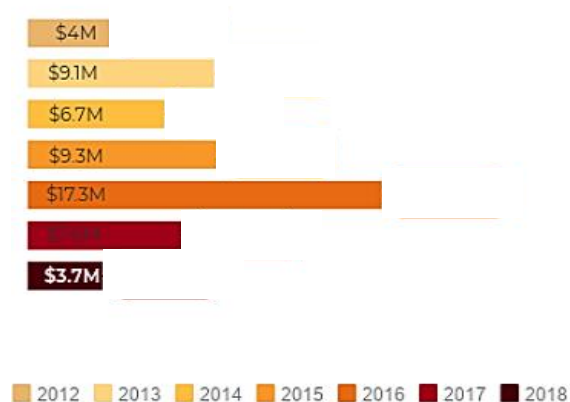


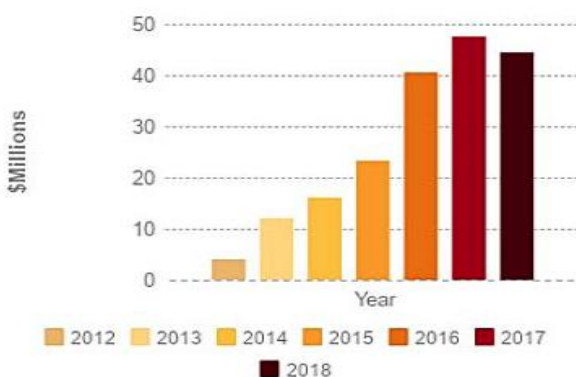
## DREAM THEME ANNUAL REPORT – 2018 EXECUTIVE SUMMARY

**Theme Mission:** To improve the wellness of children and their families living with type 2 diabetes by making clinically relevant discoveries (that improve their lives). Using an integrated interdisciplinary approach we will translate discoveries into practice and policy.

### New Funding 2018



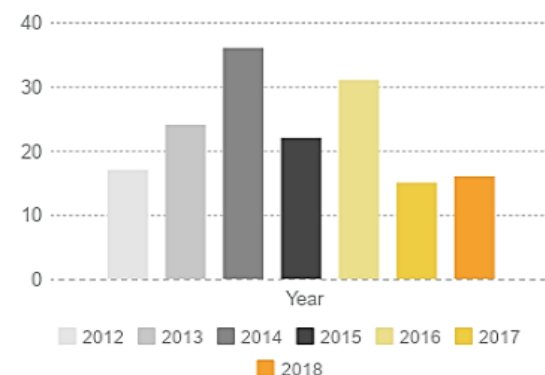
### Annual funding (new and continuing)



### Average ROI per year (2013-2018): 5.2

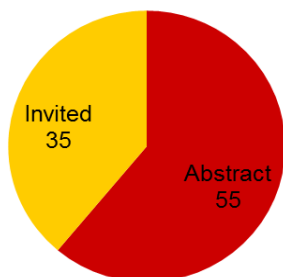


### Number of Grants (2012-2018)

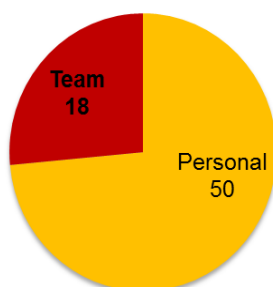


### Productivity

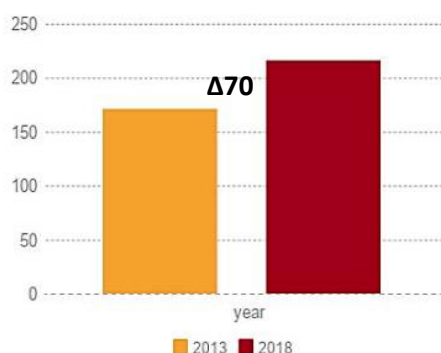
#### Presentations Total: 90



#### Publications Total: 68



### H-index scores



## **Team Highlights 2018:**

- We launched our first DREAM trainee professional workshop/symposium
- DREAM received the Diabetes Canada Best Banting Award
- Dr Heather Dean contributed to the publication of the book “Diagnosing the Legacy”
- Drs Dart and Wicklow have introduced an Elder into the clinic during education sessions
- Completed the CHRIM 5 year review and got some valuable feedback
- Participated in a PATHing exercise with the DREAM stakeholder to help us continue to move forward and align ourselves more strategically with our stakeholders

## **Highlights from the External 5 Year Review:**

- Keep the focus on type 2 diabetes in youth. Do not expand into other “sub-themes”
- Current strength: Clinical cohorts and patient engagement
- Invest into the “Interventions” sub theme
- Restructure the trainee program to attract more trainees to CHRIM
- Outline and submit a CFI application to replace outdated or aging equipment
- See **Appendix A** for the SWOT analysis

## **Highlights and Priorities from the Stakeholder PATH Exercise:**

- Support cultural sensitivity training for the whole research team
- Support better integration and on-going working groups with the stakeholders
- Co-development of symposium
- Co-development of a genetics meeting and formation of a sub-committee
- Co-development of Terms of Reference and Code of Conduct
- Allocation of DREAM funds and restructuring the executive support to the stakeholders as decision makers on the team.
- See **Appendix B** for our timeline for progress with our stakeholders

## **Elder in Clinic:**

- Drs Dart and Wicklow have a monthly renal and type 2 diabetes clinic. In February 2018 the decided to pilot the idea of having an elder be present and facilitate some of the education sessions.
- Elder Sherry Copenance has attended a total of 7 clinics to date.
- The plan moving forward is to sit down with the youth that have been attending these clinic visits in order to get their perspective on the changes since introducing Sherry to the group.
- This idea stemmed from conversations with the iCARE participant advisory group where they informed the group that they didn't like the current model of care.
- DREAM has set aside \$6,000 in the 2019 budget to continue to support this process and the exploration of how to improve care for the children we work with.

## **2018 Annual Report**

### **1. Name of Theme/Cluster/Research Group**

DREAM – Diabetes Research Envisioned and Accomplished in Manitoba

### **2. Group Leader and Members**

#### **Co-Leads:**

Vern Dolinsky PhD - Pharmacology & Therapeutics

Jon McGavock PhD - Pediatrics and Child Health

#### **Members:**

Meghan Azad PhD - Pediatrics and Child Health

Allison Dart MD - Pediatric Nephrologist

Jim Davie PhD - Biochemistry and Medical Genetics

Christine Doucette PhD - Physiology

Joe Gordon PhD - Faculty of Nursing / Human Anatomy and Cell Science

Grant Hatch PhD - Pharmacology & Therapeutics, Biochemistry & Medical Genetics

Elizabeth Sellers MD - Pediatric Endocrinologist

Geert t'Jong MD - Academic Pediatrician and Clinical Pharmacologist ?

Brandy Wicklow MD - Pediatric Endocrinologist



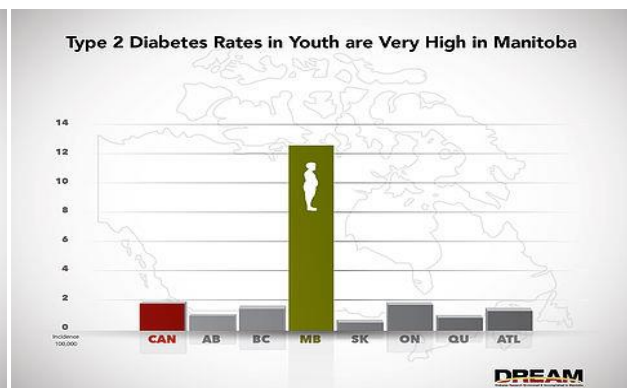
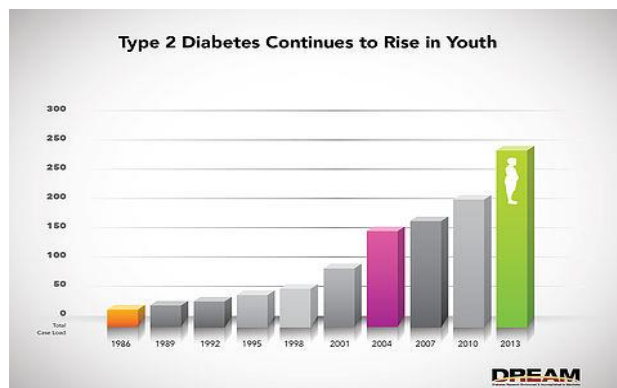
Photo from 2016 DREAM symposium

### 3. History of the Theme:

The DREAM theme emerged from the vision of the inaugural director of CHRIM (at that time MICH), Dr. Malcolm Ogborn. The research institute had a very successful theme focused on the Biology of Breathing (BoB) led by Dr. Andrew Halayko. The board wanted to build on this success and create a research theme focused on obesity and type 2 diabetes in youth. At the time, Dr Heather Dean and Dr Elizabeth Sellers were performing clinical research on the large patient population of children with type 2 diabetes that were being seen at the Children's Hospital. Several key observations made by these pioneering clinician scientists paved the way for the primary research questions that would guide the theme.

#### These included:

1. The observation that rates of type 2 diabetes in children were ~12-fold higher in Manitoba than other provinces.
2. Children with type 2 diabetes went on to develop serious complications early in adulthood including amputations, kidney disease and premature death.
3. Youth with type 2 diabetes were commonly exposed to diabetes throughout their entire fetal development.



After months of consultations with key individuals and several team meetings, a meeting took place at Dr. Heather Dean's farm to determine the core pillars of research for the theme. The clinicians felt that the theme should be patient oriented and focus on questions that would be relevant to the patients and families suffering from type 2 diabetes in Manitoba:

1. Why are we developing type 2 diabetes at a younger age with each new generation?
2. What can we do to prevent my grandchildren from developing type 2 diabetes?
3. Why do we (my child) develop kidney disease and other complications so quickly after being diagnosed with type 2 diabetes?

Since our inception in 2012, the team has secured over \$50 million in external funding, published over 200 scientific articles, including a special series on type 2 diabetes and secured three large team grants to expand our work. Thanks to two major SPOR grants received in 2016, we are gaining a national reputation for excellence in the area of Patient-Oriented Research Indigenous children and their families. The discoveries made to date have helped improve care and our understanding of the pediatric type 2 diabetes and its complications.



2018 marked the fifth year of the Theme which included an external review of our progress over the past 5 years. Two international leaders in the field, who serve as directors of large diabetes research programs spent 2 days with our team, interviewing theme members, reviewing reports and discussing their observations with CHRIM executive leadership. Our team also committed to restructuring our relationship with Indigenous stakeholders that is aligned with the Truth and Reconciliation Commission's calls to action. This was achieved through a strategic planning activity known as a PATH (Planning Alternative Pathways for Tomorrow), which we conducted with the Indigenous stakeholders on the team. Both of these provided great insight into some of the accomplishments we have made as a team since our inception, but also helped to shape the direction we want to go moving forward.

