigio

Council Dr. Seth Love (Bristol, UK) is the President; Monika Hofer (Oxford UK) is the Secretary General. Society Officers are identified at <https://www.intsocneuropathol.com/society-officers/>. Marc Del Bigio is currently (since 2018) an “ordinary (i.e. voting) member” of council.

- a. Publications
 - i. Brain Pathology: Markus Glatzel (University of Hamburg) is the current editor. See <https://onlinelibrary.wiley.com/journal/17503639>. At the last editorial meeting in July 2020, we discussed the likelihood that Brain Pathology will become an online only journal and that the Case Report section might be restructured.
 - ii. <https://onlinelibrary.wiley.com/journal/17503639>. At the last editorial meeting in July 2020, we discussed the likelihood that Brain Pathology will become an online only journal and that the Case Report section might be restructured.
 - iii. ISN Book series: a new book, Infections of the Central Nervous System: Pathology and Genetics (2020), was published by Wiley (see <https://www.wiley.com/en-ca/International+Society+of+Neuropathology+Seriesc-7563>).
 - iv. The 2nd edition of Developmental Neuropathology was published in 2018.
 - v. Planned future volumes include: Cerebrovascular Diseases (revised), forensic, & white matter diseases.
 - vi. 5th edition of the WHO Classification of Tumours of the Central Nervous System is expected for 2021. The published cIMPACT-NOW updates give a hint of the changes to be incorporated into the new edition.
- b. Committee activities 2019-20. Most of the activities have surrounded responses to COVID-19, including rescheduling of meetings (see below).
- c. Future ISN (and affiliate) meetings:
 - i. The European Congress of Neuropathology (ECNP) was postponed and is now

scheduled from 31 May -3 June 2021 in Odense Denmark (the ISN council and the editorial board of Brain Pathology will hold meetings in conjunction with this conference).

- ii. The 20th International Congress of Neuropathology (ICN), originally scheduled for 2022 in Berlin Germany, has been postponed until 2023.
- iii. 2027 ICN - Bids are being solicited from National Neuropathological Societies to host the 21st International Congress of Neuropathology (see <https://www.intsocneuropathol.com/2015/07/invitation-tobid-for-2022-congress/>). Ian Mackenzie and I had written a good application for the 2022 meeting that was awarded to Berlin. At the 2019 CANP meeting in Halifax, no-one expressed interest in a repeat application. However, if any members have changed their minds, we have background documents to share. The process remains open, with Sydney Australia the only interested party so far.

Addendum B – CANP-ACNP 2020 List of Motions

Item 3.a. Approval of the CANP 2020 Business Meeting agenda

Motion: To approve the CANP 2020 business meeting agenda as posted.

Item 4.a. Approval of the 59th Annual Business Meeting minutes

Motion: To approve the CANP 59th Annual Business Meeting, Kingston, Ontario as posted.

Item 6.a. Approval of New CANP Members

Motion: To approve Andrew Gao (Full Member) and Christopher Newell (Junior Member) to join the membership of CANP.

Item 6.b. Events and Management Plus Contract

Motion: WHEREAS

This association agreed at the 2019 AGM to a one year contract with Events and Management Plus for up to \$10,000 upon verification of references from other national physician associations

AND

References were subsequently verified by the executive

AND

The work undertaken by Events and Management Plus to date has greatly benefitted the association

MOVED

That this association agrees to continue its management contract with Events and Management Plus through April 30, 2023.

Item 6.c. Approval of Financial Statements

Motion: Whereas the Statement of Revenue and Expenditure and the Statement of Assets and Liabilities have been presented to the Business Meeting for the fiscal period October 2019 – September 2020,

MOVE THAT

CANP financial statements for the fiscal period 2019/20 are accepted.

Item 6.d. Approval of Membership Dues Increase

Motion: WHEREAS

The association membership dues have been fixed at \$200/year for many years

AND

The increasing need for pertinent continuing professional development activities in neuropathology has led to increasing expenses

MOVED

That association membership dues are increased by \$100 to \$300/year as of 2021.

Item 6.e. Approval of New ETFC member

Motion: To approve TBD to join the Endowment Trust Fund Committee.

Item 8.a. Approval of the Abstract Publication Strategy

Motion: Whereas the annual Scientific Meeting is a major component of the continuing professional development (CPD) offered by the CANP, and the abstracts of this meeting provide a record of past and current CPD activities and the terms of reference for the Professional Affairs Committee (PAC) include "Facilitate the educational efforts of the CANP to other groups, organizations and the general public."

MOVED THAT

- i. these abstracts should be made freely available online to the neuropathology community at-large, in keeping with our mission statement to promote the discipline of Neuropathology in Canada with respect to teaching, education, research, maintenance of competence and other professional affairs.
- ii. The PAC should determine the best online publication strategy for these abstracts and report to the President and Executive of the CANP by 30 April 2021 in order to align the abstract submission process for the 2021 meeting with the abstract publication strategy.

CANADIAN ASSOCIATION OF NEUROPATHOLOGISTS

Financial Statements prepared on a cash basis in Canadian Dollars.
Period **October 1, 2019 to September 27, 2020**

Statement of Revenue and Expenditure

Revenue	
Dues	7,800
Sales of conference and banquet tickets	20,580
Proceeds of disposition of assets	51,680
Donations	0
Total revenue	80,060
Expenses	
Membership fees	1,685
Management fees	4,708
Travel expenses	0
Bank fees	1,687
Conference venue and banquet	28,787
Travel for speakers	3,067
Travel bursaries	2,250
Awards	1,000
Speaker honoraria	6,000
CME other	0
Office expenses	899
Total Expenses	50,084
NET REVENUE (LOSS)	29,976

Statement of Assets and Liabilities

Assets	
Current Assets	
RBC Money Market Investment	0
Cash	57,965
Total current	57,965
Long-term Assets	
MD Stable Income Fund	182,305
MD Precision Balanced Portfolio	61,601
Total long term	243,906
Capital Assets	
Buildings and Land	0
Total capital assets	0
TOTAL ASSETS	301,871
Liabilities	
Current liabilities	0
Long term liabilities	0
TOTAL LIABILITIES	0
NET WORTH	301,871

as of July
2020

Curriculum Vitae

Andrew Feng Gao MD MSc

A. Date Curriculum Vitae is Prepared: 2020-09-02

B. Biographical Information

Primary Office Laboratory Medicine Program, University Health Network
Toronto General Hospital, 11 Eaton Wing, Room 426
200 Elizabeth St, Toronto, ON, Canada M5G 2C4
Telephone 416.340.4800 x3105
Fax 416.340.5517
Email andrew.gao@uhn.ca

1. EDUCATION

Degrees

2018 Master of Science, Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada Supervisor: Lili-Naz Hazrati
2012 Doctor of Medicine, Faculty of Medicine, University of Toronto, Toronto, ON, Canada
2008 Honours Bachelor of Science *with High Distinction*, Pharmacology, Faculty of Arts and Science, University of Toronto, Toronto, ON, Canada

Postgraduate, Research, and Specialty Training

2012-2019 Resident, Neuropathology, Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada
2016-2019 Chief Resident, Neuropathology, Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada
2013-2018 Clinician Investigator Program, University of Toronto, Toronto, ON, Canada

