

DMNB QUARTERLY REPORT

Q4: January – March 2021

RESEARCH

General Update

- In February 2021, the New Brunswick Health Research Foundation (NBHRF) awarded Dr. Thomas Pulinilkunnil with the title of Researcher of the Month for his achievements and contributions in health research and innovation.
- Dr. Keith Brunt began two new appointments during this period: President/Board of Directors for the Heart & Stroke Foundation of New Brunswick and Associate Editor of the *American Journal of Physiology – Heart and Circulatory Physiology*.
- This quarter, Dr. Petra Kienesberger welcomed a new graduate student, Any Jose. Any joined Dr. Kienesberger's lab in January. She is an MSc student in the Department of Biochemistry and Molecular Biology and comes from India.
- Two of Dr. Daniel Dutton's trainees were also successful in securing funding during this period. Devin Manning won the Dalhousie Medicine New Brunswick Graduate Studentship valued at \$17,500 and Ismael Foroughi won the New Brunswick Health Research Foundation Maritime SPOR SUPPORT Unit (MSSU) Fellowship valued at \$100,000.

Metrics

Funding Awarded to Principal Investigators (PIs)

- Dr. Keith Brunt received two grants through the New Brunswick Innovation Foundation (NBIF) for his "Caring for Care-Providers: Developing an Online Health Screening Tool to Investigate the Mental Health Status and Resiliencies of Frontline Community Pharmacy Workers in a Shifting Scope-of-Practice; Intensified by the COVID-19 Pandemic" project: the Research Professional Initiative valued at \$45,000 and the Emerging Projects valued at \$25,000.
- Dr. Brunt also received the \$40,000 Chesley Family Research Award for his project in tandem with Dr. Ansar Hassan, "Achieving patient centred functional recovery following cardiac surgery." This award is given by Dalhousie University through the Chesley Family Endowment and the New Brunswick Health Research Foundation.
- Dr. Thomas Pulinilkunnil received a \$9,209 Chesley Family Research Award for his project entitled "Examining the utility of novel dietary bioactive peptides and polyphenols for cardioprotection during obesity and diabetes."



- Dr. Tony Reiman also received a grant for a project in which he is a co-investigator: “The Terry Fox Research Institute (TRFI) Atlantic Cancer Consortium Pilot Project for the Marathon of Hope Cancer Centres Network.” This funding began January 1, 2021 and will continue for two years. The total amount of funding is \$1.5 million from the TRFI and roughly \$1.5 million from several other matching sources including the NBHRF and NBIF for a total of about \$3 million for the entire project, which is spread around the participating institutions.

