



All Centres (provisional Centres; McGill Centres), Research groups and Networks that receive funding from the Faculty of Medicine and Health Sciences (FMHS) are required to provide two components of reporting:

1. an Annual Report of Activities and Outcomes (see below),
2. a Financial Statement (see attached Excel document).

The reporting period is May 1, 2020 – April 30, 2021.

**Deadline: Monday, May 3<sup>rd</sup>, 2021 (extension granted to May 17<sup>th</sup> 2021)**

Please send both documents to the Research Office, Faculty of Medicine and Health Sciences  
([riac.med@mcgill.ca](mailto:riac.med@mcgill.ca))

**Continued support from the Faculty is contingent on:**

1. the receipt of the reporting documents on time,
2. the evaluation of reported activities by the Faculty's Committee for Oversight of Research Units (CORU),
3. the availability of Faculty funds.

Your strong engagement in the Faculty's mission for continued research excellence and financial stewardship is truly appreciated.

**Please respect the page limits, where indicated, or the report will be returned.**

*(The accepted font is Times New Roman or Calibri regular 11 pts)*

1. Name of the Unit: McGill International TB Centre (MTBC)
2. Director's contact information: Dr. Dick Menzies, Director of the McGill International TB Centre / WHO Collaborating Center for Tuberculosis Research, [dick.menzies@mcgill.ca](mailto:dick.menzies@mcgill.ca), 514-934-1934 ext 32128.
3. If the Unit is a **Senate-approved** McGill Research Centre, indicate date of approval: December 3<sup>rd</sup>, 2014; Board of Governors approval February 2<sup>nd</sup>, 2015.
4. Mission Statement of the Unit: To conduct innovative research and training that can support TB elimination within Canada and globally.
5. Number of Unit members: 35, including 24 Full members, 9 Associates, 1 Emeritus and 9 Foreign-based associate members.
6. Number of members affiliated with McGill's FMHS: 18
7. **Unit's website:** URL: <http://www.mcgill.ca/tb/>

**Note: The website needs to feature the following:**

- all sources of funding support (including the FMHS logo),
  - the List of Members and their institutional affiliation with appropriate links,
  - the activities supported by the Unit
  - all previous Annual Reports.
8. Summary of past year's **goals and objectives** of the Unit. (**limit: ½ page**)
    - Use bullet points or numbered lists and be as quantitative as possible.
    - Indicate unforeseen changes, opportunities or difficulties.
- In this 8<sup>th</sup> year of operations, the TB Centre continued to grow while staying focused on the core goals:
    - To conduct innovative research that could result in transformative new tools required to end TB globally;
    - To provide training & technical assistance that can support TB elimination within Canada and globally.
  - **WHO Collaborating Centre (WHO CC):** Since November 17<sup>th</sup> 2018, the Pan American Health Organization / World Health Organization (WHO) designated the McGill International TB Centre as a PAHO / WHO Collaborating Centre for Tuberculosis Research.
  - **Leadership and Coordination:** Dr. Dick Menzies, the Director of the WHO CC, was named the MTBC Director (as of November 2020). A new Manager position was created and Mme Lisandra Lannes hired for this. The leadership team included an Executive Committee: Drs. Behr and Divangahi (Fundamental Research), Drs. Pai and Ahmad Khan (Clinical Research) and Dr. Oxlade (Global/Population Health). This Committee had **6 management meetings**, including several on the development of the new Strategic Plan 2021-2025.
  - As a WHO CC, the **MTBC partnered with the WHO** to host 2 virtual trainings:
    - 5 days training workshop on **Economic evaluations during implementation research in digital technologies for tuberculosis** (November 23-27, 2020). 22 participants from the national TB programs of China, Malaysia, Pakistan and Uzbekistan.
    - 5 days training courses in **Economic Research Methods offered in Low- and Middle-Income Countries (LMIC)** (April 12-16, 2021). **71 participants:** senior managers, TB research focal persons and practitioners in public

health programs, including TB programs, and faculty and students from universities in LMIC.