Qualifications, Certifications, and Licenses

2019/07- Independent Practice License, College of Physicians and Surgeons of Ontario
License#: 98164
2019/07- Fellow, Neuropathology, Royal College of Physicians and Surgeons of Canada
2013- Licentiate, Medical Council of Canada

2. EMPLOYMENT

Current Appointments

2019/07- Staff Neuropathologist, Laboratory Medicine Program, University Health Network, Toronto, ON, Canada
2019/09- Assistant Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada

3. HONOURS AND CAREER AWARDS

Distinctions and Research Awards

INTERNATIONAL

Received

2018 **American Association of Neuropathologists Conference Travel Award**, Louisville, KY, USA. (Research Award)
Travel Award for 2018 annual AANP conference. Total Amount: 500 USD

NATIONAL

Received

2018 **Morrison H. Finlayson Award**, Canadian Association of Neuropathologists, Winnipeg, MB, Canada. (Research Award)
Best basic sciences/research paper by a trainee. Total Amount: 1000 CAD

2014 **Canada Graduate Scholarship-Master's Program Award**, Canadian Institutes of Health Research, Ottawa, ON, Canada. (Research Award)
Graduate research financial support. Total Amount: 17500 CAD

2009 **Mach-Gaensslen Foundation Award**, Mach-Gaensslen Foundation of Canada, Ottawa, ON, Canada. (Research Award)
Undergraduate medical research financial support. Total Amount: 5500 CAD.

LOCAL

Received

2013 **University of Toronto Fellowship**, Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada. (Research Award)
Graduate research financial support. Total Amount: 5000 CAD

2009 **Comprehensive Research Experience for Medical Students (CREMS) Summer Student Stipend**, Faculty of Medicine, University of Toronto, Toronto, ON, Canada. (Research Award)
Undergraduate medical research financial support. Total Amount: 5500 CAD

2008 **Summer Undergraduate Student Research Award**, Institute of Medical Science, University of Toronto, Toronto, ON, Canada. (Research Award)
Undergraduate research financial support. Total Amount: 4800 CAD

2004-2008 **Dean's List Scholar**, University of Toronto, Toronto, Ontario, Canada (Distinction)
Undergraduate academic excellence (4 years consecutively)

2008 **Dr. James A. & Connie P. Dickson Scholarship in the Sciences and Mathematics**, University of Toronto, Toronto, ON, Canada (Distinction)
Undergraduate academic excellence. Total Amount: 500 CAD

2006 **Summer Undergraduate Student Research Award**, Institute of Medical Science, University of Toronto, Toronto, ON, Canada. (Research Award)
Undergraduate research financial support. Total Amount: 4800 CAD

2006 **Dr. James A. & Connie P. Dickson Scholarship in the Sciences and Mathematics**, University of Toronto, Toronto, ON, Canada (Distinction)
Undergraduate academic excellence. Total Amount: 500 CAD

Andrew GAO

- 2006 **University of Toronto Scholar**, University of Toronto, Toronto, ON, Canada (Distinction)
Undergraduate academic excellence. Total Amount: 1500 CAD
- 2005 **Summer Undergraduate Student Research Award**, Institute of Medical Science, University of Toronto, Toronto, ON, Canada. (Research Award)
Undergraduate research financial support. Total Amount: 4800 CAD
- 2005 **Dr. James A. & Connie P. Dickson Scholarship in the Sciences and Mathematics**, University of Toronto, Toronto, ON, Canada (Distinction)
Undergraduate academic excellence. Total Amount: 500 CAD
- 2005 **University of Toronto Scholar**, University of Toronto, Toronto, ON, Canada (Distinction)
Undergraduate academic excellence. Total Amount: 1500 CAD

Teaching Awards

PROVINCIAL/ REGIONAL

Received

- 2019 **Professional Association of Residents of Ontario (PARO) Resident Teaching Award**, PARO, Toronto, ON, Canada
Given to Ontario residents who provide outstanding clinical teaching experiences to junior housestaff and clinical clerks. Total Amount: 1000 CAD

4. PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Professional Associations

- 2020- **Member**, Canadian Association of Neuropathologists
- 2015- **Member**, Canadian Association of Pathologists
- 2014- **Member**, College of American Pathologists
- 2012- **Member**, Ontario Medical Association
- 2012- **Member**, Canadian Medical Association

Administrative Activities

INTERNATIONAL

International Society of Neuropathology (ISN)

- 2020- **Social Media Editor**, ISN twitter account @IntSocNeuropath

NATIONAL

Canadian Association of Neuropathologists (CANP)

- 2020- **Webmaster**, www.canp.ca
- 2020- **Social Media Editor**, CANP twitter account @NeuropathCANP

LOCAL

Faculty of Medicine, University of Toronto

- 2020 **File Reviewer**, Undergraduate Medical Education Admissions, Toronto, ON, Canada

Andrew GAO

2017 **Member**, Postgraduate Medical Education Internal Review (Internal Medicine Residency Program), Toronto, ON, Canada
2017 **File Reviewer**, Undergraduate Medical Education Admissions, Toronto, ON, Canada
2016 **File Reviewer**, Undergraduate Medical Education Admissions, Toronto, ON, Canada
2010 **File Reviewer**, Undergraduate Medical Education Admissions, Toronto, ON, Canada

Neuropathology Residency Training Program, University of Toronto

2019- **Educational Site Coordinator – University Health Network**, Neuropathology Residency Training Committee, Toronto, ON, Canada
2019- **Member, Education Sub-Committee**, Neuropathology Residency Training Committee, Toronto, ON, Canada
2019-2020 **File Reviewer and Interviewer**, CaRMS applications, Neuropathology Residency Training Program, Toronto, ON, Canada
2016-2019 **Chief Resident**, Neuropathology Residency Training Program, Toronto, ON, Canada
2016-2019 **Resident Representative**, Neuropathology Residency Training Committee, Toronto, ON, Canada

Peer Review Activities

ASSOCIATE OR SECTION EDITING

Junior Section Editor

2008-2009 University of Toronto Medical Journal, Book Reviews section

EDITORIAL BOARDS

Senior Social Media Editor

2020- Brain Pathology, twitter account @brainpathol

MANUSCRIPT REVIEWS

Ad Hoc Reviewer

2019- Modern Pathology
2019- Journal of Clinical Pathology

C. Publications

1. PEER-REVIEWED PUBLICATIONS

Journal Articles

1. Alsafwani N, Alrjoub M, Djuric U, **Gao AF**, Diamandis P. Tumor-Infiltrating Lymphocytes Are Enriched in Non-Hypoxic Glioblastoma Niches. Accepted, Journal of Neuropathology and Experimental Neurology 2020. **Coauthor**.
2. **Gao AF**, Keith JL, Gao FQ, Black SE, Moscovitch M, Rosenbaum RS. Neuropathology of a remarkable case of memory impairment informs human memory. Neuropsychologia 2020;140:107342. **Principal author**.
3. **Gao AF**, Munoz DG. Update on the molecular pathology of diffuse gliomas. Can J Pathol 2018;10:48-56. **Principal author**.