Principal Investigator (PI) Peer-Reviewed Publications

- **Atkinson, Paul** – 11 publications
 - Abelev I, Fraser J, Canales D D, et al. (March 11, 2021) Medical and Undergraduate Student Perceptions on Scribing in an Emergency Department. *Cureus* 13(3): e13836. doi:10.7759/cureus.13836
 - Olszynski P A, Bryce R, Hussain Q, et al. (March 02, 2021) A Novel Anatomic Landmark to Target the Left Ventricle During Chest Compressions in Cardiac Arrest. *Cureus* 13(3): e13652. doi:10.7759/cureus.13652
 - Olszynski PA, Bryce R, Hussain Q, Dunn S, Blondeau B, **Atkinson P**, Woods R. Use of a Simple Ultrasound Device to Identify the Optimal Area of Compression for Out-of-Hospital Cardiac Arrest. *Cureus*. 2021 Jan 19;13(1):e12785. doi: 10.7759/cureus.12785. PMID: 33489641; PMCID: PMC7815272.
 - **Atkinson, P.**, Innes, G. Patient care accountability frameworks: the key to success for our healthcare system. *Can J Emerg Med* (2021). <https://doi.org/10.1007/s43678-020-00059-7>
 - Gottlieb, M., Olszynski, P. & **Atkinson, P.** Just the facts: point-of-care ultrasound for airway management. *Can J Emerg Med* (2021). <https://doi.org/10.1007/s43678-020-00075-7>
 - Crocker CE, Carter AJE, Emsley JG, Magee K, **Atkinson P** and Tibbo PG (2021) When Cannabis Use Goes Wrong: Mental Health Side Effects of Cannabis Use That Present to Emergency Services. *Front. Psychiatry* 12:640222. doi: 10.3389/fpsy.2021.640222
 - Dahn, T., Henneberry, R. & **Atkinson, P.** Look inside as well as out: an unexpected cause of shortness of breath: right ventricular mass on point of care ultrasound. *Can J Emerg Med* **23**, 252–253 (2021). <https://doi.org/10.1007/s43678-020-00071-x>
 - Atkinson, P. Just three things.... *Can J Emerg Med* **23**, 10–11 (2021). <https://doi.org/10.1007/s43678-020-00027-1>
 - Clouston, R., **Atkinson, P.**, Canales, D.D. *et al.* Emergency department occupancy is useful as a simple real-time measure of crowding. *Can J Emerg Med* (2021). <https://doi.org/10.1007/s43678-021-00098-8>
 - Hohl CM, Canadian COVID-19 Emergency Department Rapid Response Network investigators et al;. Development of the Canadian COVID-19 Emergency Department Rapid Response Network population-based registry: a methodology study. *CMAJ Open*. 2021 Mar 17;9(1): E261-E270. doi: 10.9778/cmajo.20200290. PMID: 33731427.
 - Weagle K, Henneberry R J, **Atkinson P** (March 31, 2021) Pneumothorax Following Acupuncture. *Cureus* 13(3): e14207. doi:10.7759/cureus.14207
- **Atkinson, Paul & Dutton, Dan** – 1 publication
 - Cole, V., **Atkinson, P.**, Hanlon, R. *et al.* CO-aVoID: coronavirus outbreak affecting variability of presentations to a local emergency department. *Can J Emerg Med* **23**, 232–236 (2021). <https://doi.org/10.1007/s43678-020-00036-0>

- **Brunt, Keith** – 2 publications
 - Lindsey ML, Kassiri Z, Hansell Keehan K, **Brunt KR**, Carter JR, Kirk JA, LeBlanc AJ, Kleinbongard P, Ripplinger CM. We are the Change We Seek. *Am J Physiol Heart Circ Physiol*. 2021 Mar 12. doi: 10.1152/ajpheart.00090.2021. Epub ahead of print. PMID: 33710925.
 - Nelson VL, **Brunt KR**. Cutting the molecular brakes to achieve cardiac regeneration. *Cell Death Differ*. 2021 Mar;28(3):1126-1129. doi: 10.1038/s41418-020-00681-z. Epub 2021 Jan 28. Erratum in: *Cell Death Differ*. 2021 Feb 19;: PMID: 33510425.

- **Pulinilkunnil, Thomas** – 1 publication
 - Klionsky DJ, Abdelmohsen K, Abe A, **Pulinilkunnil T**, *et al*. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*. 2016;12(1):1-222. doi: 10.1080/15548627.2015.1100356. Erratum in: *Autophagy*. 2016;12(2):443. Selliez, Iban [corrected to Seilliez, Iban]. PMID: 26799652; PMCID: PMC4835977.

- **Pulinilkunnil, Thomas & Kienesberger, Petra** – 1 publication
 - D'Souza K, Mercer A, Mawhinney H, **Pulinilkunnil T**, Udenigwe CC, **Kienesberger PC**. Whey Peptides Stimulate Differentiation and Lipid Metabolism in Adipocytes and Ameliorate Lipotoxicity-Induced Insulin Resistance in Muscle Cells. *Nutrients*. 2020;12(2):425. Published 2020 Feb 6. doi:10.3390/nu12020425