- The COVID-19 pandemic severely affected members' activities, curtailing direct research (particularly clinical-epidemiologic research activities), restricting training, disrupting planned research meetings, and diverting researchers time and efforts to COVID-related clinical care (for all clinician-scientists) and research (for most MTBC members). However, MTBC members have been very active in the COVID-19 response. Dr. Behr is Co-Director of Mi4, which has provided 36 grants, totalling 3 million \$, to support coronavirus research. Among the MTBC researchers who have been supported, the list includes Drs. Menzies, Divangahi, Behr, Ahmad Khan, Campbell, Reed, Pai and Benedetti.
- Dr. Evans, the newest member of the MTBC, is coordinating the Canadian Covid-19 Immunity Taskforce, funded by the Canadian government, and Dr. Oxlade, member of the MTBC Executive Committee, was hired as Associate Scientific Director.
- The Centre's 8<sup>th</sup> [Annual TB Research Day](#) scheduled for March, 2020 was rescheduled to March 24, 2021.
- The **Summer Institute 2020** scheduled for June, 2020 had to be rescheduled to June, 2021. The MTBC remained the biggest contributor to the McGill Summer Institute in Infectious Diseases and Global Health ([www.mcgill-idgh.ca](http://www.mcgill-idgh.ca)), which hosted over 550 participants from over 43 countries in June 2019.
- The **IDIGH Annual Student Research day 2020**, supported by the TB Centre, scheduled for April 17, 2020 had to be rescheduled as well to May 21, 2021 (<https://idigh.ca/en/events/research-day>).

9. **Major achievements** enabled by the support obtained from the Faculty. **(limit: 1 page)**

*(see Appendix for suggested metrics)*

**Note:** We care to evaluate how the Unit is doing as a whole greater than the sum of its talents. For this reason, do not list achievements from a single PI member of the Unit. Instead, please report only the achievements from the coordinated efforts of at least two PI members of the Unit.

- Use bullet points
- Insert an appendix for publications, grants, etc. if necessary.

Below is a non-exhaustive list of the Centre's major achievements in the reporting period:

- Dr. Dick Menzies, the Director of the WHO CC, was named the **MTBC Director** (as of November 2020). This allows us to develop a coordinated plan, and prompted a re-assessment of our functioning as a Centre, and our strategic positioning at the national and international levels.
- A **new MTBC Manager** position was created, to replace what was primarily secretarial / administrative assistant work of the former Manager, and Ms. Lisandra Lannes was hired in November. In her former position with the International Health Unit of the University of Montreal, over the last 5 years she developed, obtained funding for, and managed large scale health development projects (in Morocco, Lebanon, Kazakhstan, Ivory Coast and Haiti) were funded by Global Affairs Canada and other sources. Before that she was the director of the "Réseau francophone international pour le promotion de la santé" where she worked in health development for 7 years. Part of her mandate at the MTBC is to work with the new Director to set new priorities and new directions for the Centre, through development and implementation of a new Strategic plan 2021-2025, in collaboration with internal and external stakeholders.
- Since November 2020, the MTBC has been developing a **new Strategic plan 2021-2025**. This plan will be consistent with the vision and mission of the MTBC as well as the terms of reference of the WHO CC. All MTBC members have been involved in this strategic planning process to help set priorities. We have distributed questionnaires to all members and trainees, and held 7 small group discussions, plus added meetings with the Executive Committee. The preliminary report will be validated with key external stakeholders by June 2021; this plan will be finalized by summer, with implementation beginning in fall 2021.
- A **SWOT analysis**, conducted as part of this exercise has identified that many members and trainees feel too 'siloed', and that that the Centre was not truly more than the "sum of its parts". Trainees strongly expressed a need for new **inter-disciplinary courses** that would provide exposure to, and take advantage of, the breadth of research disciplines of the MTBC members. Members expressed a need to create new collaborations - internally that would cross disciplines (foster Translational research) and externally to build stronger and more linkages to institutions in LMIC. We have now identified **3 main strategic priorities**: These are described in detail Section 15 below.
- **Prizes, special awards to member(s) as a result of Unit activities**: More than 100 publications were co-

authored by PIs. The journal impact factors for these varied from 2.250 to 79.000, with an average of 18.000. MTBC members had publications in journals such as New England Journal of Medicine; The Lancet: Lancet Global Health; Cell; Science Immunology; PLoS Medicine; Nature Microbiology; Nature Reviews Disease Primers and BMJ. MTBC received the [2020 Stop TB Community Award](#) (see Appendix 1).