4. **Gao AF**, Faust-Socher A, Del Bigio M, Lang AE, Munoz DM. Progressive ataxia and palatal tremor: 2 cases of a novel tauopathy. *Movement Disord* 2017;32:1465-1473. **Principal author.**
5. Yoon JY, **Gao A**, Das S, Munoz DG. Epidemiology and clinical characteristics in the elderly: an update. *J Clin Neurosci* 2017;43:264-266. **Coauthor.**
6. Visanji NP, Marras C, Kern DS, AlDakheel A, **Gao AF**, Liu LWC, Lang AE, Hazrati LN. Colonic alpha synuclein: not a diagnostic biomarker for Parkinson's disease. *Neurology* 2015;84:609-16. **Coauthor.**
7. Roedding AS, **Gao AF**, Au-Yeung W, Scarcelli T, Li PP, Warsh JJ. Effect of Oxidative Stress on TRPM2 and TRPC3 in B Lymphoblast Cell Lines from Bipolar Disorder Patients. *Bipolar Disord* 2012;14:151-61. **Coauthor.**
8. Roedding AS, **Gao AF**, Wu ALM, Li PP, Kish SJ, Warsh JJ. TRPC3 protein is expressed across the lifespan in human prefrontal cortex and cerebellum. *Brain Res* 2009;1260:1-6. **Coauthor.**

Case Reports

1. Abdollahi M, **Gao AF**, Munoz DG. A case of disseminated microscopic demyelination with multifocal dystrophic calcification. *Neuropathology*. 2020;40:308–14. **Coauthor.**
2. Wang JZ, Pirouzmand N, Ijad N, Velasquez C, **Gao A**, Karimi S, et al. Clinical value of methylation testing: a case report of intraventricular schwannomas with associated molecular findings. *Neuro-oncology Adv*. 2020;2(1):vdaa029. **Coauthor.**
3. Keith J, Swinkin E, **Gao AF**, Alminawi S, Zhang M, McGoldrick P, McKeever, P, Robertson J, Rogaeva E, Zinman L. The first neuropathological description of CHCHD10 mutated ALS. *Neurology Genetics* 2020;6(1):e394. **Coauthor.**
4. Voisin MR, Ovenden C, Tsang DS, Gupta AA, Huang A, **Gao AF**, Diamandis P, Almeida JP, Gentili F. Atypical teratoid/rhabdoid sellar tumor in an adult with a familial history of a germline SMARCB1 mutation: case report and review of the literature. *World Neurosurg* 2019;127:336-345. **Coauthor.**
5. **Gao AF**, Vinik O, Munoz DG. A 47-year-old woman with weakness and rash. *Brain Pathol* 2019;29:303-304. **Principal author.**
6. Van Ommeren R, **Gao AF**, Blaser S, Chitaya D, Hazrati LN. BRAT1 mutation: the first reported case of Chinese origin and review of the literature. *J Neuropathol Exp Neurol* 2018;77:1071-8. **Coauthor.**
7. **Gao AF**, Saleh PS, Kassardjian CD, Vinik O, Munoz DG. Brachio-cervical inflammatory myopathy: case report and review of the literature. *Neurol: Neuroimmunol and Neuroinflamm* 2018;5:e410. **Principal author.**
8. Suthiphosuwana S, Lin A, **Gao AF**, Munoz D, Spears J, Bharatha A. Delayed presentation of cerebral schistosomiasis presenting as a tumor-like brain lesion. *Neuroradiol J*. 2018;31:395-398. **Coauthor.**
9. **Gao AF**, Ramsay D, Twose R, Rogaeva E, Tator C, Hazrati LN. Chronic traumatic encephalopathy-like neuropathological findings without a history of trauma. *Int J Pathol Clin Res* 2017;3:050. **Principal author.**

Book Chapters

1. **Gao AF**. Pathology of Skull Base Tumors. In: Di Ieva A, Lee J, Cusimano M, editors. *Handbook of Skullbase Surgery*. New York: Thieme; 2016. p.131-179. **Principal author.**
2. **Gao AF** and Goela K. Clinical Pharmacology. In: Kolin D and Klostranec J, editors. *The Toronto Notes 2012*. 28th edition. Toronto: Toronto Notes for Medical Students, Inc; 2012. p. CP1-15. **Co-Principal author.**

In Preparation

1. **Gao AF**, Blaser S, Chitayat D, D'Arco F, Shannon P. Pontine tegmental cap dysplasia: 2 cases with fetal neuropathological findings. *Manuscript in Preparation*. **Principal author.**
2. **Gao AF**, Abdollahi M, Alsahlawi A, Okura H, Hawkins C, Cusimano MD, Munoz DG. Cerebellar glioblastoma: a clinicopathologic series of 16 cases. *Manuscript in Preparation*. **Principal author.**

Other Publications

1. **Gao AF.** Digital Case Presentations. University of Toronto Digital Medicine Library, Dept. of Laboratory Medicine and Pathobiology, Toronto, Canada.

The Digital Laboratory Medicine Library contains a comprehensive collection of digital medical images. The images have been identified and chosen for their value in contributing to the educational mission of the Department across all learning levels. They may be accessed freely over the internet. I have published **78** annotated images on this resource. This contribution was subject to a peer-review process. <http://dml.imp.utoronto.ca>.

2. SUBMITTED PUBLICATIONS

Journal Articles

1. **Gao AF**, Alsafwani N, Smith AC, Diamandis PD. Composite dual-genotype oligoastrocytoma: making a comeback? *Under Review, Journal of Neuropathology and Experimental Neurology 2020. Principal author.*
2. Paff M, Samuel N, Alsafwani N, Paul D, Diamandis P, Climans SA, Kucharczyk W, **Gao AF**, Lozano AM. Leukoencephalopathy with brain calcifications and cysts (Labrune syndrome): diagnosis and neurosurgical management of a rare disease. *Under Review, Journal of Neurosurgery 2020. Senior coauthor.*
3. Desmarais P, **Gao A**, Keith J, Lanctot K, Rogaeva E, Ramirez J, et al. White matter hyperintensities in frontotemporal lobar degeneration and Alzheimer's disease. *Under Review, Journal of Neurology, Neurosurgery & Psychiatry 2020. Coauthor.*
4. Faust K, Fiala C, Portante A, Alsafwani N, Bala S, **Gao A**, Djuric U, Diamandis P. Automated large-scale histomorphologic analysis in surgical neuropathology using deep learning. *Under Review, Science Translational Medicine 2020. Coauthor.*

D. Presentations and Special Lectures

1. INTERNATIONAL

Presented Abstracts

- | | |
|------|--|
| 2020 | Alsafwani N, Alrjoub M, Djuric U, Gao AF , Diamandis P. Tumor-Infiltrating Lymphocytes Are Enriched in Non-Hypoxic Glioblastoma Niches. Annual Meeting of the American Association of Neuropathologists, Virtual. |
| 2018 | Presenter. Gao AF, Faust K, Xie Q, Djuric U, Diamandis P. Development of a deep learning decision support tool for intraoperative histopathologic image analysis. J Neuropathol Exp Neurol 2018;77:510. Annual Meeting of the American Association of Neuropathologists, Louisville, KY, USA. |
| 2018 | Presenter. Gao AF, Abdollahi M, Alsahlawi A, Okura H, Hawkins C, Cusimano MD, Munoz DG. Cerebellar glioblastoma: a clinicopathologic series of 16 cases. J Neuropathol Exp Neurol 2018;77:489-90. Annual Meeting of the American Association of Neuropathologists, Louisville, KY, USA. |
| 2018 | Presenter. Keith J, Gao AF, Swinkin E, Robertson J, Zinman L, Shoubridge E, Rogaeva E. The first neuropathological description of CHCHD10 mutated ALS. J Neuropathol Exp Neurol 2018;77:528. Annual Meeting of the American Association of Neuropathologists, Louisville, KY, USA. |
| 2017 | Presenter. Gao AF, Hazrati LN, Hawkins CE. Polymorphous low grade neuroepithelial tumour of the young. Diagnostic Slide Session, Annual Meeting of the American Association of Neuropathologists, Garden Grove, CA, USA. |
| 2017 | Presenter. Gao AF, Faust-Socher A, Al-Murshed M, Del Bigio MR, Lang AE, Munoz DM. Progressive |

ataxia and palatal tremor: 2 cases of a novel tauopathy. *J Neuropathol Exp Neurol* 2017;76:530-1. Annual Meeting of the American Association of Neuropathologists, Garden Grove, CA, USA.