- **Reiman, Tony** – 3 publications
 - Venner CP, LeBlanc R, Sandhu I, White D, Belch AR, Reece DE, Chen C, Dolan S, Lalancette M, Louzada M, Kew A, McCurdy A, Monteith B, **Reiman T**, McDonald G, Sherry M, Gul E, Chen BE, Hay AE. Weekly Carfilzomib plus Cyclophosphamide and Dexamethasone in the Treatment of Relapsed/Refractory Multiple Myeloma: Final results from the MCRN-003/MYX.1 single arm phase II trial. *Am J Hematol*. 2021 Mar 1. doi: 10.1002/ajh.26147. Epub ahead of print. PMID: 33650179.
 - Jimenez-Zepeda VH, Venner C, McCurdy A, Masih-Khan E, Atenafu EG, Sebag M, Stakiw J, Song K, LeBlanc R, **Reiman T**, Louzada M, Kotb R, Gul E, Reece D. Real-world outcomes with bortezomib-containing regimens and lenalidomide plus dexamethasone for the treatment of transplant-ineligible multiple myeloma: a multi-institutional report from the Canadian Myeloma Research Group database. *Br J Haematol*. 2021 Feb 9. doi: 10.1111/bjh.17350. Epub ahead of print. PMID: 33559897.
 - Cherniawsky HM, Kukreti V, Reece D, Masih-Khan E, McCurdy A, Jimenez-Zepeda VH, Sebag M, Song K, White D, Stakiw J, LeBlanc R, **Reiman A**, Louzada M, Aslam M, Kotb R, Gul E, Atenafu E, Venner CP. The impact of lenalidomide maintenance on second-line chemotherapy in transplant eligible patients with multiple myeloma. *Eur J Haematol*. 2021 Feb 4. doi: 10.1111/ejh.13596. Epub ahead of print. PMID: 33539037.

Presentations by Principal Investigators (PIs)

- Dr. Dan Dutton gave an online presentation entitled “CPHA-CJPH Journal Club: With great inequality comes great responsibility: the role of government spending on population health in the presence of changing income distributions” on January 27,

2021.

- Dr. Keith Brunt gave an invited, virtual presentation for the Institute of Cardiovascular Sciences in Winnipeg, Manitoba, University of Manitoba entitled “Cardiopulmonary implications of heme metabolism for therapeutics or companion diagnostics” on March 17, 2021.

Dalhousie Faculty of Medicine New Brunswick
Researcher Profile

**Dr. Ansar Hassan, Assistant Professor, Dalhousie
Medicine New Brunswick**
Cardiovascular Surgeon, New Brunswick Heart Centre

When Dr. Ansar Hassan was first given the opportunity to pursue research as a resident in cardiac surgery, he was immediately drawn to the field of clinical outcomes research and social epidemiology. The areas of research that continue to intrigue him are those that ultimately allow him to positively affect the care of his patients, like: population health, access to care, determinants of health, and – more specifically – socioeconomic and geographic disparities and their impact on health outcomes.

“I am always most excited by the simplest of projects,” says Dr. Hassan. “The ones that provide results that are easy to interpret and recommendations that are easy to implement.”

Recently, Dr. Hassan and his team looked at timing of surgery (morning versus afternoon) and its effect on clinical outcomes. While the outcomes did not differ, ICU and hospital length of stay did, suggesting that afternoon cases were treated differently than morning cases. He is looking forward to coming up with solutions to mitigate some of these differences.

With the help of his research assistants, Dr. Kenneth D’Souza and Jeffrey MacLeod, Dr. Hassan is currently working on grant applications that look at the prevalence of cardiac amyloidosis in patients with aortic stenosis in New Brunswick and what the impact is of this concurrent disease process on short- and long-term clinical outcomes. With new medications on the market that can reduce the ongoing deposition of cardiac amyloid, opportunities exist to improve the health of these patients.

When it comes to a research project on the horizon that Dr. Hassan is particularly excited about, he is in the process of developing an “innovation index” in cardiac surgery that will examine how “innovative” or “conservative” one’s practice is. “Jeffrey MacLeod, our statistician, has been instrumental in coming up with neat ways to derive this index,” shares Dr. Hassan.



One of Dr. Hassan's proudest moments of professional success was being named the New Brunswick Health Researcher of the Year in 2015 by the New Brunswick Health Research Foundation (NBHRF). "[It] was truly a proud moment for me and a recognition for the hard work that I had put into make cardiovascular outcomes research in New Brunswick viable," says Dr. Hassan. Between being supported by colleagues, funding agencies, and administrations, Dr. Hassan has always felt research in New Brunswick to have "always been so easy, so to speak. I have never felt that my research activities were being hindered in any way."

In his personal time, Dr. Hassan harbours a love of sports, whether it be following his favourite teams or playing favourites like squash or golf. "I wish I had more time to spend playing squash and golf, but I'm appreciative of what time I do get," he notes.