- There were at least **27 grants funded or ongoing with at least 11 Unit PIs as co-investigators**, representing more than **\$12,724,553 million** for May 2020 to April 2021. Dr. Menzies and several MTBC investigators (Behr, Schwartzman, Ahmad-Khan, Johnston and Fox) received a new grant from the Centers for Disease Control and Preventions for Tuberculosis Trials Consortium Clinical Research Services in 4 countries (Canada, Australia, Benin and Vietnam (2020-2030, **17.2 million CAD \$**).
- In addition, several MTBC members hold prestigious **personal salary support** awards including CRC (Menzies, Pai, Behr) and FRQS (Veyrier, Grandjean Lapierre, Ahmad Khan).
- **Policy contributions:** MTBC members were actively involved in several major international policies and reports, including: WHO [guidelines](#) rapid review on management of drug-resistant TB. The [Lancet Commission](#) on Tuberculosis. The [Economist Intelligence Unit](#) report on drug-resistant tuberculosis. The American Thoracic Society, U.S. Centers for Disease Control and Prevention, European Respiratory Society, and Infectious Diseases Society of America (ATS/CDC/ERS/IDSA) [Clinical Practice Guideline](#).
- A total of **12 TB seminars** with presentations by MTBC members or international TB researchers, brought together members, students and the TB network with an average of 45 attendees.
- MTBC members chaired or presented sessions at the **25<sup>th</sup> Annual of the Union North American Region** (February, 25-27, 2021) <https://bc.lung.ca/sites/default/files/2021%20NAR%20Conference%20Program.pdf>.
- **MTBC Virtual TB Research Day 2021**, in collaboration with Results Canada and Stop TB Canada. **Over 70 participants** attended the event, including opening remarks from the **Executive Director of the RI-MUHC** and the **VP-Dean of the FMHS**, 3 keynote speakers from the Gates Medical Research Institute, Nunavik Regional Board of Health and Social Services, and Results Canada. **13 McGill students and trainees** were awarded. A **post-conference** survey completed by the participants indicated high satisfaction rate.
- **Media:** MTBC Members have been in external media at least 53 times (37 TB-related and 16 COVID-related). We are continually sought by national and international media organizations based on our collective expertise. The Centre also sends out a monthly TB newsletter to all its members and TB network.

10. **New Members** who joined the Unit in the past year and their **institutional affiliation(s)**.

Name Last, First	Title PI, Staff or Trainee [Graduate student (GS) or post- doctoral fellow (PDF)]	Type of Membership Full, Associate	Affiliation(s)
Togun, Toyin	PI	Associate member	TB Centre / London School of Hygiene and Tropical Medicine

11. Members who have **left the Unit** over the reported year.

NA.

12. *State how the current and forecasted activities of your Unit align with the Education or Research mission (Strategic Research Plan) of the FMHS and/or other Faculties at McGill (limit: ½ page):*

MTBC investigators and trainees are leaders in each of the three aims laid out in the Faculty Mission Statement: Education, Research and Service. In terms of research, the Centre presents multiple opportunities for synergistic research interactions, both across disciplines and across institutions, thus contributing to the development of innovative research and academic programs. More specifically, MTBC investigators address research goal D.3, by using genomic technologies to advance our study of microbes and their capacity to spread among different host populations (Reed). Additionally, studies of the host resistance to these microbial threats directly addresses research theme E1, Basic Life Sciences, most

specifically aims E.1.3 (Integrative genomics (Schurr) and E.1.5 (Molecular Medicine- Behr). Given our specific expertise in host-pathogen interactions, our work also addresses research goal E. 2.3 (Host-Pathogen interactions and Infectious Disease Pathogenesis – Behr, Divangahi). Finally, the Centre expertise has also extended to epidemiology, theme E.3.1, including evaluation diagnostic tests (Pai, Alvarez, Behr) and epidemiology of TB in Canada and abroad (Menzies, Schwartzman, Benedetti). The latter investigators also maintain an interest in C.3, Health and Society, with a published record of studying the social determinants of TB (Zwerling, Oxlade, Daftary, Engels).