- 2017 Gao AF, Faust-Socher A, Del Bigio MR, Lang AE, Munoz DM. Progressive ataxia and palatal tremor: 2 cases of a novel tauopathy. *Movement Dis* 2017;32(Suppl 2):S319. Annual Meeting of the International Parkinson and Movement Disorder Society, Vancouver, Canada.
- 2017 **Presenter.** Gao AF, Rosenbaum RS, Gao FQ, Rashed T, Yaffe MJ, Moscovitch M, Black SE, Keith JL. Patient K.C.: neuropathology of a unique case of memory impairment. *J Neuropathol Exp Neurol* 2017;76:534. Annual Meeting of the American Association of Neuropathologists, Garden Grove, CA, USA.
- 2015 **Presenter.** Gao AF, Karimi S, Hazrati LN. The role of ATP and P2X purinoceptor 7 in the pathogenesis of chronic traumatic encephalopathy. *J Neuropathol Exp Neurol* 2015;74:602. Annual Meeting of the American Association of Neuropathologists, Denver, CO, USA.
- 2015 **Presenter.** Gao AF, Karimi S, Hazrati LN. A case of chronic traumatic encephalomyelopathy without trauma. *J Neuropathol Exp Neurol* 2015;74:602. Annual Meeting of the American Association of Neuropathologists, Denver, CO, USA.
- 2011 Roedding AS, Warsh JJ, Gao AF, Li PP, Au-Yeung W, Scarcelli T. Oxidative stress and calcium dyshomeostasis in bipolar disorder involve TRPM2 and TRPC3 channel expression and function. *Biol Psychiatry* 2011;69(Suppl 1):96S. Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, USA.
- 2010 Roedding AS, Au-Yeung W, Gao AF, Li PP, Warsh JJ. Chronic oxidative stress modulates TRPC3 and TRPM2 channel expression: relevance to bipolar disorder. *Biol Psychiatry* 2010;67(Suppl 1):241S. Annual Meeting of the Society of Biological Psychiatry, New Orleans, LA, USA.
- 2010 Warsh JJ, Roedding AS, Au-Yeung W, Gao AF, Li PP. Chronic oxidative stress differentially modulates expression of TRPC3 and TRPM2 channels: relevance to bipolar disorder. Annual Meeting of the American Society for Neurochemistry, Santa Fe, NM, USA.
- 2008 Roedding AS, Wu ALM, Gao AF, Li PP, Kish SJ, Warsh JJ. Canonical transient receptor potential type 3 channel protein is expressed across the lifespan in human frontal cortex and cerebellum. Annual Meeting of the Society for Neuroscience, Washington, DC, USA.

Other Presentations

- 2020 **Presenter.** Gao AF. Classification of Gliomas: From Inception to State of the Art. Prepared for *NeurosciQ*. Available from: https://www.youtube.com/watch?v=NQ_1qZqfhlc.

2. NATIONAL

Invited Lectures and Presentations

- 2020/06 **Invited speaker.** "Grossing of the brain at autopsy". Online Surgical Pathology Continuing Education Conference 2020.

Presented Abstracts

- 2018 **Presenter.** Gao AF, Abdollahi M, Munoz DG. Diffuse midline glioma with leptomeningeal presentation. Diagnostic Slide Session, Annual Meeting of the Canadian Association of Neuropathologists, Halifax, Nova Scotia.
- 2018 Abdollahi M, Gao AF, Alsahlawi A, Okura H, Hawkins C, Cusimano MD, Munoz DG. Cerebellar glioblastoma: a clinicopathologic series of 16 cases. Annual Meeting of the Canadian Association of Neuropathologists, Halifax, Nova Scotia, Canada.
- 2017 **Presenter.** Gao AF, Chitayat D, Hazrati LN. BRAT1-associated neurodegeneration. Diagnostic Slide Session, Annual Meeting of the Canadian Association of Neuropathologists, Winnipeg, MB, Canada.

Andrew GAO

- 2017 **Presenter.** Gao AF, Hazrati LN. The role of ATP and P2X purinoceptor 7 in the pathogenesis of cerebral tau. Can J Neurol Sci 2018;45(Suppl 1):S5. Annual Meeting of the Canadian Association of Neuropathologists, Winnipeg, MB, Canada.
- 2016 **Presenter.** Gao AF, Faust-Socher A, Del Bigio MR, Lang AE, Munoz DM. Progressive ataxia and palatal tremor: 2 cases of a novel tauopathy. Can J Neurol Sci 2017;44(Suppl 1):S4. Annual Meeting of the Canadian Association of Neuropathologists, Niagara-on-the-Lake, Canada.
- 2016 **Presenter.** Gao AF, Rosenbaum RS, Gao FQ, Moscovitch M, Tulving E, Black SE, Keith JL. Patient K.C.: neuropathology of a unique case of memory impairment. Can J Neurol Sci 2017;44(Suppl 1):S3-4. Annual Meeting of the Canadian Association of Neuropathologists, Niagara-on-the-Lake, Canada.
- 2015 **Presenter.** Gao AF, Blaser S, Chitayat D, D'Arco F, Shannon P. Autopsy findings in pontine tegmental cap dysplasia. Can J Neurol Sci 2015;42(Suppl 1):S6. Annual Meeting of the Canadian Association of Neuropathologists, Banff, Canada.
- 2012 **Presenter.** Gao AF, Bilbao J, Baskind R, Keith J. JC virus granule cell neuronopathy. Can J Neurol Sci 2013;40(Suppl 1):113-22. Annual Meeting of the Canadian Association of Neuropathologists, Mt. Tremblant, Canada.
- 2006 **Presenter.** Gao AF, Gladstone DJ, Leibovitch FS, Lawrence JM, Ehrlich LE, Caldwell CB, Black SE. A prospective study of crossed cerebellar diaschisis in hemispheric stroke. Can J Neurol Sci 2006;33(Suppl 1):S15. Annual Scientific Meeting of the Canadian Congress of Neurological Sciences, Montreal, Canada.

3. LOCAL

Invited Lectures and Presentations

- 2018/09 **Invited speaker.** "WHO Classification of Tumours of the Pituitary Gland: an update". Presented at Multidisciplinary Pituitary Rounds, St. Michael's Hospital, Toronto, ON, Canada.