One of the changes to emerge from these activities was a new mission statement. DREAM's new mission is: "To improve the wellness of children and their families living with type 2 diabetes by making clinically relevant discoveries (that improve their lives). Using an integrated interdisciplinary approach we will translate discoveries into practice and policy."

#### **Highlights from the External 5 Year Review:**

- Keep the focus on type 2 diabetes in youth. Do not expand into other "sub-themes"
- Current strength: Clinical cohorts and patient engagement
- Invest into the "Interventions" sub theme
- Restructure the trainee program to attract more trainees to CHRIM
- Outline and submit a CFI application to replace outdated or aging equipment
- See **Appendix A** for the SWOT analysis

#### **Highlights and Priorities from the Stakeholder PATH Exercise:**

- Support cultural sensitivity training for the whole research team
- Support better integration and on-going working groups with the stakeholders
- Co-development of symposium
- Co-development of a genetics meeting and formation of a sub-committee
- Co-development of Terms of Reference and Code of Conduct
- Allocation of DREAM funds and restructuring the executive support to the stakeholders as decision makers on the team.
- See **Appendix B**

In addition to these two important activities, 2018 marked the first national award given to our theme. Diabetes Canada recognized the DREAM theme as a national leader in research and community engagement by awarding our team the 2018 Frederick Banting Award. This award is given out nationally, after provincial organizations nominate members of the diabetes community that are making outstanding contributions to people living with diabetes and their families. (See **Appendix C**)

## 4. Major Achievements

### Individual successes



## TEAM UPDATE 2018



### **Trainee successes**

Linda Lam, BSc. Medical Student

- Award for Outstanding Clinical Research Project

Gabriel Brawerman, MSc candidate

- First author of a review on therapies for gestational diabetes published in Pharmacological Research (2018)
- Gabriel gave his first oral presentation at a national-level meeting of DOHaD Canada (2018) in Banff, Alberta
- Gold Award – Graduate Student (MSc) Poster Competition at CHRD (2018)

Mateusz Tomczyk, MSc candidate

- Honourable mention – trainee poster presentations, DREAM Symposium, 2018

Brittany Moyce, PhD candidate

- First author of a literature review about beta-cell adaptations during pregnancy, which was published in the International Journal of Molecular Sciences (2018)
- Honourable Mention Poster Award at MBSHR Poster Competition, 2018
- Presented data at several national level meetings including the Canadian National Perinatal Research Meeting (2018)

Stephanie Kereliuk, PhD candidate

- Contributed sections to a literature reviews published in Critical Reviews in Clinical Laboratory Science (2018). She co-authored a manuscript of her original research published in Cell Death and Disease (2018)
- Basic Cardiovascular Sciences Travel Award for the American Heart Association Meeting in Chicago, IL in 2018
- Silver Medal Poster Award at CIHR CSHRF Poster Competition, 2018
- Health Sciences Graduate Student's Association Poster Award at MBSHR Poster Competition, 2018
- Presented data at several national and international level meetings including the Canadian National Perinatal Research Meeting (2017, 2018), and the American Heart Association Meeting (2018)

Taylor Morriveau, PhD candidate

- Vanier Graduate Scholarship, 2018
- Contributed sections to a literature reviews published in Critical Reviews in Clinical Laboratory Science (2018)
- Presented her data at two national level meetings: the Canadian National Perinatal Research Meeting (2018) and the national Indigenous Health Conference (2018). She also completed the Aurora Study Tour Harvard Symposium (2018), meeting Indigenous health researchers from around the world
- Gold award – trainee poster presentations, DREAM Symposium, 2018
- Gold award – trainee poster presentations, Child Health Research Day, 2018

- Dean of Medicine Poster Award at MBSHR Poster Competition, 2018

Shirin Moossavi, PhD (Medical Microbiology)

- Featured on University of Manitoba Graduate Students' Association website

Prasoon Agarwal, Post-doctoral fellow

- First author of a literature review on his primary research topic that is published in Critical Reviews in Clinical Laboratory Science (2018)

Charlotte Talbot, Post-doctoral fellow

- First author of a literature review about sex differences in the developmental origins of disease, a topic that is published in Applied Physiology, Nutrition and Metabolism (2018)

Kozeta Miliku, Post-doctoral fellow

- Fellowship from Research Manitoba
- Fellowship from the Canadian Lung Association
- Best poster award at DOHaD Canada conference

Laura Cole, post-doctoral fellow

- Awarded Barth Syndrome Foundation International Travel Award

Jacqueline Richelle, Pediatric Resident

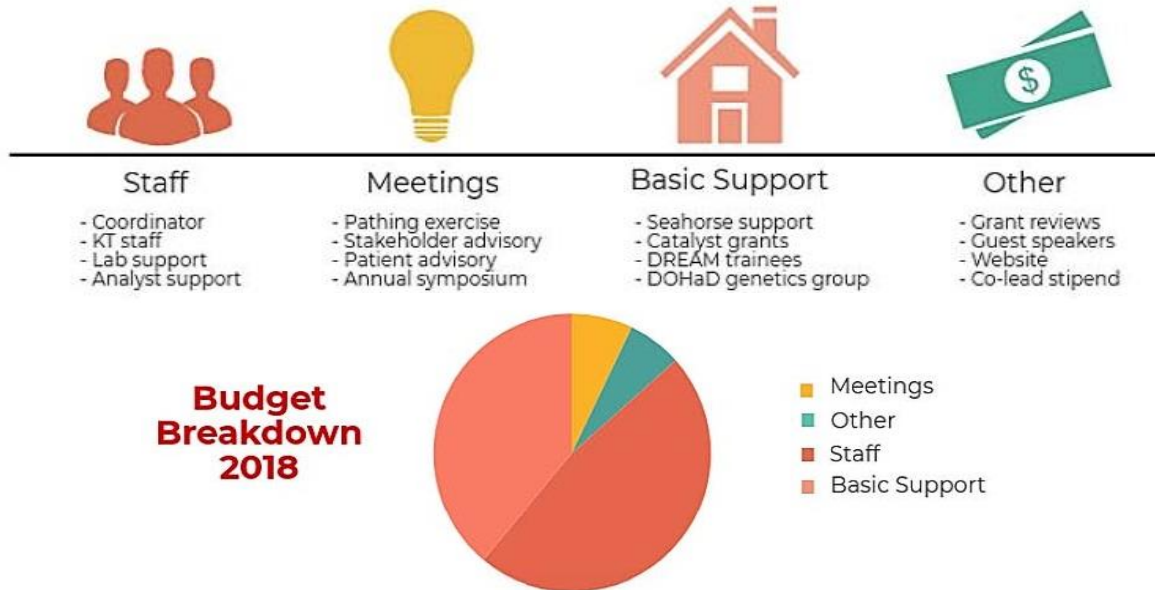
- Gold for Resident poster presentation at CHRD
- Honorable mention for Good bear's Den presentation at CHRD



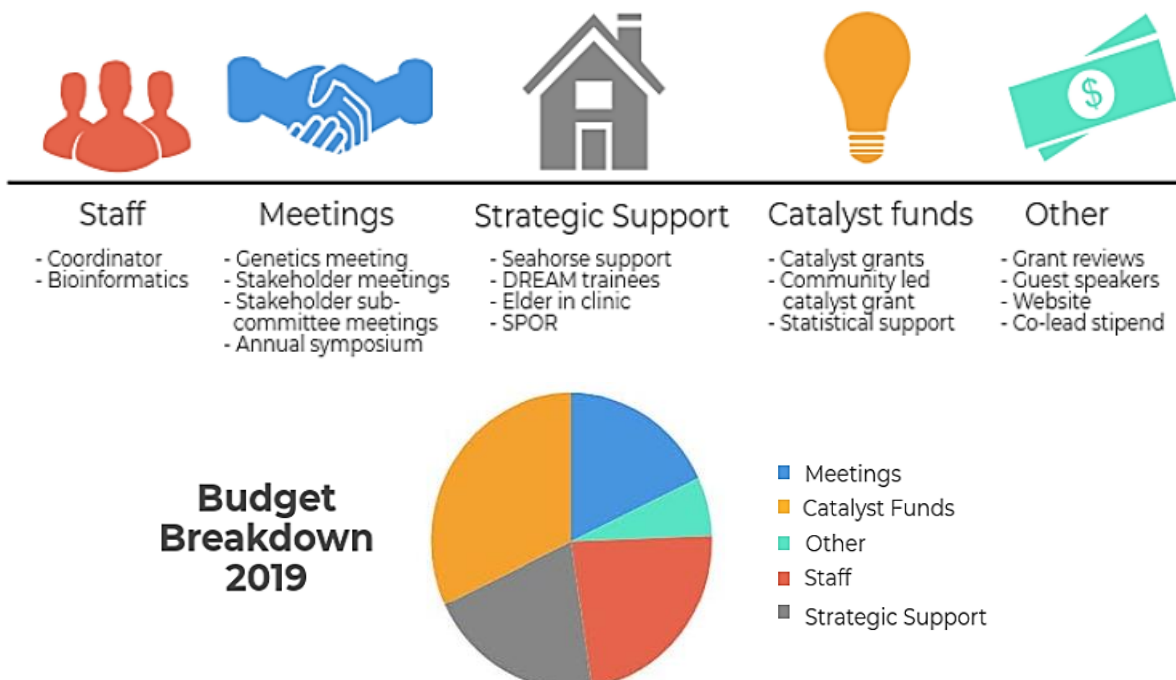
## 5. Research Funding

- a) Funding to date: Continuing funding (\$40,789,131) + new funding (\$3,668,477) = **\$44,457,608**  
 b) Total funding awarded in 2018: **\$3,668,447**  
 c) Membership research budget 2018: \$250,000.00 ROI 2018: 5.2

### Where Does This Money Go?

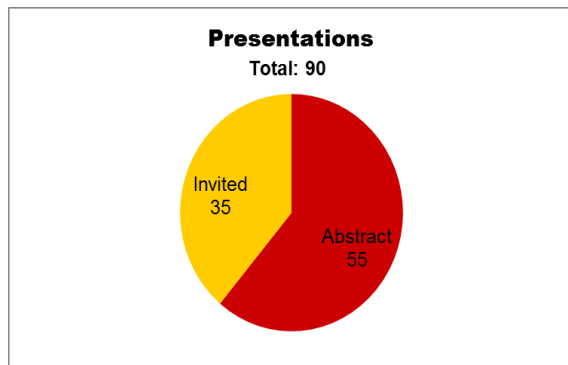
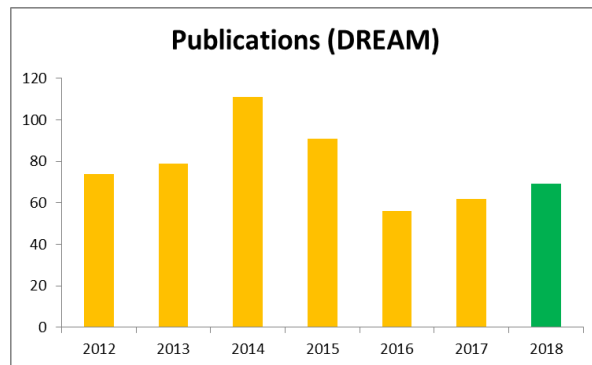