He also enjoys traveling with his family. One notable vacation was a recent trip to Florida (pre-COVID) where Dr. Hassan and his family spent a bit of time in the theme parks, but more time just having fun with each other. "You know it was fun when your kids ask you if they can go back when COVID is done," he says. When the pandemic is officially over, the first thing on Dr. Hassan's to-do list is travel to either New York City, North Carolina, Florida, or perhaps all three.

When asked about what he is most looking forward to this year, Dr. Hassan shares that "2021 is going to be an exciting year for me personally and professionally... and that is all I can say for now."

Dalhousie Faculty of Medicine New Brunswick Researchers

1. Dr. Wendy Stewart

FUNDING

SSHRC Partnership Engage Grant. Prescribing Art: An Innovative Partnership to Positively Impact Individuals Diagnosed with Depression. \$24,992.

PUBLICATIONS

B Kek, W A Stewart, A Adisesh, Dramatic returns! Creating a return to work Medical Readers' Theatre, Occupational Medicine, 2021;, kqab037, <https://doi.org/10.1093/occmed/kqab037>

PRESENTATIONS

1. Stewart WA. Music, the Brain and Wellness. Mini Medical School, Dalhousie University. January 20th, 2021.
2. Stewart, WA. Coping and Creating Space: Maintaining Energy and Wellness in Challenging Situations. Sistema NB Professional Development Day. February 6th, 2021.
3. Stewart WA. Large Group Learning. Invited interactive presentation as part of Teach the Teacher Virtual Workshop, February 16th, 2021.
4. Stewart, WA. Fostering a Humanistic Culture of Care; Understanding Interprofessional Teams as Complex Adaptive Systems. Workshop, CCME, April 2021
5. Wilson, K, Stewart, WA. Assessment of Professionalism: What works, what does not. Oral presentation, CCME, April 2021.

2. Dr. Duncan Webster, Division of Infectious Diseases, SJRH

FUNDING

\$9,209 Chesley Family Research Award for “Optimizing Tuberculosis Screening for Newcomers in Southern New Brunswick: A Pilot Study.”

PUBLICATIONS

1. Caring for people who inject drugs when they are admitted to hospital. Thomas D. Brothers, John Fraser, Duncan Webster. *CMAJ* Mar 2021, 193 (12) E423-E424; DOI: 10.1503/cmaj.202124
2. The Epidemiology of COVID-19 in Canada in 2020: The Pre-Vaccine Era. D Waldner, R Harrison, J Johnstone, L Saxinger, D Webster, W Sligl. *Royal Society of Canada*. 2021, February 4. <https://rsc-src.ca/en/research-and-reports/covid-19-policy-briefing/epidemiology/epidemiology-covid-19-in-canada-in-2020>

3. Dr. Colleen O’Connell

FUNDING

Dr. O’Connell and team at SCCR with community partners Ability NB: Received from Praxis Spinal Cord Institute: \$67,000 for Spinal Cord Injury Implementation and Evaluation Quality Care (SCI-IEQC) Consortium.

New Brunswick Health Research Foundation Summer Student Grant for Jeremy Slayter, DMNB with Dr. O’Connell – **for Patient Reported Outcome Measures in Spinal Muscular Atrophy (6900)** and Roche Pharmaceuticals \$14,000 (same project).

PUBLICATIONS

Accepted for publication to Journal of Neuromuscular Disease: A Canadian Adult Spinal Muscular Atrophy Outcome Measures Toolkit: Results of a National Consensus using a Modified Delphi Method.

Authors: Jeremy Slayter, Victoria Hodgkinson, Josh Lounsberry, Bernard Brais, Kristine Chapman, Angela Genge, Aaron Izenberg, Wendy Johnston, Hanns Lochmüller, Erin O’Ferrall, Gerald Pfeffer, Stephanie Plamondon, Xavier Rodrigue, Kerri Schellenberg, Christen Shoesmith, Christine Stables, Monique Taillon, Jodi Warman-Chardon, Lawrence Korngut, Colleen O’Connell

4. Canada East Spine Centre

AWARDS

Presentation by Med 2 RIM Student Samantha Rogers awarded best paper by a medical student/resident or fellow.