E. Research Supervision

1. PRIMARY OR CO-SUPERVISION

Clinical Fellow (MD)

- Jul 2019 - **Neuropathology Clinical Fellow.** Noor Alsafwani. Supervisee Position: Clinical Fellow. Supervisee Institution: University Health Network, Toronto, ON, Canada.

Undergraduate Education

Secondary Supervisor

- May 2020 – Sep 2020 **4th Year Undergraduate.** Clare Fiala. Supervisee Position: Summer Research Student. Supervisee Institution: University Health Network, Toronto, ON, Canada.
- May 2015 – Aug 2015 **4th Year Undergraduate.** Sahar Salimi-Mosavi. Supervisee Position: Summer Research Student. Supervisee Institution: Tanz Centre for Research in Neurodegenerative Disease, University of Toronto, Toronto, ON, Canada.
- May 2008 – Aug 2008 **4th Year Undergraduate.** Wynne Au Yeung. Supervisee Position: Summer Research Student, Supervisee Institution: Centre for Addiction and Mental Health, University of Toronto, Toronto, ON, Canada.

2. OTHER SUPERVISION

Thesis Committee Member

- Nov 2019 - **PhD Candidate.** Jeff Zuccatto, Institute of Medical Science. Supervisee Position: PhD Student. Supervisee Institution: University Health Network, University of Toronto, Toronto, ON, Canada.

F. Clinical Supervision

Clinical Fellow (MD)

- Jul 2019 - **Neuropathology Clinical Fellow.** Noor Alsafwani, University Health Network, Toronto, ON, Canada.
- Jul 2019 – Jun 2020 **Neuropathology Clinical Fellow.** Mo'ath Alrjoub, University Health Network, Toronto, ON, Canada.

Christopher Newell

Cumming School of Medicine
University of Calgary
3330 Hospital Drive NW
Calgary, Alberta, Canada
T2N 4N1

Phone: 587-585-9922

Email: cnewell@ucalgary.ca

Clinical training

2020 PGY-1 in Neuropathology, University of Calgary

Education

2017-2020 MD, University of Calgary

2012-2017 PhD in Medical Science, University of Calgary

2011 BSc EXCHANGE in Kinesiology, Charles University in Prague

2008-2012 BSc in Human Kinetics, St. Francis Xavier University

Awards

2020	Local Award, Dr. Lydia Sikora Memorial Award (2 nd Place) (\$2500), Canada
2019	National Award, CIM-CITAC Publication Award (\$500), Canada
2019	Local Award, Medical Elective Bursary (\$1,000), Canada
2019	Local Award, MD Clerkship Bursary (\$4,200), Canada
2019	Local Award, MD Differential Tuition Bursary (\$6,000), Canada
2019	Local Award, Dr. Lydia Sikora Memorial Award (2 nd Place) (\$3500), Canada
2018	Local Award, Achievers in Medical Science Scholarship (\$20,000), Canada
2018	Local Award, Leaders in Medicine Travel Award (\$850), Canada
2018	Local Award, MD Travel Award (\$750), Canada
2018	Local Award, Students' Union Travel Award (\$100), Canada
2018	Local Award, MD Differential Tuition Bursary (\$6,000), Canada
2018	Local Award, Dr. Charles MacAdams Medical Elective Award (\$800), Canada
2017	Local Award, Leaders in Medicine Travel Award (\$850), Canada
2017	Local Award, MD Differential Tuition Bursary (\$6,000), Canada
2017	Local Award, Medical Science Publication Award (\$250), Canada
2017	Local Award, Medical Science Travel Award (\$1,000), Canada
2017	Local Award, Graduate Students' Association Travel Award (\$750), Canada
2017	Local Award, ACHRI Travel Award (\$750), Canada
2017	Local Award, J.B. Hyne Research Innovation Award (\$500), Canada
2016	International Award, American Society of Human Genetics Trainee Award (\$2,500), USA
2016	National Award, Garrod Association Trainee Award (\$1,500), Canada
2016	National Award, Charlie Foundation Travel Award (\$1,500), Canada
2016-2022	Provincial Award, AIHS MD/PhD Studentship (\$180,000 - Over 6 Years), Canada
2016	Provincial Award, Alberta Graduate Citizenship Award (\$2,000), Canada
2016	Local Award, Medical Science Publication Award (x3) (\$750 Total), Canada
2016	Local Award, Medical Science Travel Award (x2) (\$2,000 Total), Canada
2016	Local Award, ACHRI Travel Award (\$750), Canada
2016	Local Award, Faculty of Graduate Studies Travel Award (\$1,000), Canada
2015	Local Award, Medical Science Travel Award (\$1,000), Canada
2014-2017	National Award, MitoCanada PhD Scholarship (\$105,000 - Over 3 Years), Canada
2014	Provincial Award, Alberta Graduate Citizenship Award (\$2,000), Canada
2014	Local Award, Medical Science Program Specific Award (\$3,000), Canada
2013	Provincial Award, Alberta Graduate Student Scholarship (\$3,000), Canada
2013	Local Award, Faculty of Kinesiology Travel Award (\$1,000), Canada

Grants

2018	Co-Applicant - Canada Mitochondrial Network (ID Pending), NCE Program (\$547,500), Canada
2018	Primary Applicant - Trainee Small Research Grant Competition (ID 10002027), ACHRI (\$3,000), Canada
2017	Co-Applicant - Planning and Dissemination Grant (ID 323379), CIHR (\$20,000), Canada