### Where Will This Money Go?



## 6. Publications

- a) 69 total peer-reviewed articles published by members of DREAM in 2018  
b) Total presentations 2018: 90 (Invited presentations 35, Abstract presentations 55)



## 7. Networking/Collaborations

Maintained links with major 4 diabetes networks

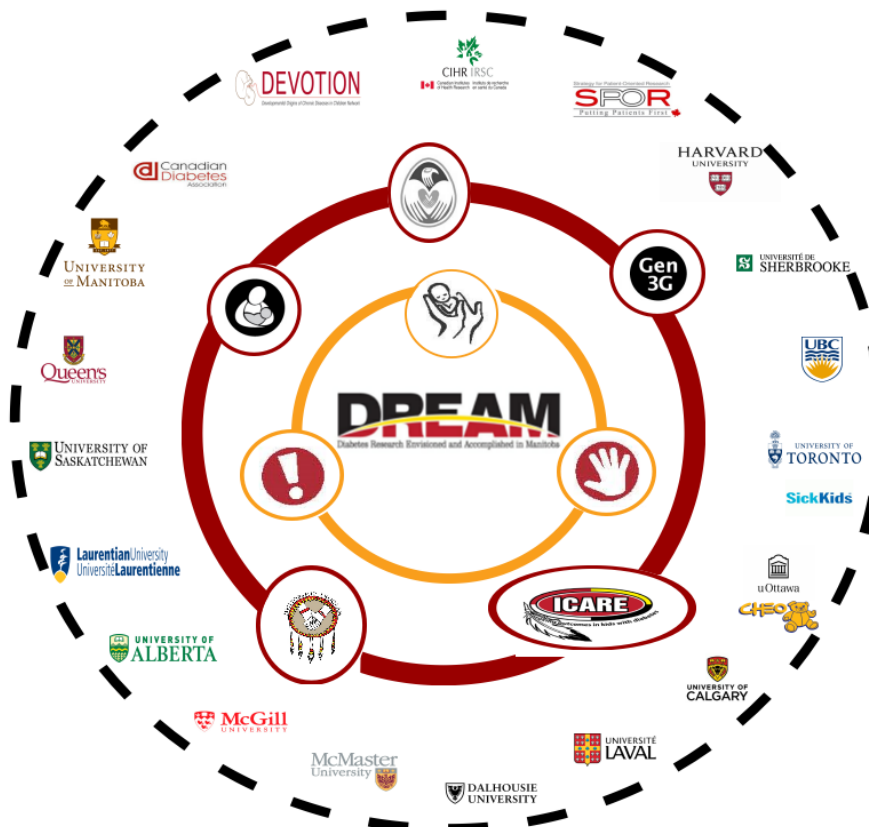
- ABC – Western Canadian Islet Biology
- CMDO – Quebec CVD/Diabetes Network
- Canadian Diabetes Association
- Diabetes Action Canada

Major role for team members in the organization of meetings of national-level perinatal research meetings:

- Diabetes Canada Annual Scientific meeting
- Canadian National Perinatal Research Meeting
- Developmental Origins of Health and Disease (DOHaD) Canada

New Collaborations:

PANDORA project (Australian birth cohort) – Dr. Louise Maple-Brown  
Bioinformatics collaboration with the University of Birmingham in the UK



## APPENDIX A: List of Research Funding and Contracts

Highlighted = funding starting in 2018

| Member   | Agency                                    | Amount                              | Duration  | Funding/yr  | Grant Type           |
|--|---|-------------------------------------|-----------|-------------|----------------------|
| Azad, PI   | CIHR                                      | \$742,052                           | 2018-2022 | \$185,513   | Project              |
| Azad, Co-I   | Genome Canada                             | \$548,140                           | 2018-2021 | \$182,713   | Project              |
| Azad, Co-I   | U of M                                    | \$97,365                            | 2018-2020 | \$48,682    | Rady Innovation Fund |
| Azad, PI   | CRC: U of M                               | \$500,000                           | 2017-2022 | \$100,000   | Chair                |
| Azad, PI   | DEVOTION                                  | \$4,995                             | 2017-2018 | \$4,995     | Catalyst Seed        |
| Azad, PI   | CIHR                                      | \$75,000                            | 2017-2018 | \$75,000    | Operating            |
| Azad, PI   | U of M / CHRIM                            | \$150,000                           | 2017-2020 | \$50,000    | Startup Fund         |
| Azad, PI   | Research Manitoba                         | \$225,000                           | 2016-2019 | \$75,000    | Operating            |
| Azad, Co-A   | CIHR                                      | \$4,165,000                         | 2016-2021 | \$833,000   | Team/Programmatic    |
| Azad, Co-I   | CIHR                                      | \$2,000,000                         | 2016-2020 | \$500,000   | Programmatic         |
| Azad, Co-I   | CIHR                                      | \$2,000,000                         | 2016-2020 | \$500,000   | Programmatic         |
| Azad, Co-I   | Prolacta Bioscience + In-Kind + CHRIF     | \$210,000                           | 2016-2018 | \$105,000   | Operating            |
| Azad, Co-I   | CIHR                                      | \$1,000,000                         | 2015-2020 | \$200,000   | Operating            |
| Azad, PI   | Heart & Stroke                            | \$150,000                           | 2015-2018 | \$50,000    | Operating            |
| Azad, Co-I   | Research MB                               | \$1,000,000                         | 2015-2019 | \$250,000   | Team                 |
| Dart, PI   | CIHR                                      | \$2,000,000                         | 2016-2021 | \$400,000   | Team                 |
| Dart, Project Lead   | SPOR (CIHR)<br>CHRIM<br>Research Manitoba | \$301,293<br>\$125,000<br>\$200,000 | 2016-2021 | \$125,000   | Can-SOLVE-KD<br>SPOR |
| Dart/Wicklow, PI<br>Sellers, McGavock<br>Co-I  | CIHR                                      | \$881,609                           | 2015-2020 | \$176,321   | Operating            |
| Dart, Co-I   | CIHR                                      | \$541,900                           | 2015-2020 | \$108,380   | Operating            |
| Davie, PI  | CCMB                                      | \$120,000                           | 2018-2020 | \$60,000    | Operating            |
| Davie, PI  | NSERC                                     | \$140,000                           | 2017-2022 | \$28,000    | Discovery            |
| Davie, Co-I  | CIHR                                      | \$4,000,000                         | 2015-2019 | \$1,000,000 | CEEHRC               |
| Davie, Co-I  | U of M                                    | \$25,000                            | 2018-2019 | \$25,000    | UCRP                 |
| Davie, PA  | CCMB                                      | \$120,000                           | 2016-2018 | \$60,000    | Operating            |
| Davie, PI  | DEVOTION                                  | \$20,000                            | 2017-2018 | \$20,000    | Catalyst             |
| Davie, PI  | CRC                                       | \$1,400,000                         | 2011-2018 | \$200,000   | Operating            |
| Dolinsky   | MMSF                                      | \$150,000                           | 2017-2020 | \$50,000    | Salary support       |
| Dolinsky, PI   | MMSF                                      | \$20,000                            | 2017-2018 | \$20,000    | Operating            |
| Dolinsky, PI<br>Davie, Wicklow, Co-PI<br>Azad, Dart, Doucette,<br>Gordon, Hatch<br>McGavock, Sellers,<br>Wittmeier, Co-I | CIHR                                      | \$2,000,000                         | 2016-2021 | \$400,000   | Programmatic         |
| Dolinsky, PI   | HSFC                                      | \$287,702                           | 2016-2019 | \$95,900    | Operating            |
| Doucette, PI<br>Dolinsky Co-I  | CIHR                                      | \$985,000                           | 2018-2022 | \$246,250   | Project              |
| Doucette   | Diabetes Fdn of MB                        | \$120,000                           | 2017-2021 | \$40,000    | Fellowship           |
| Doucette, PI   | NSERC                                     | \$140,000                           | 2015-2020 | \$28,000    | Discovery            |
| Doucette/Dolinsky  | CIHR                                      | \$503,599                           | 2014-2019 | \$100,719   | Operating            |
| Doucette, PI   | MHRC                                      | \$225,000                           | 2015-2018 | \$75,000    | Operating            |
| Gordon, PI   | Canadian Fdn for Innovation JELF          | \$500,000                           | 2018-2023 | \$100,000   | Operating            |
| Gordon, PA   | HSFC                                      | \$282,000                           | 2018-2021 | \$94,000    | In-Aid               |