Rogers, S., Manson, N., Bigney, E., Vandewint, A., Richardson, E., El-Mughayyar, D., McPhee, R., Abraham, E. Impact of undergoing thoracolumbar spine surgery on patients mental health. Podium Presentation at: 20th Annual Canadian Spine Surgery meeting (virtual), February 2021.

PUBLICATIONS

1. Oliver G S Ayling, MD, Tamir Ailon, MD, John T Street, MD, Nicolas Dea, MD, Greg McIntosh, MSc, Edward Abraham, MD, W Bradley Jacobs, MD, Alex Soroceanu, MD, Michael G Johnson, MD, Jerome Paquet, MD, Parham Rasoulinejad, MD, Phillipe Phan, MD, Albert Yee, MD, Sean Christie, MD, Andrew Nataraj, MD, R Andrew Glennie, MD, Hamilton Hall, MD, Neil Manson, MD, Y Raja Rampersaud, MD, Kenneth Thomas, MD, Charles G Fisher, MD. The Effect of Perioperative Adverse Events on Long-Term Patient-Reported Outcomes After Lumbar Spine Surgery, *Neurosurgery*, Volume 88, Issue 2, February 2021, Pages 420–427, <https://doi.org/10.1093/neuros/nyaa427>
2. Evaniew N, Swamy G, Jacobs WB, Bouchard J., Cho, R., Manson, N., Rampersaud, R., Paquet, J., Bailey, C., Johnson, M., Attabib, N., Fisher, C., McIntosh, G., & Thomas, K. Lumbar Fusion Surgery for Patients With Back Pain and Degenerative Disc Disease: An Observational Study From the Canadian Spine Outcomes and Research Network. *Global Spine Journal*. January 2021. doi:10.1177/2192568220985470
3. Alnaghmoosh N, Urquhart J, Raj, R., Abraham, E., Jacobs, B., Phan, P., Johnson, M., Paquet, R., Manson, N., Hall, Hamilton, Rasouline P., Bailey, C. Back Dominant Pain Has Equal Outcomes to Radicular Dominant Pain Following Posterior Lumbar Fusion in Adult Isthmic Spondylolisthesis: A CSORN Study. *Global Spine Journal*. January 2021.
4. Najmedden Attabib, Dilnur Kurban, Christiana L. Cheng, Carly S. Rivers, Christopher S. Bailey, Sean Christie, Karen Ethans, Heather Flett, Julio C. Furlan, Eve C. Tsai, and Colleen O'Connell. *Journal of Neurotrauma*. Feb 2021. 322-329. <http://doi.org/10.1089/neu.2020.7303>

5. Dalhousie Emergency Medicine Research Team

AWARDS

A big congratulations goes out to our very own resident researcher, Dr. Rob Dunfield!

Dr. Dunfield is a second-year resident in the Family Medicine-Emergency Medicine Program here in Saint John. He is one of seven residents recognized nationally for their excellent research abstract submissions to the annual CAEP conference. Dr. Dunfield's research project is a secondary study from the SHOC-ED group and is entitled: "Does IVC Ultrasound independently predict fluid status in spontaneously breathing, undifferentiated hypotensive patients? SHOC-IVC".

PUBLICATIONS

1. Abelev I, Fraser J, Canales D D, et al. (March 11, 2021) Medical and Undergraduate Student Perceptions on Scribing in an Emergency Department. *Cureus* 13(3): e13836. doi:10.7759/cureus.13836
2. Olszynski P A, Bryce R, Hussain Q, et al. (March 02, 2021) A Novel Anatomic Landmark to Target the Left Ventricle During Chest Compressions in Cardiac Arrest. *Cureus* 13(3): e13652. doi:10.7759/cureus.13652

