

## DMNB QUARTERLY REPORT (RESEARCH)

**Q2: July – September 2020**

### RESEARCH

#### General Update

On 1 July 2020, Dr. Paul Atkinson became Dalhousie Medicine New Brunswick's new Assistant Dean of Research, succeeding Dr. Anthony Reiman who inaugurated the position and helped build the now thriving research enterprise at DMNB over the past 11 years.

"I'm looking forward to an opportunity – for myself, for Dalhousie Medicine New Brunswick, and for researchers in New Brunswick – to consolidate the great work that has been done so far and look to new horizons, new opportunities, and new directions," says Dr. Atkinson of his new role. "I think Dalhousie Medicine New Brunswick is still a very young institution and we're at an early stage in our growth in research, so it's an exciting time to be able to come in and hopefully shape something that will last into the future."

The DMNB Assistant Dean of Research Office is currently in the process of establishing a DMNB Research Council to help support research under the four pillars of 1) Biomedical Science and Laboratory Research; 2) Health Services Research; 3) Clinical Research; and 4) Medical Education Research.

In other exciting news this quarter, a new postdoctoral fellow, Dr. Sundaram Pakkiriswami, joined Dr. Thomas Pulinilkunnil's Laboratory on October 1, 2020.

Additionally, Dr. Dan Dutton was featured on CBC regional radio and in a written story in July related to his NBIF project: "**Researcher wants to know if New Brunswickers are slipping back into pre-COVID ways.**"

#### Metrics

##### Funding Awarded to Principal Investigators (PIs)

In the July to September 2020 quarter, Dr. Petra Kienesberger received a \$10,164 allocation from Canada Research Continuity Emergency Fund (CRCEF), which was awarded through UNB.

Dr. Dan Dutton received \$47,500 through the NBIF COVID Research Fund as the principal applicant on a project entitled "Assessing the impact of COVID-19 on alcohol consumption and related harms among New Brunswick adults."

Dr. Paul Atkinson brought in \$9,000 from the SJRH Foundation for COVID research as well as an impressive \$2.5 million CIHR award for the National Emergency Medicine COVID Registry in which he is the New Brunswick lead Co-Principal Investigator.

#### Principal Investigator (PI) Peer-Reviewed Publications

Between July and September 2020, the entire DMNB research team saw their work published:

1. Biswas D, Tozer K, Dao KT, Perez LJ, Mercer A, Brown A, Hossain I, Yip AM, Aguiar C, Motawea H, Brunt KR, Shea J, Legare JF, Hassan A, **Kienesberger PC, Pulinilkunnil T.** Adverse Outcomes in Obese Cardiac Surgery Patients Correlates With Altered Branched-Chain Amino Acid Catabolism in Adipose Tissue and Heart. *Front Endocrinol (Lausanne)*. 2020 Aug 7;11:534. doi: 10.3389/fendo.2020.00534. eCollection 2020. PMID: 32903728 Free PMC article.
2. Biswas D, Dao KT, Mercer A, Cowie AM, Duffley L, El Hiani Y, **Kienesberger PC, Pulinilkunnil T.J.** Branched-chain ketoacid overload inhibits insulin action in the muscle. *Biol Chem*. 2020 Sep 2:jbc.RA120.013121. doi: 10.1074/jbc.RA120.013121. Online ahead of print. PMID: 32878988 Free article.
3. Editorial: McLaren and **Dutton.** The social determinants of pandemic impact: an opportunity to rethink what we mean by “public health spending”. *CJPH*, 111, 451-453 (2020).
4. Liu, T., **Dutton, D.J.** With great inequality comes great responsibility: the role of government spending on population health in the presence of changing income distributions. *Can J Public Health* (2020). <https://doi.org/10.17269/s41997-020-00407-1>
5. Milaney et al. (**Dutton**). Recognizing and Responding to Women Experiencing Homelessness with Gendered and Trauma-Informed Care. *BMC Public Health*, **20**, 397 (2020).
6. Legere SA, Haidle ID, **Brunt KR**, Legare JF, Marshall JS† Increased mast cell density is associated with decreased fibrosis in human atrial tissue. (*Journal of Molecular Cellular Cardiology*, Sept 2020, *in press*)
7. Foster AJ, Marrow J, Allwood MA, **Brunt KR**, Simpson JA† Applications of a novel radio-telemetry method for the measurement of intrathoracic pressures and physiological rhythm in freely behaving mice. (*Journal of Applied Physiology* Sept 2020, *in press.*)
8. **Atkinson P**, Taylor L, Milne J, et al. Does Point of Care Ultrasound Improve Resuscitation Markers in Undifferentiated Hypotension? An International Randomized Controlled Trial From The Sonography in Hypotension and Cardiac Arrest in the Emergency Department (SHoC-ED) Series. (August 20, 2020) *Cureus* 12(8): e9899. doi:10.7759/cureus.9899
9. Kovacs G, Sowers N, Campbell S, French J, **Atkinson P.** Just the Facts: Airway management during the coronavirus disease 2019 (COVID-19) pandemic. *CJEM*. 2020

Jul;22(4):440-444. doi: 10.1017/cem.2020.353. PMID: 32223782; PMCID: PMC7203167.