|  |                                |                                    |           |                                 |  |
|--|--------------------------------|------------------------------------|-----------|---------------------------------|--|
| Gordon Co-A                            | U of M                         | \$25,000                           | 2018-2019 | \$25,000                        | Collaborative Research Prgm                          |
| Gordon, PA                             | U of M                         | \$7,500                            | 2018-2019 | \$7,500                         | Program  |
| Gordon, PA                             | U of M                         | \$7,500                            | 2018-2019 | \$7,500                         | Program  |
| Gordon, Co-I                           | DEVOTION                       | \$20,000                           | 2017-2018 | \$20,000                        | Catalyst   |
| Gordon, Co-I                           | CHRM                           | \$40,000                           | 2017-2018 | \$40,000                        | Operating  |
| Gordon, Co-I                           | U of M                         | \$25,000                           | 2017-2018 | \$25,000                        | Collaborative Research Program                       |
| Hatch, PI                              | Heart & Stroke                 | \$298,336                          | 2017-2020 | \$99,455                        | Operating  |
| Hatch, PI                              | CRC                            | \$1,400,000                        | 2013-2020 | \$200,000                       | Operating  |
| Hatch, PI                              | NSERC                          | \$170,000                          | 2014-2019 | \$34,000                        | Discovery  |
| Hatch/McGavock, Co-PI                  | CHRM                           | \$750,000                          | 2015-2018 | \$250,000                       | Theme Funding  |
| McGavock, Co-I                         | CIHR                           | \$74,950                           | 2018-2019 | \$74,950                        | Network Environments for Indigenous Health Research  |
| McGavock, Co-A                         | CIHR                           | \$997,682                          | 2017-2022 | \$199,536                       | Indigenous Mentorship Network                        |
| McGavock, PI                           | HSFC                           | \$250,000                          | 2017-2020 | \$83,333                        | Operating  |
| McGavock, PA                           | CIHR                           | \$100,000                          | 2017-2018 | \$100,000                       | Bridge funding                                       |
| McGavock, Co-A                         | CIHR/SPOR                      | \$24,999                           | 2017-2018 | \$24,999                        | Collaborating  |
| McGavock, PI<br>Sellers, Wicklow, Co-I | CIHR                           | \$900,000                          | 2016-2019 | \$300,000                       | Operating  |
| McGavock, Co-A                         | CIHR – Total Personal          | \$25,000,000<br><b>\$1,100,000</b> | 2016-2021 | \$5,000,000<br><b>\$220,000</b> | SPOR   |
| McGavock, PI                           | CIHR                           | \$1,000,000                        | 2014-2019 | \$200,000                       | Research Chair                                       |
| McGavock, PI                           | AB Innovates                   | \$3,200,000                        | 2014-2019 | \$640,000                       | Operating  |
| Sellers & Wicklow, Co-I                | CIHR                           | \$100,000                          | 2018-2019 | \$100,000                       | Priority Announcement for Indigenous Peoples' Health |
| Sellers, Co-I                          | CHRM                           | \$40,000                           | 2017-2018 | \$40,000                        | Operating  |
| Sellers, PI<br>Wicklow, Co-I           | Public Health Agency of Canada | \$80,000                           | 2016-2018 | \$40,000                        | Operating  |
| t'Jong, PI                             | Allergan Inc                   | \$34,470 USD                       | 2018-2020 | \$17,235 USD                    | Operating  |
| t'Jong, Co-I                           | CHRM                           | \$59,500                           | 2018-2019 | \$59,500                        | Operating  |
| t'Jong, PI                             | CIHR                           | \$2,999,998                        | 2017-2020 | \$999,999                       | Operating  |
| Wicklow, PI                            | U of M                         | \$60,000                           | 2018-2019 | \$60,000                        | Bridge Funding                                       |
| Wicklow, PI                            | CIHR                           | \$424,575                          | 2017-2020 | \$141,525                       | Operating  |
| All DREAM Investigators                | Research Manitoba (DEVOTION)   | \$2,500,000                        | 2015-2020 | \$500,000                       | Collaborative Cluster                                |
| All DREAM Investigators                | Lawson Fdn. (DEVOTION)         | \$1,200,000                        | 2015-2020 | \$240,000                       | Team   |
| <b>TOTAL (new2018)</b>                 |                                | \$3,668,477                        |           | \$1,293,843                     |  |
| TOTAL (all current)                    |                                | \$44,457,608                       |           | \$11,362,005                    |  |



## APPENDIX B: List of Publications

### 1. Publications (highlighted = > 1 DREAM member as an author)

**68 total publications → 18 with > 1 DREAM member** (underlined authors = trainees)

1. Moossavi S, E Khafipour, Sepehri S, Becker AB, Mandhane PJ, Subbarao P, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, and **AZAD MB\***. Maternal and Early Life Factors and Human Milk Microbiota in the CHILD Cohort. *Cell Host & Microbe* 2018 (Accepted)
2. **AZAD MB**, Wade KH and Timpson NJ. FUT2 secretor genotype and susceptibility to infections and chronic conditions in the ALSPAC cohort. *Wellcome Open Research* 2018.
3. Ho NT, Li F, Lee-Sarwar KA, Tun HM, Brown BP, Pannaraj PS, Bender JM, **AZAD MB**, Thompson AL, Weiss ST, Azcarate-Peril MA, Litonjua AA, Kozyrskyj AL, Jaspan HB, Aldrovandi GM, Kuhn L. Meta-analysis of effects of exclusive breastfeeding on infant gut microbiota across populations. *Nat Commun.* 2018.
4. MacKay DS\*, Mollard RC, Granger M, Bruce S, Blewett H, Carlberg J, Duhamel TA, Eck PK, Faucher P, Hamm N, Khafipour E, Lix LM, McMillan DE, Myrie SB, Ravandi A, Tangri N, **AZAD MB\***, Jones PJ\*. The Manitoba Personalized Lifestyle Research (TMPLR) study protocol: a multi-centre bi-directional observational cohort study with administrative health record linkage investigating the interactions between lifestyle and health in Manitoba, Canada. \*co-last author *BMJ Open* (Accepted SEP 2018)
5. Marcon, AR, Bieber M, **AZAD MB\***. Protecting, promoting, and supporting breastfeeding on Instagram. *Maternal & Child Nutrition* 2018.
6. **AZAD MB\***, Robertson B, Atakora F, Becker AB, Subbarao P, Moraes TJ, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, Bode L. Human milk oligosaccharide concentrations are associated with multiple fixed and modifiable maternal characteristics, environmental factors, and feeding practices. *The Journal of Nutrition* 2018 (in press)
7. Miliku K, **AZAD MB\***. Breastfeeding and the developmental origins of asthma: current evidence, possible mechanisms, and future research priorities. *Nutrients* 2018. 10(8); 995.
8. **AZAD MB\***, Vehling L, Chan D, Klopp A, Nickel NC, McGavock JM, Becker AB, Mandhane PJ, Turvey SE, Moraes TJ, Taylor MS, Lefebvre DL, Sears MR, Subbarao P; CHILD Study Investigators. Infant feeding and weight gain: separating breastmilk from breastfeeding and formula from food. *Pediatrics* 2018.  
 ► *Dedicated commentary in AAP News* [[LINK](#)]  
 ► *Dedicated commentary in Pediatrics* [[LINK](#)]  
 ► *Interviewed on CNN* [[LINK](#)]
9. Moossavi S, Miliku K, Sepheri S, Khafipour E, **AZAD MB\***. The prebiotic and probiotic properties of human milk: implications for infant immune development and pediatric asthma. *Frontiers in Pediatrics* 2018.
10. Miliku K, , Robertson B, Sharma AK, Subbarao P, Becker AB, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, Bode L, **AZAD MB\***. Human milk oligosaccharide profiles and food sensitization among infants in the CHILD Study. *Allergy* 2018
11. Owora AH, Becker AB, Chan-Yeung M, Chan ES, Chooniedass R, Ramsey C, Watson WT, **AZAD MB**. Wheeze trajectories are modifiable through early-life intervention and predict asthma in adolescence. *Pediatric Allergy and Immunology*. May 2018  
 ► *Selected as Editor's Choice (September 2018)*

12. Forbes JD, **AZAD MB**, Vehling L, Tun HM, Konya TB, Guttman DS, Field CJ, Lefebvre D, Sears MR, Becker AB, Mandhane PJ, Turvey SE, Moraes TJ, Subbarao P, Scott JA, Kozyrskyj AL; for the Canadian Healthy Infant Longitudinal Development (CHIL) Study Investigators. Association of Exposure to Formula in the Hospital and Subsequent Infant Feeding Practices With Gut Microbiota and Risk of Overweight in the First Year of Life. *JAMA Pediatrics* 2018 172(7):e181161.  
 ▶ *Dedicated commentary in Nature Reviews Endocrinology – 2018. 14; 510–511 [LINK]*
13. Bridgman SL, **AZAD MB**, Persaud RR, Chari RS, Becker AB, Sears MR, Mandhane PJ, Turvey SE, Subbarao P, Haqq AM, Kozyrskyj AL. Impact of maternal pre-pregnancy overweight on infant overweight at 1 year of age: associations and sex-specific differences. *Pediatric Obesity* May 2018
14. Loewen K, Monchka B, Mahmud SM, **T JONG G, AZAD MB\***. Prenatal antibiotic exposure and childhood asthma: a population-based study. *European Respiratory Journal* 2018 April 2018
15. Archibald A, **DOLINSKY VW, AZAD MB\***. Early-life exposure to non-nutritive sweeteners and the developmental origins of childhood obesity: global evidence from human and rodent studies. *Nutrients* 2018. 10(2) 194.
16. Vehling L, Chan D, **MCGAVOCK J**, Becker AB, Subbarao P, Moraes TJ, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, **AZAD MB\***. Exclusive breastfeeding in hospital predicts longer breastfeeding duration in Canada: implications for health equity. *Birth* March 2018
17. Chartier M, Tangri N, Komenda P, Walld R, Koseva I, Burchill C, McGowan K, **DART A**. Prevalence, Sociodemographics and Comorbid Health Conditions in Pre-Dialysis Chronic Kidney Disease: Results from the Manitoba Chronic Kidney Disease Cohort. *BMC Nephrology*. (Accepted 2018)
18. Hollis A, **Dart A**, Morgan C, Mammen C, Zappitelli M, Chachlani R, Samuel S. Delays in Diagnosis of Nephrotic Syndrome in Children: A Survey Study. *Paediatrics and Child Health*. (Accepted 2018)
19. McKee J, **DART A, WICKLOW B**, Dunne L. Integrated Patient Engagement in Diabetes Research: Perspectives from the iCARE Advisory Group. *Diabetes Communicator* 2018. Summer: 17.
20. Rodd C, Feely A, **DART A**, Sharma A, **MCGAVOCK J**. Biological and socioeconomic determinants of prediabetes in youth: an analysis using 2007 to 2011 Canadian Health Measures Surveys. *Pediatr Res*. 2018 (Epub)
21. **MCGAVOCK J**, Durksen A, **WICKLOW B**, Malik S, **SELLERS EA**, Blydt-Hansen T, Chateau D, **DART A**. Determinants of Readiness for Adopting Healthy Lifestyle Behaviors Among Indigenous Adolescents with Type 2 Diabetes in Manitoba, Canada: A Cross-Sectional Study. *Obesity* 2018. 26(5): 910-15.
22. Gutman T, Hanson CS, Bernays S, Craig JC, Sinha A, **DART A**, Eddy AA, Gipson DS, Bockenbauer D, Yap HK, Groothoff J, Zappitelli M, Webb NJA, Alexander SI, Goldstein SL, Furth S, Samuel S, Blydt-Hansen T, Dionne J, Michael M, Wenderfer SE, Winkelmayer WC, Currier H, McTaggart S, Walker A, Ralph AF, Ju A, James LJ, Carter S, Tong A. (2018). Child and Parental Perspectives on Communication and Decision Making in Pediatric CKD: A Focus Group Study. *Am J Kidney Dis*. 2018 (Epub)
23. **DART A**, Komenda P, Tangri N. Time to Implement the Kidney Failure Risk Equation into

Pediatric Practice. *Jama Pediatrics* 2018. 172(2): 122-23.