**Planned activities in line with the FMHS Strategic Research Plan:**

- Develop a strategy at the FMHS to recruit new investigators (clinician scientist and PhD scientists).
- Create learning opportunities for students and trainees: Develop an MTBC training plan (workshops series: primary data collection, field studies diagnostic studies, basic studies, training on leadership skills, grant writing courses, interdisciplinary course on TB research, etc.).
- Develop training that allow people in TB high-burden settings to improve TB prevention and care (clinical practice, testing, etc.).
- Sponsor post-doc students and support multi-year funding for trainee positions (co-supervision of a project) from LMIC.
- Develop on-line activities: Trainings, seminars, webinars, courses; consultation in research (design, execution, analysis, SAC and DSMB roles), consultation in clinical.

**13. Explain why support from the FMHS continues to be crucial to the operations of the Unit (limit: ½ page):**

The funds provided by the Faculty of Medicine enable us to pay for:

- A **half-time MTBC Manager** whose main responsibilities are the development and the implementation of the MTBC / WHO CC Strategic Plan 2021-2025, the coordination of the activities, including the Annual TB Research Day, TB Seminars and Executive committee meetings, the financial management of all the expenses related to MTBC accounts, the branding of the TB Centre and the daily communications. For the 2021-2022 year, we plan on expanding the activities of the MTBC through the implementation of the Strategic plan 2021-2025. Action plans will be developed for each priority and the development of specific activities will require a Manager salary support (expansion of contracts with universities in LMIC, fostering interdisciplinary projects, writing grants, development of training courses, networking, writing policy briefs to Health Canada / Global Affairs Canada, etc.). Although the Centre benefits from other sources of funding, few if any allow for salary support for these types of development activities, highlighting the crucial nature of the funding received from the FMHS. The salary Manager is supported from several sources - by mainly the RI-MUHC and the FMHS of McGill – matching funds together - we can have **one high level Manager**. Additionally, an increase in the salary support provided by the FMHS would allow us to hire a manager on a near full-time basis, expand the Centre's activities and projects and reinforce our strategic positioning.
- A **part-time Clerical Assistant** whose main tasks are maintaining the MTBC website, preparing and promoting the MTBC Newsletter and updating the list of members.
- **Travel awards to students** for trainees - Graduate students and Postdoctoral fellows (co-sponsored with GHP) - to defray the costs for presenting at scientific meetings (registration and travel expenses).
- During the **Annual TB Research Day**, multiple prizes and awards are given to students (co-sponsored with McGill GHP). They include publication prizes for the Best Paper in Biomedical Research, Clinical Research and Health Outcomes Research; poster and oral presentations prizes.
- The funding supports various expenses of the MTBC throughout the year, notably the office material and the expenses related to the scientific events, and effort made to submit large, team grants such as NFRF. It is unlikely the MTBC activities would have the same reach and impact without the FMHS funds.

**14. List action items that the Unit has taken or will consider taking in the next year towards growth and sustainability of its operations (limit: ½ page)**

- Use bullet points

**Finalizing and implementation of the new Strategic plan 2021-2025:** Action plans / specific activities for each priority will be developed.

- **Priority 1:** create new collaborations and priorities for interdisciplinary projects
  - Develop formal mechanisms / agreements for joint-projects with universities in LMIC and National TB control programs from high-burden countries.
  - Develop interdisciplinary research and projects that involve MTBC members, and new partnerships with outside organizations (universities, and agencies).
  - Expand knowledge translation, as an integral part of research from planning to completion.
- **Priority 2:** strengthen capacity building activities for trainees from Canada and LMIC;
  - Develop a new interdisciplinary course on TB research for all MTBC research trainees.
  - Create other learning opportunities for students and trainees: workshops: primary data collection, field studies diagnostic studies, basic studies, training on leadership skills, grant writing courses.
  - Sponsor graduate and post-doc students and support multi-year funding for trainee positions from LMIC.
  - Develop on-line courses and other activities for researchers/trainees in LMIC: seminars, webinars, consultation in research (design, execution, analysis, SAC and DSMB roles).
- **Priority 3:** play a greater leadership role on the Canadian and international scenes.
  - Advocate for scientific advances to be implemented in public health practices in Canada and globally. Write policy briefs to present research and recommendations to a non-specialized audience.
  - Explore new funding mechanisms that could foster new collaborations in Canada and internationally.
  - Develop a patient 'voice' through a standing patient committee for research, training and development.