10. **Atkinson P**, French J, Lang E, McColl T, Mazurik L. Just the Facts: Protecting frontline clinicians during the COVID-19 pandemic. *CJEM*. 2020;22(4):435-439. doi:10.1017/cem.2020.359
11. Henneberry R, Dahn T, **Atkinson P**. Just the Facts: Point-of-care ultrasound in the management of shoulder dislocations. *CJEM*. 2020 May;22(3):287-290. doi: 10.1017/cem.2020.14. PMID: 32308180.
12. Mclsaac S, Wax RS, Long B, et al. (**Atkinson**). Just the Facts: Protected code blue - Cardiopulmonary resuscitation in the emergency department during the coronavirus disease 2019 pandemic. *CJEM*. 2020;22(4):431-434. doi:10.1017/cem.2020.379
13. Sibley AK, **Atkinson P**, Shayne P. Just the Facts: Hypertension in the emergency department. *CJEM*. 2020 Jul;22(4):456-458. doi: 10.1017/cem.2020.22. PMID: 32378505.

#### Presentations by Principal Investigators (PIs):

Dr. Dan Dutton, along with Dr. Dean Yergens, presented at the Pathways to Professions 2020 NB-IRDT summer training initiative in July.

In August, Dr. Thomas Pulinilkunnil and Dr. Petra Kienesberger along with members of their laboratory presented at the FASEB Virtual Science Research Conference on “Branched chain keto acids influence muscle insulin signaling and dysregulated branched chain amino acid catabolism is a predictor of cardiometabolic outcomes.”

Finally, in September, Dr. Kienesberger gave a virtual presentation to Orebro University in Sweden on “Nutrient sensing and signaling in metabolic and cardiovascular disease” for their kick-off meeting.

#### Dalhousie Faculty of Medicine New Brunswick Researchers

##### **Dr. Erin Bigney**

*The Canada East Spine Centre*

Surgeons: Orthopaedic Surgery: Dr. Edward Abraham, Dr. Neil Manson, Dr. Chris Small  
Neurosurgery: Dr. Najmedden Attabib, Dr. George Kolyvas, Dr. Andre Le Roux

Research Team: Erin Bigney MA Director of Research  
Eden Richardson BA Research Manager  
Dana El-Mughayyar BSc Research Coordinator  
Amanda Vandewint Bsc Research Coordinator

Peer-Reviewed Publications from June - September 2020:

Manson, N., Hubbe, U., Pereira, P., Lam, K., Fuster, S., & Senker, W. (2020). Are the Outcomes of Minimally Invasive Transforaminal/Posterior Lumbar Fusion Influenced by the Patient's Age or BMI? *Clinical Spine Surgery: A Spine Publication, Publish Ahead of Print*. doi:10.1097/bsd.0000000000001019

Manson N., El-Mughayyar D., Bigney E., Richardson E., Abraham E. Instrumentation Removal Following Minimally Invasive Posterior Percutaneous Pedicle Screw-Rod Stabilization (PercStab) of Thoracolumbar Fractures is not always required. *Hindawi Advances in Orthopedics, 2020,1-7*. doi:10.1155/2020/7949216

Hebert, J., Abraham, E., Wedderkopp, N., Bigney, E., Richardson, E., Darling, M., Hall, H., Fisher, C., Rampersaud, Y.R., Thomas, K., Jacobs, B., Johnson, M., Paquet, J., Attabib, N., Jarzem, P., Wai, E., Rasoulinejad, P., Ahn, H., Nataraj, A., Stratton, A., Manson, N. Preoperative Factors Predict Postoperative Trajectories of Pain and Disability Following Surgery for Degenerative Lumbar Spinal Stenosis, *SPINE: June 11, 2020 - Volume Publish Ahead of Print - Issue* -doi: 10.1097/BRS.0000000000003587