24. **DART A**, Lavallee B, Chartrand C, McLeod L, Ferguson T, Tangri N, Gordon A, Blydt-Hansen T, Rigatto C, Komenda P. Screening for kidney disease in Indigenous Canadian children: The FINISHED screen, triage and treat program. *Paediatrics & Child Health* 2018. April: 1-9.
25. \*Jahan S, Sun JM, He S and **DAVIE JR**. Transcription-dependent association of HDAC2 with active chromatin. *J Cell Physiol*. 2018. 233(2):1650-1657.
26. Adewumi I, Lopez C, and **DAVIE JR**. Mitogen and stress-activated protein kinase regulated gene expression in cancer cells. *Adv Biol Regul*. 2018. (In press)
27. Sepehri Z, Beacon TH, Osman FDS, Jahan S and **DAVIE JR**. DNA methylation and chromatin modifications. *Nutritional Epigenetics* 2018. (In press)
28. Moyce BL and **DOLINSKY VW**. (2018). Maternal beta-cell adaptations in pregnancy and placental signaling: Implications for gestational diabetes. *Intl. J. Mol. Sci.* 2018 (In press)
29. Agarwal P, Cole LK, Chandrakumar A, Hauff KD, Ravandi A, **DOLINSKY VW**, **HATCH GM**. Phosphokinome Analysis of Barth Syndrome Lymphoblasts Identify Novel Targets in the Pathophysiology of the Disease. *Int. J. Mol. Sci.* 2018. 19: E2026.
30. Talbot CP and **DOLINSKY VW**. Sex differences in the developmental origins of cardiometabolic disease following exposure to maternal obesity and gestational diabetes. *Appl. Physiol. Nutr. Metab* 2018.
31. Agarwal P, Morriseau TS, Kereliuk SM, **DOUCETTE CA**, **WICKLOW BA** and **DOLINSKY VW**. Maternal obesity, diabetes during pregnancy and epigenetic mechanisms that influence the developmental origins of cardiometabolic disease in the offspring. *Critical Reviews in Clinical Laboratory Science* 2018. 55:71-101.
32. Brawerman GM and **DOLINSKY VW**. Therapies for gestational diabetes and their implications for maternal and offspring health: Evidence from Human and Animal Studies. *Pharmacological Research* 2018. (In press)
33. Mughal W, Field J, Martens M, Chapman D, Huang J, Rattan S, Hai Y, Cheung KG, West A, Cole LK, **HATCH GM**, Diehl-Jones W, Keijzer R, **DOLINSKY VW**, Dixon I, Parmacek M, Kereliuk SM and **GORDON JW**. Myocardin regulates mitochondrial calcium homeostasis and prevents permeability transition. *Cell Death and Differentiation* 2018. 25: 1732-1748.
34. Wang J, Xiang B, **DOLINSKY VW**, Cattini PC. Cardiac Fgf-16 expression supports cardiomyocyte survival and increases resistance to doxorubicin cytotoxicity. *DNA and Cell Biology* 2018. (In Press)
35. Dhingra S, Rezaei Moghadam A, Zeglinski MR, Ande SR, Sheikholeslami K, Mokarram P, Sepehri Z, Rokni H, Khadem Mohtaram N, Poorebrahim M, Masoom A, Toback M, Sareen N, Saravanan S, Jassal DS, Hashemi M, Marzban H, Singal P, Wigle JT, Czubryt MP, Akbari M, Dixon IM, **GORDON JW**, Ghavami S. Myocardial Cell Signaling during the Transition to Heart Failure. *Comprehensive Physiology* 2018. (Accepted)
36. Rezaei Moghadam A, da Silva Rosa S, Samiei E, Alizadeh J, Field J, Kawalec P, Thliveris J, Akbari M, Ghavami s and **GORDON JW**. Autophagy Modulates Temozolomide-Induced Cell Death in Alveolar Rhabdomyosarcoma Cells. *Cell Death Discovery* 2018. (Accepted)
37. Alizadeh J, Shojaei S, da Silva Rosa S, Rezaei Moghadam A, Zeki AA, **GORDON JW**, Ghavami S. Detection Small GTPase Prenylation and GTP binding using Membrane Fractionation and G-LISA. *JoVe Journal* 2018. (Accepted)

38. Meaghan Rempel M, Yardley JE, MacIntosh A, Hay J, Bouchard D, Cornish S, Marks S, Hai Y, **GORDON JW**, **MCGAVOCK J**. The Effect of Exercise Intensity on the Prevention of Hypoglycemia in Untrained People with Type 1 Diabetes: A randomized cross over trial. *Scientific Reports* 2018. 8(1): 15879.
39. Field J, Martens M, Mughal W, Hai Y, Chapman D, **HATCH G**, Ivanco T, Diehl-Jones W, **GORDON JW**. Misoprostol regulates Bnip3 repression and alternative splicing to control cellular calcium homeostasis during hypoxic stress. *Cell Death Discovery* 2018. 4(1): 98.
40. **GORDON JW**. Regulation of cardiac myocyte cell death and differentiation by myocardin. *Molecular and Cellular Biochemistry* 2018. 437(1-2): 119-131.
41. Jayachandran N, Mejia EM, Sheikholeslami K, Sher AA, Hou S, **HATCH GM** and Marshall AJ. TAPP adaptors control B cell metabolism by modulating Akt activation: a novel regulatory circuit preventing autoimmunity. *Journal of Immunology* 2018. 201: 406-416.
42. Mejia EM, Zegallai H, Bouchard ED, Banerji V, Ravandi A and **HATCH GM**. Expression of monolysocardiolipin acyltransferase-1 improves mitochondrial respiratory function in Barth Syndrome lymphoblasts. *Journal of Biological Chemistry* 2018. 293: 7564–7577.
43. Zhang M, Sheng S, Zhang W, Zhang Z, Zhang M, **HATCH GM** and Chen L. MiR27a promotes the development of macrophage-like characteristics in 3T3-L1 preadipocytes. *International Journal of Biological Sciences* 2018. 14: 1599-1609.
44. Shojaei S, Alizadeh J, Thliveris J, Koleini N, Kardami E, **HATCH GM**, Xu F, Hombach-Klonisch S, Klonisch T and Ghavami S. Statins: a new approach to combat Temozolomide chemoresistance in glioblastoma. *Journal of Investigative Medicine* 2018. (Accepted)
45. Mymin D, Salen G, Triggs-Raine B, Waggoner DJ, Dembinski T and **HATCH GM**. The Natural History of Phytosterolemia: Observations on its Homeostasis. *Atherosclerosis* 2018. 269: 122-128.
46. Cole LK, Kim JH, Amoscato AA, Tyurina YY, Bayir H, Kagan V, **HATCH GM** and Kauppinen TM. Aberrant cardiolipin metabolism is associated with cognitive deficiency and hippocampal alteration in tafazzin knockdown mice. *Biochimica et Biophysica Acta Molecular Basis of Disease* 2018. 1864: 3353-3367.
47. Yu Y, Du H, Wei S, Feng L, Li J, Yao F, Zhang M, **HATCH GM** and Chen L. Adipocyte derived exosomal miR-27a induces insulin resistance in skeletal muscle through repression of PPAR $\gamma$ . *Theranostics* 2018. 8: 2171-2188.
48. Zhang M, Hu Y, Liu Y, Yu Y, Guan F, Li J, Zhang Y, Chen L and **HATCH G M**. Increased bioavailable berberine protects against myocardial ischemia reperfusion injury through attenuation of NF $\kappa$ B and JNK signaling pathways. *International Heart Journal* 2018. (Accepted)
49. Chang W, Wang Y, Yu F, Wang M and **HATCH GM**. The relationship between phospholipids and insulin resistance: From clinical to experimental studies. *Journal of Cellular and Molecular Medicine* 2018. (Accepted)
50. Chao H, Anthonymuthu TS, Kenny EM, Amoscato AA, Cole LK, **HATCH GM**, Ji J, Kagan VE and Bayir H. Disentangling oxidation/hydrolysis reactions of brain mitochondrial cardiolipins in pathogenesis of traumatic injury. *Journal of Clinical Investigation – Insight* 2018. (In Press)
51. Hombach-Klonisch S, Kalantari F, Medapati M, Natarajan S, Krisnan SN, Kumar-Kanojia A, Thatchawan T, Begum F, Xu F, **HATCH GM**, Los M and Klonisch T. HMGA2 as a



- functional antagonist of PARP1 inhibitors in tumor cells. *Molecular Oncology* 2018. (In Press)
52. Guillemette L, Hay JL, Kehler DS, Hamm NC, Oldfield C, **MCGAVOCK JM** and Duhamel TA. Exercise in Pregnancy and Children's Cardiometabolic Risk Factors: a Systematic Review and Meta- Analysis. *Sports Medicine Open* 2018. 4(35).
  53. **DART A**, **MCGAVOCK J**, Sharma A, Chateau D, Schwartz GJ and Blydt-Hansen T. Estimating Glomerular Filtration Rate in Youth with Obesity and type 2 diabetes; the iCARE Study Equation. *Kidney International* 2018. (Accepted)
  54. Pound C, Robinson J, Giglia L, Rodd C, Sharma A, Chafe R, Collet JP, Ulanova M and **MCGAVOCK J**. Scholarly Training Objectives and Requirements for Paediatric Residents in Canada. *Paediatrics and Child Health* 2018. 1: 1.
  55. Phillips-Beck W, Sinclair S, Campbell R, Star L, Cidro J, **WICKLOW B**, Guillemette L, Morris MI and **MCGAVOCK J**. Early Life Origins of Disparities in Chronic Diseases among Indigenous Mothers and Youth: Pathways to recovering health disparities from intergenerational trauma. *Journal of the Developmental Origins of Health and Disease* 2018. (Accepted)
  56. Tien-Estrada J, Vieira A, Percy V, Millar K, Tam H, Russell K, Crockett M, **DART A** and **MCGAVOCK J**. Determinants of scholarly project completion in a paediatric resident program in Canada. *Paediatrics & Child Health* 2018. e-pub: July 5th.
  57. Halipchuk J, Temple B, **DART A**, Martin D and **SELLERS EAC**. Prenatal, obstetrical and perinatal factors associated with the development of childhood-onset type 2 diabetes. *Can J Diabetes* 2018. 42: 71-77.
  58. **WICKLOW BA**, **SELLERS EAC**, Sharma A, Kroeker K, Nickles N, Phillips-Beck W and Shen GX. A comparison of gestational diabetes and type 2 diabetes exposure on the development of youth onset type 2 diabetes in First Nation and non-First Nation offspring. *JAMA Pediatrics* 2018. 172: 624-731.
  59. **SELLERS EAC**. Do children with type 2 diabetes in Canada have access to safe and effective treatment options?. *Can J Diabetes* 2018. 42: 1-2.
  60. Jabar F, Colatruglio S, **SELLERS EAC** and **WICKLOW BA**. The Next Generation Cohort: a description of a cohort at high risk for childhood onset type 2 diabetes. *J Dev Org Health Dis*. 2018. 6: 1-7.
  61. **Brandy A Wicklow** and **Elizabeth AC Sellers**. Medical Systems, Patient-Provider Relationships, and Transition of Care in Pediatric Diabetes. *Behavioral Diabetes* 2018. (In Press, Springer)
  62. Chandrakumar A, Bhardway A and **'T JONG G**. Review of thiamine deficiency disorders: Wernicke Encephalopathy and Korsakoff psychosis. *Journal of Basic and Clinical Physiology and Pharmacology* 2018. e-pub: October 2nd.
  63. Chandrakumar A, **'T JONG GW** and Klassen TP. The Role of Mainstream Publishers in Eliminating the Threat of Predatory Publishing. *Canadian Journal of Diabetes* 2018. 42(5):457-458.
  64. Delara M, Chauhan BF, Le ML, Abou-Setta AM, Zarychanski R and **'T JONG GW**. Efficacy and Safety of Pulmonary Application of Corticosteroids in Preterm Infants with Respiratory Distress Syndrome: A Systematic Review and Meta-Analysis. *Arch Dis Child Fetal Neonatal Ed*. 2018. e-pub: April 17th.

