

## DMNB QUARTERLY REPORT (RESEARCH)

**Q4: January – March 2020**

### RESEARCH

#### General Update

Although all research activities in the DMNB building were suspended on 18 March 2020 due to the COVID-19 pandemic, the January to March quarter was still a characteristically busy one full of exciting news for the DMNB Research Team.

For instance, one of Dr. Thomas Pulinilkunnil's students, Neil Mueller, beat out several other applicants to receive the **Faye Sobey Undergraduate Research Award** – the top research award in the Dalhousie Faculty of Science – for the summer of 2020. Established as an endowment to provide deserving students the opportunity to work in a research lab, the Faye Sobey Award is valued slightly higher than the coveted NSERC USRA award.

In additional good news, DMNB's former Research Chair of Occupational Medicine, Dr. Anil Adishes, was the co-supervisor on a paper by first author Smriti Singh (DMNB Class of 2020), which was **published in the peer-reviewed open access scientific journal *PLOS One*** in February 2020. The paper, entitled "An examination of the association between lifetime history of prostate and pancreatic cancer diagnosis and occupation in a population sample of Canadians," garnered positive media attention from *The Chronicle Herald* with an article on Singh's research published on 7 February 2020.

#### Metrics

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

This quarter, our team of PIs brought in a whopping **cumulative of \$7,076,428** with projects in which they are either the principal or co-applicant.

Dr. Tony Reiman, along with the Canadian Cancer Rehabilitation (CanRehab) Team that includes Dr. Jennifer Jones (the nominated PI), Dr. Kristin Campbell, Dr. David Langelier, and Dr. Jonathan Greenland, secured a five-year Canadian Cancer Society/Canadian Institutes of Health Research (CCS/CIHR) Survivorship Team grant **valued at \$2,498,065** for "Improving the systematic identification management, and treatment of the adverse effects of cancer."

Together with Dr. Alli Murugesan, Dr. Reiman also received the **\$50,000** New Brunswick Innovation Foundation Lab-to-Market Commercialization Grant 2020 for "Developing Novel Anti-Blood Cancer Drug Candidate(s) through Evaluation of Nature-Inspired Caffeic Acid Phenethyl Ester (CAPE) Analogs."



Dr. Keith Brunt received the **\$40,000** Chesley Family Research Award and won the New Brunswick Innovation Foundation (NBIF) Emerging Projects competition for a **monetary prize of \$25,000** for “Developing a unique surface-enhanced Raman spectroscopy theranostic tool using a machine learning approach in clinical management of multiple myeloma.”

Dr. Thomas Pulinilkunnil also won a Chesley Family Research Award **valued at \$35,000** for his project entitled “Examining biochemical and functional complications of a-1,2 mannosyltransferase (Alg9) deficiency using dermal fibroblast and CRISPR targeted Zebrafish model of defective glycosylation.”

Dr. Petra Kienesberger secured a **\$6,900 summer studentship** from the New Brunswick Health Research Foundation (NBHRF).

Last but not least, Dr. Dan Dutton had a supremely lucrative quarter with a CIHR Catalyst Grant **valued at \$69,640** for the project entitled “The role of guaranteed income in healthy aging: Canadian public pensions and their association with physical health, mental health, and health risks.” He also secured **\$228,615** from CIHR/AGE-WELL for the project: “Advancing Policies and Practices in Technology and Aging – 2020/2021.”

And those were simply for projects in which Dr. Dutton was the principal applicant. Between January and March 2020, he received funding for three projects that fall under the Healthy Seniors Pilot Project (HSPP) in which he is the co-investigator:

1. “The Band-Frail Study: A Provincial Intervention to Outweigh Diabetes and Frailty in New Brunswick” **valued at \$469,645.**
2. “The New Brunswick Brain Health Initiative: Preventing Alzheimer’s by Lessening Modifiable Risk (NB-PALM)” **valued at \$2,697,913.**
3. “Proof of Concept: Stroke Navigation in New Brunswick” **valued at \$489,000.**

Another project in which Dr. Dutton is the co-investigator that received funding was “The Maritime Community Health and Housing Initiative: Investigating the Impact of Public Housing Interventions on Mental Health in Low-Income Households in New Brunswick” for **\$466,650.**

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

Between January and March 2020, the DMNB research team saw five peer-reviewed articles published between them:

1. Cost Savings of Housing First in a Non-Experimental Setting. Jadidzadeh, Falvo, **Dutton.** Canadian Public Policy, 2020.
2. “Health in all policies” perspectives highlight the trade-offs that governments make when buying population health. **Dutton.** 111, pages 4–7, 2020. Invited Editorial.
3. Immunohistochemical validation study of 15-gene biomarker panel predictive of benefit from adjuvant chemotherapy in resected non-small-cell lung cancer: analysis of JBR.10. Grieve S, Ding K, Moore J, Finniss M, Ray A, Lees M, Hossain F, Murugesan A, Agar J,

Acar C, Taylor J, Shepherd FA, **Reiman** T. ESMO Open. 2020 Mar;5(2). pii: e000679. doi: 10.1136/esmooopen-2020-000679.

4. Whey Peptides Stimulate Differentiation and Lipid Metabolism in Adipocytes and Ameliorate Lipotoxicity-Induced Insulin Resistance in Muscle Cells. D'Souza K, Mercer A, Mawhinney H, **Pulinilkunnil** T, Udenigwe CC, **Kienesberger** PC. Nutrients. 2020 Feb 6;12(2). pii: E425. doi: 10.3390/nu12020425.
5. A lysosome independent role for TFEB in activating DNA repair and inhibiting apoptosis in breast cancer cells. Slade L, Biswas D, Ihionu F, El Hiani Y, **Kienesberger** PC, **Pulinilkunnil** T. Biochem J. 2020 Jan 17;477(1):137-160. doi: 10.1042/BCJ20190596.