- **Other Funding Sources**

The TB Centre plans on renewing its funding requests to the RI MUHC (WHO CC), McGill GHP (matching funds for TB Research Day, travel awards, etc.), and MGH Foundation (TB Research Day ALFA award), as well as continuing to explore other funding opportunities. Two technical and financial proposals were submitted to the WHO Global TB Programme: "Data Curator for the public access Global individual patient data platform for drug-resistant TB"; "Conducting Data synthesis and analysis on the use of new regimens for the treatment of drug-resistant TB").

15. *Provide suggestions about how the Faculty could do better to support the Unit and research efforts in general (e.g., centralized data repositories, institutional data management plans, support for software developments, guidance for adopting open-science practices, simplification of administrative procedures, etc.) (no page limit but please be specific and unleash your creativity!)*

In order to support the Unit in implementing its new Strategic plan, and to support the Units' research efforts in general, the FMHS could provide support for:

- The development of formal relationships with LMIC, especially universities (a central resource on how to achieve these from the FMHS could be needed).
- Fully on-line courses - (assistance in accreditation by McGill notably for accreditation from McGill Continuing Professional Development Office, and technical support by a core IT group at McGill).
- The development of Scholarships and research training programmes with Health Canada / Global Affairs Canada.
- Support / assistance with Patient voice - (how to/who to, etc).
- Knowledge Translation activities - this is an academic need - shared by all groups, and a new academic field. FMFHS should develop academic expertise in this new field.

In the attached (Excel) **Year-End Financial Report** please detail:

1. Expenditures of funding provided by the FMHS and other sources, towards meeting the objectives of the Unit,
2. Any in-kind contributions provided to the Unit by other partners and sponsors,
3. Projected budget for the coming year (including request to the FMHS).

## Appendix

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### Suggested Performance Indicators (non-exhaustive list)

#### Quantitative:

- Governance: provide details of management meetings. For example, membership, frequency, attendance, the nature of the meetings and the outcomes.
- Number of workshops, conferences or seminars conducted, number of attendees and target audience;
- Number of visiting scientists hosted by the Unit;
- Number of outreach activities (e.g., public lectures, including in schools, the industry and government agencies, press releases);
- Number of publications co-authored by at least 2 Unit PIs, and journal impact factors;
- Number of targeted activities:
  - involving research interactions for graduate and postgraduate students,
  - Industry stakeholder interactions;
- Number of web hits and articles downloaded;
- Outcomes of surveys of Unit members;
- Number of grants funded, with at least 2 Unit PIs as co-applicants;
- Prizes, special awards to member(s) as a result of Unit activities.

#### Qualitative:

- Activities/outcomes which may not have occurred without the Unit;
- Use of shared resources and facilities;
- Effectiveness of governance processes in place;
- Research building capacity, or removing impediments to research;
- Multi-disciplinary collaborations;
- Increased or new collaboration and partnerships as a result of Unit activities, and with different types of end users (e.g. industry, government and community groups);
- Workshops & meetings the Unit provided financial support for;
- Communication within/outside the Unit (e.g. email, newsletters, website, etc.);
- Level of engagement at seminars and workshops organized by the Unit;
- What exceptional successes, if any, have occurred during the reporting period;
- What disappointments, if any, occurred during the reporting period;
- How new skills have been acquired as a result of research technology;
- Emphasize collaborations between other Units at McGill and internationally;
- Development of tools, software, databases;
- **Emphasize all kinds of open-science efforts.**

## Appendix 1: MTBC Grants and Publications 2020

### TOTAL NUMBER OF

Media articles: 37 (excluding COVID-19)

Pubs: 49 TB-related (in this document)

### MEMBERS

**Marcel A. Behr**

#### Grants in 2020

**2020-2021** CFI Exceptional Opportunities Fund – COVID-19 (Universities) Containment Level 3, PI; \$1 060 682 Matching Government of Quebec \$809,794, In-kind \$378,951, total of \$2,249,427