65. Dufetelle E, **'T JONG GW** and Kaguelidou F. Randomized controlled trials in pediatric patients had higher completion rates than adult trials: a cross-sectional study. *Journal of Clinical Epidemiology* 2018. 100: 53-60.
66. Chandrakumar A, Bhardwaj A and **'T JONG GW**. Maternal Antibiotic Exposure During Pregnancy and Hospitalization with Infection in Offspring. *International Journal of Epidemiology* 2018. 47(2):561-571.
67. **MCGAVOCK J, WICKLOW B** and **DART AB**. Type 2 diabetes in youth is a disease of poverty. *Lancet* 2018. 390: 1829-1831.
68. **Brandy Wicklow** and Seth Marks. Endocrine Disorders. Update in Pediatrics. Springer International 2018.

## 2. Presentations

### AZAD

#### Invited presentations

- 11/6/18 Science Meets Parliament. Ottawa, ON.
- 10/16/18 Human milk oligosaccharides and other bioactives in breast milk: evidence from the CHILd Study. *Grand Challenges Annual Meeting*. Berlin, Germany.
- 09/26/18 Breastfeeding, Human Milk Composition and the Infant Gut Microbiome: Implications for Lifelong Health. *CIFAR Humans & the Microbiome Program*. Toronto, ON.
- 09/20/18 New guidelines and evolving evidence for infant feeding and food allergies. *Canadian Nutrition Society Webinar*. Vancouver, BC.
- 09/18/18 Exclusive breastfeeding in hospital, long term breastfeeding duration, and protection from chronic disease: findings from the CHILd Study. *BFI Strategy for Ontario Hot Topic Series Webinar*.
- 09/05/18 Infant Feeding and the Developmental Origins of Chronic Disease in the CHILd cohort: Role of Human Milk Bioactives and Gut Microbiota. *6th Annual Conference on Human Milk Science and Innovation*. Pasadena, CA, USA.
- 09/05/18 Milk & Microbes: Breastfeeding, Gut Microbiota and the Developmental Origins of Chronic Disease in the CHILd cohort. *Children's Hospital Los Angeles Research Seminar Series*. Los Angeles, CA, USA.
- 06/11/18 Breastfeeding, Human Milk Composition and the Infant Gut Microbiome: Implications for Lifelong Health. *NUTRITION 2018 - The Science of Breastfeeding: An Update*. Boston, MA, USA.
- 06/07/18 Human milk and atopic disease: could breastfeeding help curb the asthma/allergy epidemic? *Advanced Breastfeeding Medicine Clinical Case Symposium*. Ottawa, ON.
- 06/09/18 Human milk bioactives and the developmental origins of chronic disease in the CHILd cohort. *American Society for Nutrition: Nutrition 2018*. Boston, USA
- 03/22/18 Infant feeding practices, wheezing and early childhood asthma in the CHILd cohort *Medela International Symposium on Breastfeeding and Lactation*. Paris, France.

#### Media Interviews

- 09/2018 Breastfeeding better for babies' weight gain than pumping, new study says - *CNNHealth*
- 06/2018 Overweight and Obesity: Infant Health - *UNICEF / Baby Friendly Initiative newsletter*

- 06/2018 Infant formula could change gut bacteria, contribute to childhood obesity: Study – *ABC News*
- 01/2018 Breastfeeding Protects Against Asthma Better than Expressed Breast Milk – *MD Magazine*

### Abstracts

1. Owora A, **AZAD MB**, Becker AB, Chan Yeung M, Chan E, Chooniedass R, Ramsey C, Watson W. Wheeze trajectories are modifiable through early-life intervention and predict asthma in adolescence. (11/2018) American Public Health Association (APHA) 2018 *Annual Meeting & Expo*. San Diego, CA, USA.
2. Chan D, Goruk S, Becker AB, Moraes T, Mandhane P, Turvey S, Subbarao P, Lefebvre D, Sears M, the CHILD Study Investigators, Field C, **AZAD MB**. Human milk hormones and body composition at age 3 in the child cohort. (10/2018) *International Society for Research in Human Milk and Lactation 2018 Conference*. Shonan Village, Kanagawa, Japan.
  - Mo-House Poster Award
3. Miliku K, Subbarao P, Moraes T, Mandhane P, Turvey S, Lefebvre D, Sears M, Becker AB, **AZAD MB**. Just one feed? Breastfeeding and blood pressure in the child study. (10/2018) *International Society for Research in Human Milk and Lactation 2018 Conference*. Shonan Village, Kanagawa, Japan.
4. Moosavi S, Sepehri S, Robertson B, Bode L, Goruk S, Field CJ, Becker AB, Mandhane P, Turvey SE, Moraes T, Subbarao P, Lefebvre D, Sears MR, Khafipour E, **AZAD MB**. Integrated analysis of human milk microbiota, oligosaccharides and fatty acids in the child cohort. (10/2018) *International Society for Research in Human Milk and Lactation 2018 Conference*. Shonan Village, Kanagawa, Japan.
5. **AZAD MB**, Timpson NJ, Moosavi S, Becker AB, Mandhane P, Turvey SE, Moraes TJ, Lefebvre D, Subbarao P, Sears MR, Hinde K. More milk for daughters? Sex-differentiated breastfeeding in two birth cohorts. (10/2018) *International Society for Research in Human Milk and Lactation 2018 Conference*. Shonan Village, Kanagawa, Japan.
  - Selected for oral presentation
6. Sbihi H, Jones M, **AZAD MB**, Becker AB, Mandhane PJ, Moraes TJ, Sears MR, Subbarao P, the CHILD Study Investigators, Kobor M, Turvey SE. Epigenetics, Built Environment and Atopy. *International Society of Exposure Science and the International Society for Environmental Epidemiology (ISES-ISEE 2018)*. Ottawa, ON.
7. Kang LJ, Tun HM, Oberlander TF, Konya TB, Becker AB, **AZAD MB**, Mandhane PJ, Moraes TJ, Sears MR, Turvey SE, Subbarao P, Scott JA, Kozyrskyj AL. Maternal prenatal depressive symptoms, serotonergic antidepressant use and alterations to infant gut microbiota. (06/2018) *7th International Human Microbiome Consortium meeting*. Killarney, Ireland.
8. Moosavi S, Sepehri S, Becker AB, Mandhane PJ, Subbarao P, Turvey SE, Moraes TJ, Lefebvre DL, Sears MR, Khafipour E, **AZAD MB**. Breastmilk Microbiota and the Risk of Childhood Asthma: A Prospective Birth Cohort Study. (06/2018) *7th International Human Microbiome Consortium meeting*. Killarney, Ireland.
9. Miliku K, Becker AB, Goruk S, Subbarao P, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, Field CJ and **AZAD MB**. Human milk fatty acids and asthma development in preschool children. (06/2018) *American Society for Nutrition Annual Meeting*. Boston, MA, USA.
  - Selected for oral presentation

10. Ezeugwu VE, Carson V, Tamana SK, Chikuma J, Lefebvre DL, **AZAD MB**, Moraes T, Subbarao P, Becker AB, Turvey SE, Sears MR, CHILD study Investigators and Mandhane PJ. (05/2018) *CCHCSP meeting 2018*. Toronto, ON.
11. Archibald A, Sharma AK, de Souza RJ, Dolinsky VW, Becker AB, Mandhane PJ, Turvey SE, Subbarao P, Lefebvre DL, Sears MR, the CHILD Study investigators, and **AZAD MB**. Prenatal and early-life exposure to non-nutritive sweeteners and body composition at 3 years of age in the CHILD cohort. (05/2018) *Pediatric Academic Societies Meeting 2018*. Toronto, ON.
12. Miliku K, Becker AB, Robertson B, Yonemitsu C, Subbarao P, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, Bode L and **AZAD MB**. Human milk oligosaccharides and asthma development in preschool children. (05/2018) *Pediatric Academic Societies Meeting 2018*. Toronto, ON.
13. Moosavi S, Khafipour E, Sepehri S, Goruk S, Field CJ, Becker AB, Mandhane PJ, Subbarao P, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, and **AZAD MB\***. Sex-specific association of breastmilk microbiota with infant weight gain and obesity in the first 5 years in the CHILD Cohort. (03/2018) *Keystone Microbiome Conference*. Banff, AB.
14. Miliku K, Goruk S, Becker AB, Subbarao P, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, Field CJ, and **AZAD MB\***. Human milk fatty acids: associations with maternal characteristics and infant body composition. (02/2018) *Developmental Origins of Health and Disease (DOHaD) Canada Conference*. Banff, AB.  
 - Won Best Poster Award
15. Miliku K, Goruk S, Becker AB, Subbarao P, Mandhane PJ, Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, Field CJ, and **AZAD MB\***. Human milk fatty acids: associations with maternal characteristics and infant body composition. (02/2018) *Canadian National Perinatal Research Meeting (CNPRM)*. Banff, AB.  
 - Selected for oral presentation
16. Chan D, Goruk S, Becker AB, Moraes T, Mandhane PJ, Turvey SE, Subbarao P, Lefebvre D, Sears MR, the CHILD Study Investigators, Field C, **AZAD MB**. Human Milk Hormones and Body Composition at 3 Years in the Canadian Healthy Infant Longitudinal Development Study. (10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.  
 - First place for Poster Presentation in the Undergraduate category
17. La M and **AZAD MB**. Stakeholder Engagement to Inform Strategies for Improving Breastfeeding Education in Manitoba Schools: Preliminary Results. (10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.
18. Lam L, Miliku K, Mackay D, the TMPLR Study Investigators, Leslie WD, **AZAD MB**. Breastfeeding and bone mineral density in adults ages 30-46. (10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.
19. Richelle J, Miliku K, Goruk S, Guirguis M, Becker AB, Subbarao P, Moraes TJ, Mandhane PJ,
20. Turvey SE, Lefebvre DL, Sears MR, the CHILD Study Investigators, Field CJ, and **AZAD MB**. Breast milk polyunsaturated fatty acids and infant allergic conditions in the CHILD Study. (10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.  
 - Selected for Oral Presentation at Dr. Goodbear's Den  
 - First place for Poster Presentation in the Pediatric Resident category
21. Miliku K, Subbarao P, Moraes T, Mandhane P, Turvey S, Lefebvre D, Sears M, Becker AB, **AZAD MB**. Just one feed? Breastfeeding and blood pressure in the child study.