3. Olszynski PA, Bryce R, Hussain Q, Dunn S, Blondeau B, Atkinson P, Woods R. Use of a Simple Ultrasound Device to Identify the Optimal Area of Compression for Out-of-Hospital Cardiac Arrest. *Cureus*. 2021 Jan 19;13(1):e12785. doi: 10.7759/cureus.12785. PMID: 33489641; PMCID: PMC7815272.
4. Atkinson, P., Innes, G. Patient care accountability frameworks: the key to success for our healthcare system. *Can J Emerg Med* (2021). <https://doi.org/10.1007/s43678-020-00059-7>
5. Gottlieb, M., Olszynski, P. & Atkinson, P. Just the facts: point-of-care ultrasound for airway management. *Can J Emerg Med* (2021). <https://doi.org/10.1007/s43678-020-00075-7>
6. Crocker CE, Carter AJE, Emsley JG, Magee K, Atkinson P and Tibbo PG (2021) When Cannabis Use Goes Wrong: Mental Health Side Effects of Cannabis Use That Present to Emergency Services. *Front. Psychiatry* 12:640222. doi: 10.3389/fpsy.2021.640222
7. Dahn, T., Henneberry, R. & Atkinson, P. Look inside as well as out: an unexpected cause of shortness of breath: right ventricular mass on point of care ultrasound. *Can J Emerg Med* **23**, 252–253 (2021). <https://doi.org/10.1007/s43678-020-00071-x>
8. Cole, V., Atkinson, P., Hanlon, R. *et al.* CO-aVOID: coronavirus outbreak affecting variability of presentations to a local emergency department. *Can J Emerg Med* **23**, 232–236 (2021). <https://doi.org/10.1007/s43678-020-00036-0>
9. Atkinson, P. Just three things.... *Can J Emerg Med* **23**, 10–11 (2021). <https://doi.org/10.1007/s43678-020-00027-1>

6. Dr. David Lewis

PUBLICATIONS

Wong MKY, Olszynski P, Cheung WJ, Pageau P, Lewis D, Kwan C, Woo MY; CAEP Emergency Ultrasound Committee. Position statement: minimum archiving requirements for emergency medicine point-of-care ultrasound—a modified Delphi-derived national consensus. *CJEM*. 2021 Mar 4. doi: 10.1007/s43678-021-00109-8. Epub ahead of print. Erratum in: *CJEM*. 2021 Mar 29;: PMID: 33661519.

7. Department of Surgery

PUBLICATIONS

COVID Surg Collaborative, journal *Anaesthesia*. Dr. Brian R. Johnston (Assistant Professor, Department of Surgery, Dalhousie University, SJRH, Chief, Division of Thoracic Surgery) and Dr. Crispin Russell (Thoracic Surgeon, Dalhousie University) participated in study as collaborating authors and Lori Hebert provided data collection support. Some international clinical research with local input from faculty of medicine members, Department of Surgery.

8. Dr. Jennifer Shea, Assistant Professor, Dept of Pathology

PUBLICATIONS

Allison A Venner, Lori A Beach, Jennifer L Shea, Michael J Knauer, Yun Huang, Angela W S Fung, James Dalton, Mathieu Provencal, Julie L V Shaw. Quality assurance practices for point of care testing programs: Recommendations by the Canadian Society of Clinical Chemists point

of care testing interest group. Clin Biochem 2021 Feb;88:11-17. doi: 10.1016/j.clinbiochem.2020.11.008. Published: February 2021. Link: <https://pubmed.ncbi.nlm.nih.gov/33264650/>

9. Dr. Tsetan Dolkar, Assistant Professor

Team: Ather Naseemuddin, Ali Sherazi, Margot Barnell

FUNDING

\$21,582.00 Funding will be provided by Dalhousie University (50%) through the Chesley Family Endowment and the New Brunswick Health Research Foundation (NBHRF; 50%) for my project on "Comparison of Magee Equations™ and NHS Predict to Oncotype DX Testing."

10. NB Social Pediatrics

Team: Sarah Campbell, Kate Flood, Katie Bonner

NEWS

We have launched our Non-profit and have partnered with BCAPI to deliver care in the community to Pediatric patients. We have two MBA students coming to work with us this summer (largely for the non-profit) and two SEED students to work on the research program.

PRESENTATIONS

1. "Innovating Pediatric Behavioural Assessments and Care Pathways in Saint John, NB" for UBC Centre for Health Services and Policy Research Annual conference (virtual) presented by Naythrah Thevathasan on March 8th, 2021
2. "Understanding the Impact of the Novel Coronavirus Pandemic on the Mental Health of Residents of New Brunswick, Canada" for the Dalhousie University Medical Sciences Symposium (virtual) presented by Lauryn Anderson on April 9th, 2021