#### Publications in 2020

1. Danchuk S, McIntosh F, Jamieson FB, May K, Behr MA. Bacillus Calmette-Guérin strains with defined resistance mutations: a new tool for TB lab quality control. *Clinical Microbiology and Infection*, 2020 Mar; 26(3): 384.e5-384.e8
2. Duffy SC, Srinivasan S, Schilling MA, Stuber T, \*Danchuk SN, Michael JS, Venkatesan M, Bansal N, Maan S, Jindal N, Chaudhary D, Dandapat P, Katani R, Chothe S, Veerasami M, Robbe-Austerman S, Juleff N, Kapur V, Behr MA. Reconsidering Mycobacterium bovis as a proxy for zoonotic tuberculosis: a molecular epidemiological surveillance study. *Lancet Microbe*. 2020 Jun;1(2):e66-e73. doi: 10.1016/S2666-5247(20)30038-0.
3. Ghanem M, \*Dube JY, Wang J, McIntosh F, Houle D, Domenech P, Reed MB, Raman S, Buter J, Minnaard AJ, Moody DB, Behr MA. Heterologous production of 1-tuberculosinyladenosine in Mycobacterium kansasii models pathoevolution towards the transcellular lifestyle of Mycobacterium tuberculosis. *mBio*. 2020 Oct 20;11(5):e02645-20. doi: 10.1128/mBio.02645-20.

#### Other – media, awards

2020 Dr. John M. Embil Mentorship Award in Infectious Diseases, Association of Medical Microbiology and Infectious Disease Canada

**Andrea Benedetti**

#### Grants in 2020

#### As PI or NPI:

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Op Gr: COVID-19 MH & Substance Use - Understanding Rapid System Transformations	Andrea Benedetti Brett Thombs	Identifying Effective Mental Health Interventions and Populations in Need: A COVID-19 Living Systematic Review	\$199,836	1 yr 0 mth	2020
Operating Grant: Knowledge Synthesis: COVID-19 in Mental Health & Substance Use	Andrea Benedetti Brett Thombs	Mental Health during the COVID-19 Pandemic: A Living Systematic Review of Mental Health Burden, Factors Associated with Mental Health Outcomes, and Intervention Effectiveness in the General Population and Vulnerable Populations	\$50,000	1 yr 0 mth	2020
Op Grant: Data Analysis - Reproductive,	Andrea Benedetti Brett Thombs	Depression Trajectories in Pregnant and Postpartum Women: An Individual Participant Data Meta-Analysis	\$82,319	1 yr 0 mth	2020



As CO-PI: all 2020 (not missing any info on last column so don't worry if it's cut off)

CIHR Program	PI	Co-Investigators	Title	Amount	Term (years)	Start Year
Project Grant	Azuolos, Ilan ; Baglolle, Carolyn	Benedetti, Andrea ; Gallouzi, Imed	Prognostic and Therapeutic Utility of Human Antigen R (HuR) in Fibrosis	\$184,163	5.0	2020
Project Grant	Eisenberg, Mark Jeffrey	Benedetti, Andrea ; Fillion, Kristian Bellevue; Gore, Genevieve ; Grad, Roland Michael; O'Loughlin, Jennifer Lee; Thombs, Brett David; Windle, Sarah B	Youth and E-Cigarettes: A Knowledge Synthesis	\$114,750	1.5	2020
Catalyst Grant: Health Effects of Vaping	Eisenberg, Mark Jeffrey; Mischki, Trevor	Abramovici, Hanan ; Benedetti, Andrea ; Ells, Carolyn Norine; Fillion, Kristian Bellevue; Gershon, Andrea Sara; Gore, Genevieve ; Grad, Roland Michael; Thombs, Brett David	Vaping Safety: A Knowledge Synthesis	\$99,984	1.0	2020