(10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.

22. Moosavi S, Sepehri S, Robertson B, Bode L, Goruk S, Field CJ, Becker AB, Mandhane P, Turvey SE, Moraes T, Subbarao P, Lefebvre D, Sears MR, Khafipour E, **AZAD MB**. Integrated analysis of human milk microbiota, oligosaccharides and fatty acids in the child cohort. (10/2018). *Children's Hospital Research Institute of Manitoba Child Health Research Day*. Winnipeg, MB.

## DART

### Invited presentations

- 2018 Atul Sharma. Pediatric Hypertension in 2018: Important Changes for the Pediatrician. *Pediatric Grand Rounds*. Winnipeg, MB.
- 2018 CKD Indigenous Populations. *Pediatric Academic Societies Meeting*. Toronto, ON.
- 2018 Improving outcomes for youth onset type 2 diabetes: The iCARE cohort Study. *Cutting Edge Advances in Pediatric Research Annual Lecture Series*. McMaster University, Hamilton, ON.

### Media Interviews

- 02/18 Kidney Disease in Children. *SiriusXM Channel 110*.

## DAVIE

### Invited presentations

- 2018 Histone modifications associated with cell identity. *University of North Dakota Epigenetics Conference*. Grand Forks, USA.
- 2018 Mitogen- and stress-activated protein kinase regulated gene expression in cancer cells. *Fifty-Ninth International Symposium on "Biological Regulation and Enzyme Activity in Normal and Neoplastic Tissues"*. Bologna, Italy.
- 2018 Histone modifications associated with cell identity. *Alberta Epigenetic Network Annual Summit*. Edmonton, AB.
- 2018 Epigenetic profiling of fetal alcohol spectrum disorder and type 2 diabetes. *CLEPSO 2018*. Dusseldorf, Germany.
- 2018 Histone Arginine Methylation and Transcriptionally Active Chromatin. *IUBMB Congress*. Seoul, Republic of Korea.

## DOLINSKY

### Invited presentations

- 2018 The Role of DNA Methylation in the Pathogenesis of Type 2 Diabetes in Youth. *International Society of Nutrition and Nutrigenomics Meeting*. Winnipeg, MB.

### Abstracts

1. Kereliuk SM, Agarwal P, Cole LK, Cheung KG, Xiang B, Fonseca MA, **HATCH GM**, **MCGAVOCK J**, and **DOLINSKY VW**. Exposure to gestational diabetes alters cardiac gene expression and metabolism in the rat offspring and induces cardiac dysfunction with age. (2018) *American Heart Association*.
2. Kereliuk SM, Agarwal P, Cole LK, Cheung KG, Xiang B, Fonseca MA, **HATCH GM**, **MCGAVOCK J**, and **DOLINSKY VW**. Exposure to gestational diabetes alters cardiac gene expression and metabolism in the rat offspring and induces cardiac dysfunction with age. (2018) *Child Health Research Day*.
3. Moyce BL, Cole LK, Xiang B, Fonseca MA, **DOUCETTE CA**, **HATCH GM** and **DOLINSKY VW**. Adiponectin deficiency leads to hepatic steatosis and gestational diabetes in pregnant mice. (2018) *Child Health Research Day*.
4. Brawerman G, Kereliuk SM, Pereira TJ, Xiang B, Fonseca MA and **DOLINSKY VW**. Resveratrol supplementation prevents maternal glucose intolerance and gestational diabetes induced cardiac hypertrophy in the rat offspring. (2018) *Child Health Research Day*.
5. Tomczyk MM, Xiang B, Kereliuk SM, Cheung KG and **DOLINSKY VW**. Cardiac SIRT3 attenuates doxorubicin-induced alterations of the mitochondrial acetylome and cardiac dysfunction in rodents. (2018) *Child Health Research Day*.
6. Morriseau TS, Brar N, Agarwal P, Fonseca MA, Kereliuk SM, Cole LK, Xiang B, Seshadri N, **HATCH GM**, **DOUCETTE CA** and **DOLINSKY VW**. Gestational diabetes mellitus exposure and postnatal diet influence pancreatic islet function of the rat offspring. (2018) *Canadian National Perinatal Research Meeting*.
7. Kereliuk SM, Agarwal P, Cole LK, Cheung KG, Xiang B, Fonseca MA, **HATCH GM**, **MCGAVOCK J**, and **DOLINSKY VW**. Gestational diabetes alters mitochondrial bioenergetics in early-life and impairs cardiac function in the rat offspring. (2018) *Canadian National Perinatal Research Meeting*.
8. Moyce BL, Cole LK, Xiang B, Fonseca MA, **DOUCETTE CA**, **HATCH GM** and **DOLINSKY VW**. Altered hepatic fatty acid and mitochondrial metabolism contributes to the development of gestational diabetes mellitus in pregnant adiponectin deficient mice. (2018) *Canadian National Perinatal Research Meeting*.
9. Brawerman G, Kereliuk SM, Pereira TJ, Xiang B, Fonseca MA and **DOLINSKY VW**. Resveratrol supplementation improves maternal glucose tolerance and prevents gestational diabetes induced cardiometabolic disease development in the rat offspring. (2018) *Canadian National Perinatal Research Meeting*.
10. Kereliuk SM, Agarwal P, Cole LK, Cheung KG, Xiang B, Fonseca MA, **HATCH GM**, **MCGAVOCK J**, and **DOLINSKY VW**. Gestational diabetes exposure induces an altered cardiac mitochondrial metabolome that is associated with impaired cardiac function in the rat offspring. (2018) *Complex Data in Health Symposium*.
11. Morriseau TS, Brar N, Agarwal P, Fonseca MA, Kereliuk SM, Cole LK, Xiang B, **HATCH GM**, **DOUCETTE CA** and **DOLINSKY VW**. Gestational diabetes mellitus exposure and postnatal diet influence pancreatic islet function of the rat offspring. (2018) *Child Health Research Day*.
12. Kereliuk SM, Cheung KG, Agarwal P, Cole LK, Xiang B, Fonseca MA, **HATCH GM**, **MCGAVOCK J**, and **DOLINSKY VW**. Early life exposure to gestational diabetes mellitus alters mitochondrial bioenergetics and cardiac function in rat offspring. (2018) *Child Health Research Day*.

## DOUCETTE

### Abstracts

1. Morriseau TS, Agarwal P, Nian C, WICKLOW BA, SELLERS EA, DOLINSKY VW, Lynn FC and **DOUCETTE CA**. Investigating the impact of the HNF-1aG319S polymorphism on pancreatic beta-cell function. (2018) *European Association for the Study of Diabetes Meeting*.
2. Morriseau TS, Agarwal P, Nian C, WICKLOW BA, SELLERS EA, DOLINSKY VW, Lynn FC and **DOUCETTE CA**. Investigating the impact of the HNF-1aG319S polymorphism on pancreatic beta-cell function. (2018) *Child Health Research Day*.
3. Morriseau TS, Agarwal P, Fonseca MA, Nian C, WICKLOW BA, SELLERS EA, DOLINSKY VW, Lynn FC and **DOUCETTE CA**. Determining the contribution of the HNF-1aG319S polymorphism to pancreatic beta-cell dysfunction and type 2 diabetes development. (2018) *Islet Society Meeting*.
4. Morriseau TS, Flett TN, Hunt K, Fonseca MA, Agarwal P, Nian C, DOLINSKY VW, Lynn FC and **DOUCETTE CA**. Investigating the role of the HNF-1aG319S polymorphism in early-onset type 2 diabetes in Manitoban Indigenous youth. (2018) *Canadian National Perinatal Research Meeting*.

## GORDON

### Invited presentations

- 2018 Regulation of skeletal muscle mitophagy by Nix: Physiological and Pathologic Implications. *Department of Biochemistry and Medical Genetics Seminar*. Winnipeg, MB.

### Abstracts

1. da Silva Rosa S, Nguyen L, Chapman D, Hai Y, Rampitsch C, DOLINSKY VW and **GORDON J**. Therapeutic targeting of skeletal muscle Nix in early-onset insulin resistance. (2018) *Keystone Symposia: Mitochondria, Metabolism and the Heart*.
2. Mughal W, Field J, Martens M, Chapman D, Hai Y, Keijzer R, Rattan S, Dixon I, Huang J, Parmacek MS and GORDON JW. Myocardin regulates mitochondrial calcium homeostasis and prevents permeability transition in cardiac myocytes. (2018) *Frontiers in Cardiovascular Biology*.

## HATCH

### Invited presentations

- 2018 Aberrant cardiolipin metabolism is associated with cognitive deficiency and hippocampal alteration in tafazzin knockdown mice. *Barth Syndrome Foundation Family and Scientific Conference*. Clearwater Bay, USA.