Publications

JOURNAL ARTICLES

- 2020 Kerr, M., Hume, S., Omar, F., Koo, D., Barnes, H., Khan, M., Aman, S., Wei, X., Alfuhaid, H., McDonald, R., McDonald, L., Newell, C., Hittel, D. S., & Khan, A. (2020), MITO-FIND: A study in 390 patients to determine a diagnostic strategy for mitochondrial disease, **Molecular Genetics and Metabolism**, In revision.
- 2020 Newell, C., Leduc-Pessah, H., Bell-Graham, L., Rasic, R., & Carter, K. (2020), Evaluating and Enhancing the Preparation of Families before Pediatric Surgery. **Children**, In revision.
- 2020 Keough, M., Newell, C., Rheaume, A. R., & Sankar, T. (2020), Association between graduate degrees and publication productivity in academic neurosurgery. **Canadian Journal of Neurological Sciences**, Accepted.
- 2020 Gault, M. A., Raha, S. S., & Newell, C. (2020), The perception of disability as a barrier for Canadian medical students, **Canadian Family Physician**, Accepted.
- 2019 Leduc-Pessah, H., Jensen, S., & Newell, C. (2019), Understanding the potential health consequences of cannabis use, **Clinical and Investigative Medicine**, DOI: <https://doi.org/10.25011/cim.v42i3.33089>.
- 2019 Newell, C., Sosova, I., Sinisac, D., Shoffner, J., Van Hove, J.L., Shearer, J., & Khan, A. (2019), Hybrid gel electrophoresis using skin fibroblasts to aid in diagnosing mitochondrial disease, **Neurology - Genetics**, DOI: <https://doi.org/10.1212/NXG.0000000000000336>.
- 2018 Newell, C., Sabouny, R., Hittel, D. S., Shutt, T. E., Khan, A., & Shearer, J. (2018), Mesenchymal stem cell therapy in mice following prolonged metabolic inflammation, **Frontiers Physiology – Mitochondrial Research**, DOI: 10.3389/fphys.2018.01572.
- 2018 Barton, K. I., Ma, X., Babadagli, E., Zhou, E., Tonial, N., Newell, C., Ishaque, A., Leduc-Pessah, H., Binesh, T., Mirali, S., Cook, E. K., Levin, A., Kumar, S., Steadman, P., & Abraham, J. (2018), Scientific Overview on CSCI-CITAC Annual General Meeting and 2017 Young Investigators' Forum, **Clinical and Investigative Medicine** DOI: <https://doi.org/10.25011/cim.v41i3.31020>
- 2018 Newell, C., Hume, S., Greenway, S.C., Podemski, L., Shearer, J., & Khan, A. (2018), Plasma-derived cell-free mitochondrial DNA: A novel non-invasive methodology to identify mitochondrial DNA haplogroups in humans, **Molecular Genetics and Metabolism** DOI: 10.1016/j.ymgme.2018.10.002.
- 2017 Newell, C., Johnsen, V. L., Yee, N. C., Xu, W. J., Khan, A., Rho, J.M., & Shearer, J. (2017), Ketogenic diet leads to O-GlcNAc modification in the BTBR^{T+^{tf}/j} mouse model of autism, **BBA: Molecular Basis of Disease** DOI:10.1016/j.bbadis.2017.05.013.
- 2017 Newell, C., Ramage, B., Robu, I., Shearer, J., & Khan, A. (2017), Side alternating vibration training in patients with mitochondrial disease: A pilot study, **BMC Physiotherapy and Rehabilitation** DOI:10.1186/s40945-017-0038-4.
- 2016 Newell, C., Shutt, T. E., Ahn, Y., Hittel, D. S., Khan, A., Rho, J.M., & Shearer, J. (2016), Ketogenic diet consumption spurs reductions in liver mitochondrial copy number and induces mitophagy in the BTBR^{T+^{tf}/j} mouse, **Frontiers Physiology – Mitochondrial Research** DOI:10.3389/fphys.2016.00654.
- 2016 Newell, C., Bomhof, M., Reimer, R.A., Hittel, D. S., Rho, J.M., & Shearer, J. (2016), Keto-

- genic diet modifies the gut microbiome in a murine model of autism spectrum disorder, **BMC Molecular Autism** DOI:10.1186/s13229-016-0099-3.
- 2016 Newell, C., Ramage, B., Nettel-Aguirre, A., Robu, I., & Khan, A. (2016), Peak Jump Power Reflects the Degree of Ambulatory Ability in Patients with Mitochondrial and Other Rare Diseases, **Journal of Inherited Metabolic Disease Reports** DOI:10.1007/8904_2016_583.
- 2016 Klein, M.S., Newell, C., Bomhof, M., Reimer, R.A., Hittel, D. S., Rho, J.M., Vogel, H.J. & Shearer, J. (2016), Metabolomic Modelling to Monitor Host Responsiveness to Gut Microbiota Manipulation in the BTBR^{T+tf/j} Mouse, **Journal of Proteome Research** DOI: 10.1021/acs.jproteome.5b01025.
- 2016 Newell, C., Kane, C.L., & Kane, D.A. (2016), Mitochondrial substrate specificity in beetle flight muscle: assessing respiratory oxygen flux in small samples from *Dermestes maculatus* and *Tenebrio molitor*, **Physiological Entomology** DOI:10.1111/phen.12127.
- 2013 Nyamandi, V. Z., Johnsen, V. L., Hughey, C. C., Hittel, D. S., Khan, A., Newell, C., & Shearer, J. (2013), Enhanced stem cell engraftment and modulation of hepatic reactive oxygen species production in diet-induced obesity, **Obesity** DOI: 10.1002/oby.20580.
- 2012 Webster, T. M., Newell, C., Amrhein, J. F., & Newell, K. J. (2012), Cancer Care Ontario Guidelines for radical prostatectomy: Striving for continuous quality improvement in community practice, **Canadian Urological Association Journal** DOI:10.5489/cuaj.10195
- 2010 Newell, C., Barkwell, T., & Newell, K.J. (2010), Is microscopic examination of all cholecystectomy specimens necessary?, **Canadian Journal of Pathology** 2(2): 22-26.

BOOK CHAPTERS

- 2019 Newell, C., Leduc-Pessah, H., Khan, A. & Shearer, J. (2019), Mitochondrial Dysfunction in Chronic Disease, **Routledge Handbook of Sport and Exercise Systems Genetics**.

PATENTS

- 2019 Newell, C., Sosova, I., & Khan, A. (2019), Blue-Clear Native Polyacrylamide Gel Electrophoresis, *Patent pending*.
- 2019 Newell, C., Hume, S., Greenway, S.C., & Khan, A. (2019), Plasma Derived Cell Free Mitochondrial Deoxyribonucleic Acid, **US20190112661**.

THESES

- 2017 Newell, C., Improving the Art of Mitochondrial Diagnostics and Therapeutics, PhD.
- 2012 Newell, C., *Tenebrio molitor* as a Model Organism for Studying Mitochondrial Physiology *In Situ*, BSc Honors.

Presentations

CONFERENCE ORAL PRESENTATIONS

- 2017 Newell, C., Novel Diagnostic and Therapeutic Targets in Mitochondrial Disease: A Developing Story. *ACHRI Mitochondrial Symposium*, Calgary, AB.

- 2016 Newell, C., Impact of ketogenic feeding to O-GlcNAc modify key proteins governing mitochondrial dynamics in the BTBR^{T+tf/j} mouse model of autism. *Global Symposium on Ketogenic Therapies*, Banff, AB.
- 2016 Newell, C., Plasma cell-free mitochondrial DNA: A novel and non-invasive method to detect mutations in mitochondrial DNA. *Garrod Symposium*, Halifax, NS.
- 2016 Newell, C., Introduction to MitoCanada. *Garrod Symposium*, Halifax, NS.
- 2015 Newell, C., Cell free mitochondrial DNA (cf-mtDNA): A novel method to diagnose patients with mitochondrial disease. *ACHRI Gene and Development Symposium*, Banff, AB.
- 2015 Newell, C., Jump Power reflects the degree of disability in Neuromuscular Disease. *CNM-SRS*, Winnipeg, MB.
- 2015 Newell, C., Ketogenic diet consumption elicits gut microbiome remodeling in the BTBR^{T+tf/j} mouse model of autism spectrum disorder. *ACHRI Symposium*, Calgary, AB.
- 2013 Newell, C., Impact of dietary induced fatty liver on mitochondrial oxidative phosphorylation. *Biomedical Basis of Human Performance across the Lifespan*, Calgary, AB.