Publications in 2020

1. [Chest x-ray analysis with deep learning-based software as a triage test for pulmonary tuberculosis: a prospective study of diagnostic accuracy for culture-confirmed disease.](#) Khan FA, Majidulla A, Tavaziva G, Nazish A, Abidi SK, **Benedetti A**, Menzies D, Johnston JC, Khan AJ, Saeed S. *Lancet Digit Health.* 2020 Nov;2(11):e573-e581. doi: 10.1016/S2589-7500(20)30221-1. Epub 2020 Oct 19. PMID: 33328086
2. [Health System Costs of Treating Latent Tuberculosis Infection With Four Months of Rifampin Versus Nine Months of Isoniazid in Different Settings.](#) Bastos ML, Campbell JR, Oxlade O, Adjobimey M, Trajman A, Ruslami R, Kim HJ, Baah JO, Toelle BG, Long R, Hoepfner V, Elwood K, Al-Jahdali H, Apriani L, **Benedetti A**, Schwartzman K, Menzies D. *Ann Intern Med.* 2020 Aug 4;173(3):169-178. doi: 10.7326/M19-3741. Epub 2020 Jun 16. PMID: 32539440
3. [Drug-associated adverse events in the treatment of multidrug-resistant tuberculosis: an individual patient data meta-analysis.](#) Lan Z, Ahmad N, Baghaei P, Barkane L, **Benedetti A**, Brode SK, Brust JCM, Campbell JR, Chang VWL, Falzon D, Guglielmetti L, Isaakidis P, Kempker RR, Kipiani M, Kuksa L, Lange C, Laniado-Laborin R, Nahid P, Rodrigues D, Singla R, Udawadia ZF, Menzies D; Collaborative Group for the Meta-Analysis of Individual Patient Data in MDR-TB treatment 2017. *Lancet Respir Med.* 2020 Apr;8(4):383-394. doi: 10.1016/S2213-2600(20)30047-3. Epub 2020 Mar 17. PMID: 32192585
4. [Treatment with isoniazid or rifampin for latent tuberculosis infection: population-based study of hepatotoxicity, completion and costs.](#) Ronald LA, FitzGerald JM, Bartlett-Esquilant G, Schwartzman K, **Benedetti A**, Boivin JF, Menzies D. *Eur Respir J.* 2020 Mar 20;55(3):1902048. doi: 10.1183/13993003.02048-2019. Print 2020 Mar. PMID: 31980498
5. [Standardised shorter regimens versus individualised longer regimens for rifampin- or multidrug-resistant tuberculosis.](#) Abidi S, Achar J, Assao Neino MM, Bang D, **Benedetti A**, Brode S, Campbell JR, Casas EC, Conradie F, Dravniec G, du Cros P, Falzon D, Jaramillo E, Kuaban C, Lan Z, Lange C, Li PZ, Makhmudova M, Maug AKJ, Menzies D, Migliori GB, Miller A, Myrzaliev B, Ndjeka N, Noeske J, Parnieva N, Piubello A, Schwoebel V, Sikhondze W, Singla R, Souleymane MB, Trébuq A, Van Deun A, Viney K, Weyer K, Zhang BJ, Ahmad Khan F. *Eur Respir J.* 2020 Mar 20;55(3):1901467. doi: 10.1183/13993003.01467-2019. Print 2020 Mar. PMID: 31862767

More pubs: <https://pubmed.ncbi.nlm.nih.gov/?term=andrea%20benedetti&filter=years.2020-2020&sort=pubdate&page=4>

## Paul Brassard

### Grants in 2020

Source: Alzheimer Society of Canada Research Program-Proof of Concept Grant

Title: Infectious Diseases Burden and Risk of Dementia

Applicants: P Brassard (Principal Investigator)