Stratton, A., Wai, E., Kingwell, S., Phan, P., Roffey, D., Koussy, M. E., Christie S., Jarzem P., Rasoulinejad P., Casha S., Paquet J., Johnson M., Abraham E., Hall H., McIntosh G., Thomas K., Rampersaud R., Manson, N., Fisher, C. (2020). Opioid use trends in patients undergoing elective thoracic and lumbar spine surgery. *Canadian Journal of Surgery, 63*(3). doi:10.1503/cjs.018218

Inglis, T., Banaszek, D., Rivers, C. S., Kurban, D., Evaniew, N., Fallah, N., Waheed, Z., Christie, S., Fox, R., Mac Thiong, J.-M., Ethans, K., Ho, C., Linassi, A. G., Ahn, H., Attabib, N., Bailey, C. S., Fehlings, M. G., Fournay, D. R., Paquet, J., ... Kwon, B. K. (2020). In-Hospital Mortality for the Elderly with Acute Traumatic Spinal Cord Injury. *Journal of Neurotrauma, 11*. <https://doi.org/10.1089/neu.2019.6912>

Attabib, N., Kurban, D., Cheng, C. L., Rivers, C. S., Bailey, C., Christie, S., Ethans, K., Flett, H., Furlan, J. C., Tsai, E., & O'Connell, C. (2020). Factors associated with recovery in motor strength, walking ability, and bowel and bladder function after traumatic cauda equina injury. *Journal of Neurotrauma, 0*. <https://doi.org/10.1089/neu.2020.7303>

July 2020. Looking Beyond Patient Averages: Steps towards Personalized Care. Research Team of the Month of July 2020. As recognized by New Brunswick Health Research Foundation. Dr. Manson, Dr. Abraham, Dr. Hebert, Erin Bigney, Eden Richardson, Amanada Vandewint, Dana El-Mughayyar, Mariah Darling, Dr. Niels Wedderkopp, Hamilton Hall, Charles Fisher, Raja Rampersaud, Kenneth Thomas, Bradley Jacobs, Michael Johnson, Jerome Paquet, Najmedden Attabib, Peter Jarzem, Eugene Wai, Parham Rasoulinejad, Henry Ahn, Andrew Nataraj and Alexandra Stratton

## Dr. Amanda Caissie

- CPAC \$607, 000 over 3 years (2020-2022): co-PI (NB) with Marianne Arab (NS)
  - Electronic capture of patient reported outcomes as means of expanding distress screening (ESAS-R and CPC) for oncology patients undergoing radiotherapy.
    - Funding will support the electronic infrastructure/platforms for PRO data capture/analysis (Saint John NB, Halifax & Sydney NS) as well as a project manager positions in both NB (contributing to the Survivorship program under development) and NS
- *Guidance on the Collection and Use of Patient Reported Outcomes for Canadian Radiation Treatment Programs*, 2019 version 1, CPQR scheduled released Sept 2020 (under community review) <http://www.cpqr.ca/programs/patient-reported-outcomes/>
- **Guidance on the Use of Common Nomenclature and Data Sets in Canadian Radiation Treatment Programs** 2019 version 1, CPQR scheduled released Sept 2020 (under community review) <http://www.cpqr.ca/programs/treatment-planning/>

## Dr. Marc Nicholson

1. I co-presented a workshop at last year's North American IPE conference (Collaborating Across Borders VII) on delivering IPE activities via distance learning. This is a Dalhousie IPE collaboration, with DMNB, Nursing, Social Work, Faculty of Health, and Nursing faculty from Yarmouth. We are in the process of submitting a manuscript to the Journal of Interprofessional Education & Practice entitled: "IPE via Online Education: Pedagogical Pathways Spanning the Distance". We just received word that it has been accepted, with minor revisions suggested.
2. We are having a virtual first year IPE event next week involving 250 students from NBCC, UNBSJ, and DMNB. We have REB approval and will do a pre/post survey on attitudes towards IPE.

We had an interesting research project lined up for an IPE SIM activity that would have happened in March, but it was cancelled. We were going to look at pre-SIM anxiety using a 'test anxiety inventory' (TAI) measure. We have REB approval from this past winter, so we plan to still do the study, hopefully, next winter.