CONFERENCE POSTER PRESENTATIONS

- 2019 Newell, C., Leduc-Pessah, H., Bell-Graham, L., Rasic, R., & Carter, K., Evaluating and Enhancing the Preparation of Families before Pediatric Surgery. *CITAC AGM*, Banff, AB.
- 2019 Newell, C., Leduc-Pessah, H., Bell-Graham, L., Rasic, R., & Carter, K., Evaluating and Enhancing the Preparation of Families before Pediatric Surgery. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2019 Newell, C., Leduc-Pessah, H., Bell-Graham, L., Rasic, R., & Carter, K., Quality and quantity: Evaluating and enhancing the preparation of families before surgery. *Alberta Children's Hospital Quality Forum*, Calgary, AB.
- 2019 Keough, M., Newell, C., & Sankar, T., Association between advanced degree training and research output in Canadian neurosurgeons. *Alberta Neurosurgery Annual Conference*, Banff, AB.
- 2018 Newell, C., Hume, S., Greenway, S.C., Podemski, L., Shearer, J., & Khan, A., Plasma derived cell-free mitochondrial DNA: A novel and non-invasive method to identify the mitochondrial DNA haplogroup. *CITAC AGM*, Toronto, ON.
- 2018 Newell, C., Hume, S., Greenway, S.C., Podemski, L., Shearer, J., & Khan, A., Plasma derived cell-free mitochondrial DNA: A novel and non-invasive method to identify the mitochondrial DNA haplogroup. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2018 Newell, C., Hume, S., Greenway, S.C., Podemski, L., Shearer, J., & Khan, A., Plasma derived cell-free mitochondrial DNA (cf-mtDNA): A novel and non-invasive method to identify the mitochondrial DNA haplogroup. *American Society of Human Genetics*, San Diego, USA.
- 2017 Newell, C., Sabouny, R., Hittel, D. S., Shutt, T. E., Khan, A., Klein, M. S. & Shearer, J., MSCs shift mitochondrial dynamics and enhance oxidative phosphorylation. *CITAC AGM*, Toronto, ON.
- 2017 Newell, C., Sabouny, R., Hittel, D. S., Shutt, T. E., Khan, A., Klein, M. S. & Shearer, J., Mesenchymal stem cells shift mitochondrial dynamics and enhance oxidative phosphorylation. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2017 Koo, D., Newell, C., Sosova, I., Hume, S., Shutt, T. E., Prokopishyn, N., Ramage, B., Kerr, M. & Khan, A., Advancing the art of diagnosis and management in patients with mito-

- chondrial disease. *MitoCanada National Conference*, Toronto, ON.
- 2017 Newell, C., Bomhof, M., Reimer, R.A., Ahn, Y., Rho, J.M. & Shearer, J., Ketogenic diet consumption elicits gut microbiome remodeling in the BTBR^{T+tf/j} mouse model of autism spectrum disorder. *Owerko Autism Symposium*, Calgary, AB.
- 2017 Newell, C., Johnsen, V., Ahn, Y., Shutt, T. E., Khan, A., Rho, J. M. & Shearer, J., Ketogenic diet consumption spurs altered mitochondrial dynamics in BTBR^{T+tf/j} mice. *Owerko Autism Symposium*, Calgary, AB.
- 2017 Newell, C., Hittel, D. S., Nyamandi, V., Khan, A., & Shearer, J., Xenotransplantation of human mesenchymal stem cells alters host gene expression following prolonged high fat feeding. *Experimental Biology*, Chicago, USA.
- 2017 Newell, C., Johnsen, V., Ahn, Y., Shutt, T. E., Khan, A., Rho, J. M. & Shearer, J., Ketogenic diet consumption spurs altered mitochondrial dynamics in BTBR^{T+tf/j} mice. *ACHRI Symposium*, Calgary, AB.
- 2016 Newell, C., Ramage, B., Robu, I., & Khan, A., Whole body vibration training tolerated in patients with mitochondrial disorders: A randomized controlled pilot study. *CITAC AGM*, Toronto, ON.
- 2016 Newell, C., Johnsen, V., Ahn, Y., Shutt, T. E., Khan, A., Rho, J. M. & Shearer, J., Impact of ketogenic feeding to O-GlcNAc modify proteins governing mitochondrial dynamics in the BTBR^{T+tf/j} mouse model of autism. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2016 Newell, C., Johnsen, V., Ahn, Y., Shutt, T. E., Khan, A., Rho, J. M. & Shearer, J., Impact of ketogenic feeding to O-GlcNAc modify proteins governing mitochondrial dynamics in the BTBR^{T+tf/j} mouse model of autism. *Global Symposium on Ketogenic Therapies*, Banff, AB.
- 2016 Newell, C., Sinisac, D., Snyder, F., Hume, S., Sparkes, R., Khan, A., & Sosova, I., A novel, hybrid method of blue and clear native polyacrylamide gel electrophoresis (BCN-PAGE): a minimally invasive method to detect electron transport chain abnormalities in cultured skin fibroblasts in patients with mitochondrial disease. *International Congress of Human Genetics*, Kyoto, JPN.
- 2016 Newell, C., Hume, S., Greenway, S. C., & Khan, A., Plasma cell-free mitochondrial DNA: A novel and non-invasive method to detect mutations in mitochondrial DNA. *International Congress of Human Genetics*, Kyoto, JPN.
- 2016 Newell, C., Hume, S., Greenway, S. C., & Khan, A., Plasma cell-free mitochondrial DNA: A novel and non-invasive method to detect mutations in mitochondrial DNA. *ACHRI Symposium*, Calgary, AB.
- 2015 Newell, C., Johnsen, V., Ahn, Y., Shutt, T. E., Khan, A., Rho, J. M. & Shearer, J., Ketogenic diet consumption spurs altered mitochondrial dynamics in BTBR^{T+tf/j} mice. *CITAC AGM*, Toronto, ON.
- 2015 Newell, C., Ramage, B., Nettel-Aguirre, A., Robu, I. & Khan, A., Peak jump power reflects the degree of ambulatory ability in patients with mitochondrial and other degenerative diseases. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2015 Newell, C., Ramage, B., Nettel-Aguirre, A., Robu, I., Ahmed, F. & Khan, A., Jump Power reflects the degree of disability in Neuromuscular Disease. *United Mitochondrial Disease Foundation*, Washington DC, USA.
- 2015 Klein, M.S., Newell, C., Reimer, R.A., Bomhof, M., Rho, J.M., Ahn, Y., Vogel, H.J. & Shearer, J., Modeling microbiome-metabolome interactions in a murine model of autism. *ACHRI Symposium*, Calgary, AB.

- 2015 Johnsen, V.L., Newell, C., Xu, W., Ahn, Y., Rho, J.M. & Shearer, J., Impact of a ketogenic diet on O-GlcNAc modification in the BTBR^{T+tf/j} mouse model of autism. *ACHRI Symposium*, Calgary, AB.
- 2015 Newell, C., Ramage, B., Nettel-Aguirre, A., Robu, I., Ahmed, F. & Khan, A., Jump Power reflects the degree of disability in Neuromuscular Disease. *CNMSRS*, Winnipeg, MB.
- 2014 Xu, W., Newell, C., Johnsen, V.L., Rho, J.M., Ahn, Y., & Shearer, J., Mitochondrial dynamics in the brain of an autistic mouse model (BTBR^{T+tf/j}) in response to a ketogenic diet. *University of Calgary Biomedical Engineering Symposium*, Banff, AB.
- 2014 Newell, C., Johnsen, V.L., Rho, J.M., Ahn, Y., Khan, A., & Shearer, J., Mitochondrial dynamics in the liver of an autistic mouse model (BTBR^{T+tf/j}) in response to a ketogenic diet. *Leaders in Medicine Research Symposium*, Calgary, AB.
- 2014 Newell, C., Ramage, B., Robu, I., & Khan, A., Jump Power reflects the degree of disability in Neuromuscular Disease. *Alberta Children's Hospital Gene and Development Symposium*, Banff, AB.
- 2014 Newell, C., Hughey, C. C., Phil, C., Hittel, D. S., & Shearer, J., Intravenous mesenchymal stem cell administration spurs endogenous hepatic mitochondrial gene expression in the diet-induced obese mouse. *Experimental Biology*, San Diego, USA.
- 2013 Newell, C., Hughey, C. C., Nyamandi, V. Z., Johnsen, V. L., & Shearer, J., Impact of dietary induced fatty liver on mitochondrial oxidative phosphorylation. *Experimental Biology*, Boston, USA.
- 2012 Kane, D.A., & Newell, C., Mitochondrial substrate specificity in *Tenebrio molitor* fibrillar flight muscle. *Canadian Society for Exercise Physiology*, Regina, SK.