### Abstracts

1. El-Gharbawy A, Mohsen A-W, Karunanidhi A, Kochersperger C, Basu S, Seminotti B, Wang Y, Sparagna G, HATCH GM and Vockley J. Targeting cardiolipin: a new therapeutic approach to treat long chain hydroxyacyl-CoA dehydrogenase and mitochondrial trifunctional protein deficiencies. (2018) *Soc. Study Inborn Errors Met. (SSIEM) Meeting*.
2. Cole LK, Kim JY, Amoscato AA, Tyurina YY, Bayir H, Kagan VE, Kauppinen T and HATCH GM. Aberrant cardiolipin metabolism is associated with cognitive deficiency and hippocampal alteration in tafazzin knockdown mice. (2018) *Barth Syndrome Fdn. Int'l Family and Scientific Conf.*

3. Cole LK, **DOUCETTE C**, Vandel M, Fonseca M, Xiang B, Sparagna GC, **DOLINSKY VW** and **HATCH GM**. Aberrant cardiolipin metabolism is associated with cognitive deficiency and hippocampal alteration in tafazzin knockdown mice. (2018) *Barth Syndrome Fdn. Int'l Family and Scientific Conf.*
4. Cole LK, **DOUCETTE C**, Vandel M, Fonseca M, Xiang B, **DOLINSKY VW** and **HATCH GM**. Altered islet function may promote a lean phenotype in tafazzin deficient mice. *14th Annual CHRIM Child Health Research Day*. Winnipeg, MB.
5. Mymin D, Salen G, Triggs-Raine B, Waggoner DJ, Dembinski T and **HATCH GM**. The Natural History of Phytosterolemia: Observations on its Homeostasis. (2018) *Canadian Lipoprotein Conference*.
6. Mejia EM, Zegallai H, Bouchard E, Banerji V, Ravandi A and **HATCH GM**. The role of tafazzin and monolysocardiolipin acyltransferase-1 in mitochondrial function in Barth Syndrome lymphoblasts. (2018) *Canadian Lipoprotein Conference*.
7. Mymin D, Salen G, Triggs-Raine B, Waggoner DJ, Dembinski T and **HATCH GM**. The Natural History of Phytosterolemia: Observations on its Homeostasis. (2018) *XVIII International Symposium on Atherosclerosis*.
8. Hombach-Klonisch S, Kalantari F, Medapati MR, Krishnan SN, Thanasupawat T, Natarajan S, Begum F, Xu FY, **HATCH GM**, Los M and Klonisch T. HMGA2 reduces the efficacy of PARP1 inhibitors in tumor cells. (2018) *Canadian Symposium on Genome Integrity and Telomeres*.
9. **HATCH GM**, Cole LK, **DOUCETTE C**, Vandel M, Fonseca M, Xiang B and **DOLINSKY VW**. Altered islet function may promote a lean phenotype in tafazzin-deficient mice. (2018) *Gordon Research Conference*.

## MCGAVOCK

### Abstracts

1. Guillemette L, **SELLERS E**, **WICKLOW B**, Shen G, Fransoo R, **DOLINSKY VW**, **GORDON J**, Jassal DS, **DART A**, Duhamel T and **MCGAVOCK J**. Contrary to breastfeeding initiation, high school completion is associated with lower cardiovascular risk after intrauterine exposure to diabetes. (2018) *Diabetes Canada Annual Meeting*.
2. Guillemette L, **SELLERS E**, **WICKLOW B**, Shen GX, **DOLINSKY VW**, **GORDON J**, Jassal DS, **DART A**, Nickel NC, Duhamel T and **MCGAVOCK J**. Gestational and type 2 diabetes exposure is associated with higher cardiovascular risk in youth. (2018) *Diabetes Canada Annual Meeting*.
3. Guillemette L, **SELLERS E**, **WICKLOW B**, Shen G, Fransoo R, **DOLINSKY VW**, **GORDON J**, Jassal DS, **DART A**, Duhamel T and **MCGAVOCK J**. Positive social determinants of health could prevent cardiovascular risk after exposure to maternal diabetes in youth and young adults. (2018) *Canadian National Perinatal Research Meeting*.
4. Guillemette L, **SELLERS E**, **WICKLOW B**, Shen G, Fransoo R, **DOLINSKY VW**, **GORDON J**, Jassal DS, **DART A**, Duhamel T and **MCGAVOCK J**. Exposure to gestational and pre-gestational diabetes increases cardiovascular risk in youths and young adults. (2018) *Canadian National Perinatal Research Meeting*.

## SELLERS

### Invited presentations

- |      |  |
|------|--|
| 2018 | Non-type 1 diabetes in children. <i>2018 Canadian Pediatric Society Annual Conference</i> . Quebec City, QC. |
|------|--|



- 2018 In search of the holy grail - successful transition. *Diabetes Canada/CSEM Annual Conference*. Halifax, NS.
- 2018 Strategies for supporting Indigenous youth with type 2 diabetes. *Cree Health Board Diabetes CME*. Montreal, QC.

## T'JONG

### Invited presentations

- 2018 Can I Prevent an Obese Child from Becoming an Obese Adult? *60th Annual Scientific Assembly -The Manitoba College of Family Physicians*. Winnipeg, MB.
- 2018 Pragmatic Approaches to Improvements in Pediatric Drug Therapy. *ASCPT 2018 Annual meeting*. Orlando, USA.

## WICKLOW

### Invited presentations

- 2018 Julie Halipchuk. Breastmilk medicine: Our chance to change the intergenerational impact of Type 2 Diabetes. *Diabetes Canada Annual Scientific Symposium*. Halifax, NS.
- 2018 Improving the Renal Complications in Adolescents with Type 2 Diabetes. *Pediatric Academic Society (PAS) Annual Scientific Conference*. Toronto, ON.
- 2018 Type 2 Diabetes in Children: Nature, Nurture and the Next Generation. *BC Pediatric Diabetes Day 2018*. Vancouver, BC.

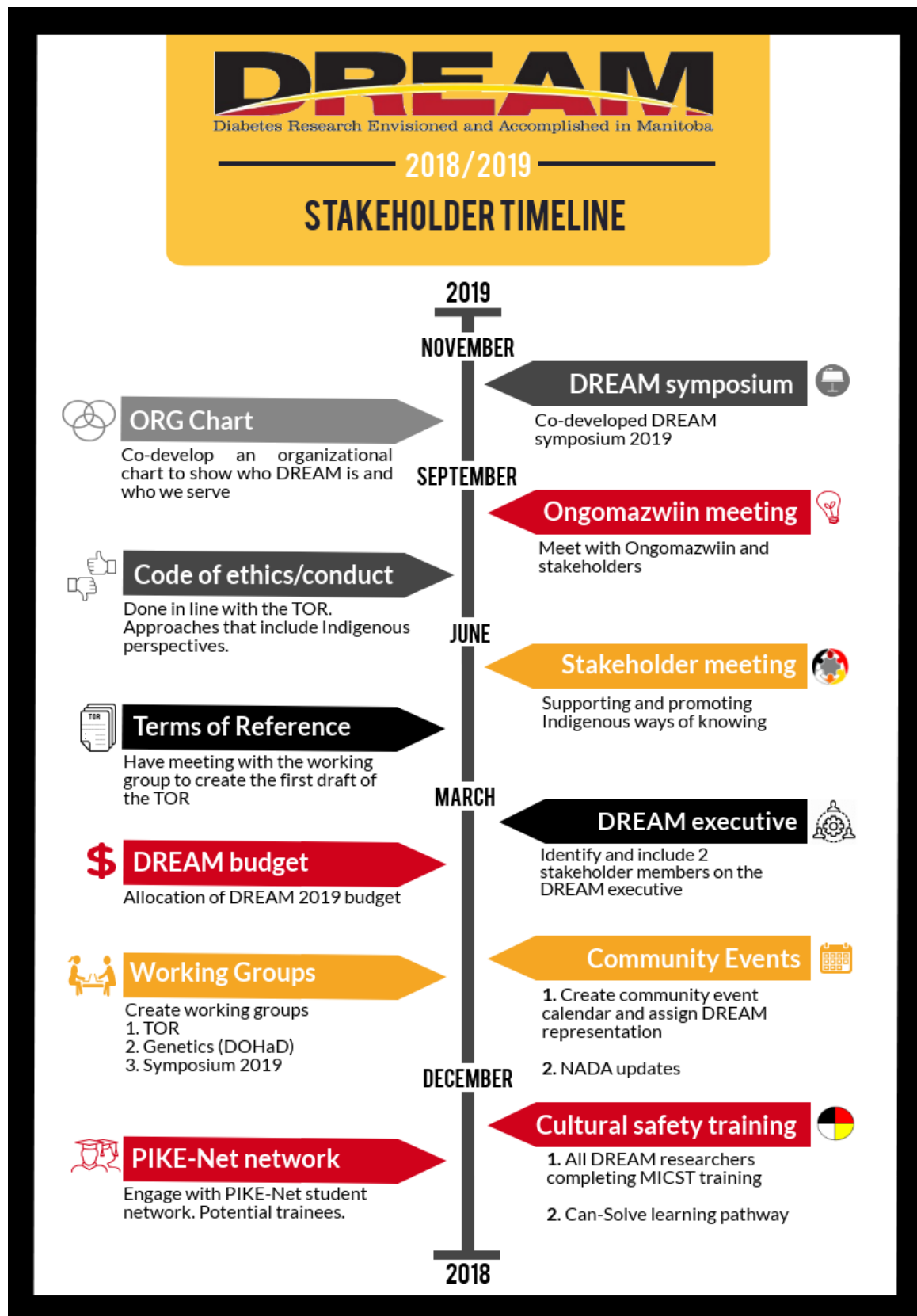
### Abstracts

1. Jabar F, MacDonald C, **SELLERS E** and **WICKLOW B**. Biological Determinants of Type 2 Diabetes in Offspring born to Mothers with Type 2 Diabetes: The Next Generation Birth Cohort. (2018) *Canadian National Perinatal Research Meeting*.
2. Gabbs M, **DART A**, Jabar F, Kroeker K, Blydt-Hansen T, **MCGAVOCK J** and **WICKLOW B**. Vitamin D status in Indigenous Youth with Type 2 Diabetes. (2018) *Diabetes Canada Annual Scientific Meeting*.

## APPENDIX A: 5 year review – SWOT analysis

|   |  |
|---|--|
| <p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Symposium</li> <li>• Cohorts</li> <li>• Patient engagement</li> <li>• Brand</li> <li>• Vision</li> <li>• Excellent team</li> <li>• Engaged trainees</li> <li>• Foundation support</li> <li>• Administrative support</li> </ul> | <p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Internal communications</li> <li>• Perceived emphasis on DOHaD – compared to complications/interventions</li> <li>• Ability to attract top trainees (graduate students and postdoctoral fellows)</li> <li>• Low faculty support for journal club (lead by example, and support the culture)</li> </ul> |
| <p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Strengthen the intervention theme</li> <li>• 5 year strategic plan</li> <li>• Major CFI application</li> <li>• Build trainee program</li> <li>• Develop business case for provincial funding of DREAM</li> </ul>           | <p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Funding (less \$ from Research Manitoba)</li> <li>• Long-term funding of the NextGen cohort</li> <li>• Aging equipment and future needs</li> <li>• DREAM/DEVOTION linkages</li> </ul>   |

## APPENDIX B: Stakeholder Timeline



## APPENDIX C: 2018 Frederick Banting Award from Diabetes Canada



Joe Gordon, Heather Dean, Liz Sellers, Christine Doucette, Jana Slaght



## APPENDIX D: Network Map