## Dr. Yu Chen

Pediatric data of the usefulness of estimated average glucose (eAG) in glycemic control and cardiovascular risk reduction. Wang D, **Chen Y**. Data Brief. 2020 Jul 5;31:105993. doi: 10.1016/j.dib.2020.105993. eCollection 2020 Aug. PMID: 32685637 **Free PMC article.**

Interchangeability of Electrolyte and Metabolite Testing on Blood Gas and Core Laboratory Analyzers. Tang J, Watts G, **Chen Y.**Clin Lab. 2020 Jul 1;66(7). doi: 10.7754/Clin.Lab.2020.191255.PMID: 32658419

Usefulness of estimated average glucose (eAG) in glycemic control and cardiovascular risk reduction. Wang D, **Chen Y.**Clin Biochem. 2020 Oct;84:45-50. doi: 10.1016/j.clinbiochem.2020.06.009. Epub 2020 Jun 14.PMID: 32553578

AACC Guidance Document on Management of Point-of-Care Testing. Nichols JH, Alter D, **Chen Y**, Isbell TS, Jacobs E, Moore N, Shajani-Yi Z.J Appl Lab Med. 2020 Jul 1;5(4):762-787. doi: 10.1093/jalm/jfaa059.PMID: 32496555 No abstract available.

## **Dr. Shelley Doucet**

### June to Sept

- Funding (\$) awarded to PIs : \$121,130
- PI peer-reviewed publications: 2
- Presentations (#s): 14

**Doucet, S.**, Curran, J., Breneol, S., Luke, A., Dionne, E., Azar, R., Reid, A. E., McKibbon, S., Horsman, A., & Binns, K. (2020). Programmes to support transitions in care for children and youth with complex care needs and their families: A scoping review protocol. *BMJ Open*. 10(6), 1-6. <http://dx.doi.org/10.1136/bmjopen-2019-033978>

Danish, A., Chouinard, M. C., Audrey-Bassler, K., Burge, F., **Doucet, S.**, Ramsden, V. R., Bisson, M., Cassidy, M., Condran, B., Lambert, M., Penney, C., Sabourin, V., Warren, M., & Hudon, C. (2020). Protocol for a mixed-method analysis of implementation of case management in primary care for frequent users of healthcare services with chronic diseases and complex care needs. *BMJ Open*. 10(6), 1-11. <http://dx.doi.org/10.1136/bmjopen-2020-038241>

## **Dr. Sarah Gander**

- **What paediatricians can do to support children and youth during the COVID-19 pandemic.** (2020) Practice Point. [www.cps.ca](http://www.cps.ca)
- **Disrupting the cycle of adverse childhood experiences by supporting mothers with addiction.** Sarah Gander, Sarah Campbell, Kathryn Flood. *Paediatrics & Child Health*, Volume 25, Issue Supplement 2, August 2020, Page e49, <https://doi.org/10.1093/pch/pxaa068.118>

## Dr. Kavish Chandra

Our research team study was presented by Dr. Mark McGraw (resident in Emergency Medicine and Family Medicine): "Assessing the impact of advanced care paramedics in Saint John with out of hospital cardiac arrests."

Authors: Dr. Mark McGraw, Jacqueline Fraser RNNB, Dr. Tushar Pishu, Dr. Joanna Middleton, Dr. Jay Mekwan, Dr. Paul Atkinson and Dr. Kavish Chandra.

Presentation in June at the Saint John Family Medicine research day was awarded top resident presentation for Part 1 of the East Coast EM research series.

My study was titled: "Emergency Physician Attitudes on Opioid Use Disorder and Barriers to Prescribing Buprenorphine/naloxone: A Qualitative Study."

## Dr. David Bewick

1. Cardiac Rehabilitation During the COVID-19 Era: Guidance on Implementing Virtual Care. Nathaniel Moulson MD<sup>a</sup> David Bewick MD et al. Canadian Journal of Cardiology Volume 36, Issue 8, August 2020, Pages 1317-1321.
2. Guiding Cardiac Care During the COVID-19 Pandemic: How Ethics Shapes Our Health System Response. Alice Virani PhD<sup>a</sup> Gurmeet Singh MD<sup>b</sup> David Bewick MD<sup>c</sup> Chi-Ming Chow MD<sup>d</sup> Brian Clarke MD<sup>e</sup> Simone Cowan MD<sup>f</sup> Christopher B. Fordyce MD<sup>f</sup> Anne Fournier MD<sup>g</sup> Kenneth Gin MD<sup>f</sup> Anil Gupta MD<sup>h</sup> Sean Hardiman MHA<sup>i</sup> Simon Jackson MD<sup>j</sup> Yoan Lamarche MD<sup>k</sup> Benny Lau MD<sup>f</sup> Jean-François Légaré MD<sup>c</sup> Howard Leong-Poi MD<sup>d</sup> Samer Mansour MD<sup>l</sup> Ariane Marelli MD<sup>m</sup>... Andrew D. Krahn MD<sup>f</sup> Canadian Journal of Cardiology Volume 36, Issue 8, August 2020, Pages 1313-1316.
3. Use of Renin-Angiotensin System Blockers During the COVID-19 Pandemic: Early Guidance and Evolving Evidence. Ricky D. Turgeon, BSc(Pharm), PharmD, Shelley Zieroth, MD, David Bewick, MD, Sean Virani, MD, David A. Wood, MD Andrew Krahn, MD Canadian Journal of Cardiology Volume 36, Issue 8, August 2020, Pages 1180-1182.