GUEST LECTURES

- 2017 Newell, C., Taking a Patient Clinical History, *KNES 775: Advanced Exercise Physiology*, Calgary, AB.
- 2016 Newell, C., The Winding Career Trajectory of an MD/PhD Student, *Kinesiology Student's Society*, Calgary, AB.
- 2016 Newell, C., Examining Mitochondrial Disease, *KNES 775: Advanced Exercise Physiology*, Calgary, AB.
- 2016 Newell, C., Exercise in Children with Chronic Conditions and Physical Disabilities, *KNES 355 - Human Growth and Development*, Calgary, AB.
- 2015 Newell, C., Exercise in Children with Chronic Conditions and Physical Disabilities, *KNES 355 - Human Growth and Development*, Calgary, AB.

SEMINARS

- 2019 Newell, C., Cranial polyneuropathies, *Neurology Residency Rounds*, Calgary, AB.
- 2018 Newell, C., Postsurgical prescriptions for opioid naive patients and association with overdose and misuse, *Leaders in Medicine Journal Club*, Calgary, AB.
- 2018 Newell, C., Figuring it out - A Grad Student Story, *Leaders in Medicine - RIP*, Calgary, AB.
- 2017 Newell, C., Advancing the Art of Mitochondrial Diagnostics and Therapeutics, *PhD Defense - Public Lecture*, Calgary, AB.
- 2017 Newell, C., Mitochondrial Dynamics and Neurological Diseases, *Mitochondrial Journal Club*,

Calgary, AB.

- 2017 Newell, C., Mitochondrial Dynamics Impacts Stem Cell Identity and Fate Decisions by Regulating a Nuclear Transcriptional Program, *Nutrition, Metabolism and Genetics Journal Club*, Calgary, AB.
- 2016 Newell, C., Autism-like behaviours and germline transmission in transgenic monkeys over-expressing MeCP2, *Nutrition, Metabolism and Genetics Journal Club*, Calgary, AB.
- 2015 Newell, C., Examining Novel Diagnostic Techniques in Clinical Research, *Alberta Children's Hospital Metabolics Rounds*, Calgary, AB.
- 2014 Newell, C., Metabolome and Metaboproteome Remodeling in Nuclear Reprogramming, *Nutrition, Metabolism and Genetics Journal Club*, Calgary, AB.
- 2013 Newell, C., Impact of Human MSC Administration on Dietary Induced Mitochondrial Dysfunction, *Nutrition, Metabolism and Genetics Journal Club*, Calgary, AB.

Teaching

- 2016 Sessional Instructor in Kinesiology, KNES 259/260, University of Calgary
- 2014 Teaching Assistant in Biomedical Engineering, BMEN 519, University of Calgary
- 2013 Sessional Instructor in Kinesiology, KNES 259/260, University of Calgary
- 2012-2014 Teaching Assistant in Kinesiology, KNES 259/260, University of Calgary

Volunteering

- 2017-2019 Student Run Clinic - Student Clinician, University of Calgary
- 2013-2020 National Research Committee, MitoCanada Foundation
- 2013-2020 National Fundraising Committee, MitoCanada Foundation
- 2013-2020 Community Outreach Presenter, MitoCanada Foundation
- 2013-2014 Therapeutic Arts Program, Alberta Children's Hospital
- 2013-2014 Thrive Cancer Centre, University of Calgary

Extracurricular activities

- 2018-2019 Surgical Interest Group - Co-Director and VP Finance, University of Calgary
- 2018 National MD Student Secretary, Clinician Investigator Trainee Association of Canada
- 2018 Leaders in Medicine - Mentorship Committee Coordinator, University of Calgary
- 2018 MD Class of 2020 Scotch Club - President, University of Calgary
- 2017-2020 Leaders in Medicine - Class of 2020 Student Representative, University of Calgary
- 2017-2019 Student Run Clinic - Quality Improvement Committee, University of Calgary
- 2016-2017 Graduate Students' Association - Finance Standing Committee, University of Calgary
- 2016-2017 Leaders in Medicine - Professional Development Coordinator, University of Calgary
- 2015-2016 Graduate Students' Association - Health & Dental Plan Committee, University of Calgary
- 2015-2016 Leaders in Medicine - Visiting Speakers Coordinator, University of Calgary
- 2015 ACHRI - Symposium Judge, University of Calgary
- 2015 Graduate Students' Association - Awards Committee Chair, University of Calgary
- 2014 Leaders in Medicine - Research Symposium Organizer, University of Calgary

2013-2014 Kinesiology Grad Students' Association - Communications Officer, University of Calgary
2013-2014 Canadian Obesity Network - Chapter President, University of Calgary

Media

2016 Newell, C., ACHRI - Science in the Cinema (Screening of Lorenzo's Oil), *Globe Cinema*, Calgary, AB
2016 Newell, C., Calgary researchers encouraged by their study of low-carb, high-fat diet in animal models of autism, *University of Calgary - UToday Article*
2014 Newell, C., Grad student awarded inaugural Mitochondrial Disease PhD Scholarship, *University of Calgary - UToday Article*

Professional development

2020 Member, Professional Association of Resident Physicians of Alberta
2020 Member, College of Physicians and Surgeons of Alberta
2020 Reviewer, Current Genomics
2019 Reviewer, Journal of Clinical Laboratory Analysis
2019 Reviewer, Physiological Reports
2019 Member, Department of Anesthesiology - Search and Selection Committee
2019 Member, Canadian Neurological Society
2018 Invited Member, Canadian Mitochondrial Network - Mitochondrial Biogenesis Pillar
2018 Reviewer, JoVE
2018 Certification, Executive Leadership Coaching Course - C-Quill Development Program
2017-2020 Member, Canadian Medical Association
2017-2020 Member, Alberta Medical Association
2017-2018 Member, ACHRI Director - Search and Selection Committee
2017 Reviewer, PLOS ONE
2017 Certification, Basic Life Support, Heart and Stroke Foundation
2016, 2017 Reviewer, Scientific Reports
2016 Reviewer, Molecular Brain
2016 Certification, Recordati Rare Diseases Academy - Metabolic Disease Course, Paris, FRA
2015-2020 Member, CITAC
2015-2019 Member, American Society of Human Genetics
2015 Certification, Instructional Skills Workshop, Calgary, AB
2014 Certification, Canada GCP, Calgary, AB
2014 Certification, TCPS 2: CORE, Calgary, AB
2013 Certification, Institutional Animal User Training Program - Mice and Rats, Calgary, AB
2013 Certification, Biosafety Training, Calgary, AB
2013 Certification, WHMIS, Calgary, AB

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