National Webinars and published statements in the Canadian Journal of Cardiology 2020

Clinical Cardiology Day

Atlantic Cardiovascular Medicine Update for Family Medicine, Emergency Physicians and allied health care

"Assessment of "low risk chest pain" in the emergency

## Dr. Gwyneth de Vries

"Sustainable and scalable foot-at-risk clinics: Safety by design with regular visiting orthopaedic

input” presented at Canadian Orthopaedic Association Annual Meeting presentation (podium), June 2020.

Also presented at eHealthNB 13th Wound and Skintastic Conference (invited speaker), September 2020. Presented (in part) at Canadian Academy of Sport and Exercise Medicine Para and Adaptive Sport Webinar (invited speaker), July 2020. “Toolkit and management of wounds, para and adaptive athletes.”

In other news, this summer two projects where I am principal investigator (in collaboration with NB-IRDT) have received official University of New Brunswick REB approval: “Choosing Wisely Imaging for Lower Back Pain” and “Geographic variation in the indications and outcomes of lower extremity amputations across New Brunswick.”

The two studies above reflect clinical dataset links between Health Regions and NB-IRDT.

## **Dr. Ansar Hassan**

Haft JW, Atluri P, Ailawadi G, Engelman DT, Grant MC, Hassan A, Legare JF, Whitman GJR, Arora RC, Society of Thoracic Surgeons COVID-19 Task Force and the Workforce for Adult Cardiac and Vascular Surgery. Adult cardiac surgery during the COVID-19 pandemic: A tiered patient triage guidance statement. *J Thorac Cardiovasc Surg.* 2020; 160(2): 452–5.

Sarkar S, Legere S, Haidl I, Marshall J, MacLeod JB, Aguiar C, Lutchmedial S, Hassan A, Brunt KR, Kienesberger P, Pulinilkunnil T, Légaré JF. Serum GDF15, a promising biomarker in obese patients undergoing heart surgery. *Front Cardiovasc Med.* 2020; doi: 10.3389/fcvm.2020.00103.eCollection 2020.

Hassan A, Arora RC, Lothar SA, Adams C, Bouchard D, Cook R, Gunning D, Lamarche Y, Malas T, Moon M, Ouzounian M, Rao V, Rubens F, Tremblay P, Whitlock R, Moss E, Légaré JF; of the Canadian Society of Cardiac Surgeons. Ramping up the delivery of cardiac surgery during the COVID-19 pandemic: A guidance statement from the Canadian Society of Cardiac Surgeons. *Can J Cardiol.* 2020; 36(7) 1139–43.

Engelman DT, Lothar S, George I, Funk DJ, Ailawadi G, Atluri P, Grant MC, Haft JW, Hassan A, Legare JF, Whitman GJR, Arora RC; Society of Thoracic Surgeons COVID-19 Task Force. Adult cardiac surgery and the COVID-19 pandemic: Aggressive infection mitigation strategies are necessary in the operating room and surgical recovery. *Ann Thorac Surg.* 2020; 110(2): 707–11.

Hassan A, Arora AC, Adams C, Bouchard D, Cook R, Gunning D, Lamarche Y, Malas T, Moon M, Ouzounian M, Rao V, Rubens F, Tremblay P, Whitlock R, Moss E, Légaré JF, Canadian Society of Cardiac Surgeons. Cardiac surgery in Canada during the COVID-19 Pandemic: A Guidance Statement from the Canadian Society of Cardiac Surgeons. *Can J Cardiol.* 2020; doi: 10.1016/j.cjca.2020.04.001.

Haft JW, Atluri P, Alawadi G, Engelman D, Grant MC, Hassan A, Legare JF, Whitman G, Arora RC, on behalf of the Society of Thoracic Surgeons COVID-19 Taskforce and the Workforce for Adult Cardiac and Vascular Surgery. Adult cardiac surgery during the COVID-19 Pandemic: A Tiered Patient Triage Guidance Statement. *Ann Thorac Surg.* 2020; doi: 10.1016.j.athoracsur.2020.04.003.