Amount/Term: \$99,948/2020-2021

### Publications in 2020

1. Tratt, E\*. Sarmiento, I., Gamelin, R. Nayoumealuk J, Andersson N, Brassard P\*\*. Fuzzy cognitive mapping with Inuit women: what needs to change to improve cervical cancer screening in Nunavik, northern Quebec? *BMC Health Serv Res* 20, 529 (2020) June (IF 1.932). <https://doi.org/10.1186/s12913-020-05399-9>.
2. Verdon C, Reinglas J, Filliter C, Coulombe J, Gonczi L, Afif W, Wild G, Seidman EG, Bitton A, Bessissow T, Brassard P, Lakatos PL. No change in surgical and hospitalisation trends despite higher exposure to anti-tumour necrosis factor in Inflammatory Bowel Disease in the Québec provincial database from 1996 – 2015. *Inflamm Bowel Dis* (IF 4.347) 2021 May; 27(5):655–661. <https://doi.org/10.1093/ibd/izaa166>
3. Verdon C, Reinglas J, Filliter C, Coulombe J, Gonczi L, Afif W, Wild G, Seidman EG, Bitton A, Bessissow T, Brassard P, Lakatos PL Increased prevalence but not incidence of myocardial infarction and stroke in patients with inflammatory bowel diseases in Quebec in 1996–2015. *J Crohns Colitis*. (IF 7.827) 14(S1):S082-S085, January 2020. DOI: 10.1093/ecco-jcc/jjz203.084
4. Zahreddine M, Mayrand MH, Therrien C, Trevisan A, Dagenais C, Monnier P, Laporte L, Niyibizi J, Deshaies C, Carceller AM, Fraser W, Brassard P, Lacroix J, Bédard MJ, Girard I, Audibert F, Coutlée F, Trottier H. Antibodies to human papillomavirus types 6, 11, 16 and 18: vertical transmission and clearance in children up to two years of age. *The Lancet-EClinical Medicine (ECM)*, April 2020, DOI: 10.1016/j.eclinm.2020.100334
5. Aibibula W\*, Cox J, Hamelin AM, Klein MB, and Brassard P. The Mediating Role of Depressive Symptoms in the Association between Food Insecurity and HIV Related Health Outcomes among HIV- HCV Co-Infected People. *AIDS Behav* (IF 2.908) 2020 Jul;24(7):2188-2194. doi: 10.1007/s10461-020-02784-7. PMID: 31950306
6. Styffe, C\*, Tratt, E, Macdonald, M.E, Brassard, P. HPV Self-sampling in Indigenous Communities: A Scoping Review. *J Immigrant Minority Health* 22, 852–859 (2020) June. <https://doi.org/10.1007/s10903-019-00954-x> (IF 1.314)
7. Hart L, Chavannes M, Kherad O, Meadler C, Mourad N, Marcus V, Afif W, Bitton A, Lakatos PL, Brassard P, Bessissow T. Fecal calprotectin predicts endoscopic and histologic activity in clinically quiescent ulcerative colitis. *J Crohns Colitis*. (IF 7.827) 2020 Jan 1;14(1):46-52. doi: 10.1093/ecco-jcc/jjz107.

## Amrita Daftary

Publications in 2020 (fellow MTB colleagues highlighted with an Asterix, higher impact papers highlighted in blue)

1. Daftary A, Viens A. Solidarity in Global Health Research—Are the Stakes Equal? *Am J Bioeth*. 2020; 5: 59-62.
2. Sulis G, Daniels B, Kwan A, Gandra S, Daftary A\*, Das J, Pai M\*. Antibiotic overuse in the primary health care setting: a secondary data analysis of standardised patient studies from India, China and Kenya. *BMJ Glob Health*. 2020; 5: e003393.
3. Sulis G, Pierick A, Nafade V, Gore G, Daniels B, Daftary A\*, Das J, Gandra S, Pai M\*. Antibiotic prescription practices in primary care in low- and middle-income countries: a systematic review and meta-analysis. *PLOS Med*. 2020; 17: e1003139.
4. Daftary A, Furin J, Zelnick JR, Venkatesan N, Steingart K, Smelyanskaya M, Seepamore B, Schoeman I, Reid M, Padayatchi N, O'Donnell MR, Mistry N, McKenna L, Mahbub T, Macdonald H, Loveday M, Law S, LaCourse SM, Jaramillo E, Janssen R, Hirsch-Moverman Y, Friedland G, Creswell J, Chorna Y, Chikovore J, Brigden G, Boffa J, Boehme C, Atre S, Amico KR, Acquah R, Engel N. TB and women: a call to action. *Int J Tuberc Lung Dis*. 2020; 24: 1312-15.
5. Zelnick J, Daftary A, Hwang C, Labar A, Boodhram R, Maharaj B, Wolf A, Mondal S\*, Amico KR, Orrell C, Seepamore B, Friedland G, Padayatchi N, O'Donnell M. Electronic dose monitoring identifies a high-risk subpopulation in the treatment of drug-resistant tuberculosis and HIV. *Clin Infect Dis*. 2020; ciaa1557.

## Guideline contributions

WHO Consolidated Guidelines on Tuberculosis. Module 4: Treatment - Drug-Resistant Tuberculosis Treatment. Global TB Programme, World Health Organization, Jun 2020. Contribution by Daftary A: Evidence reviewer , behavioural expert ( lead - *Qualitative study of patient perspectives on DR-TB treatment* )

## **Nandini Dendukuri**

### Publications in 2020

[Latent class analysis and the need for clear reporting of methodology.](#)

MacLean E, **Dendukuri N**. *Clin Infect Dis*. 2020 Aug 6:ciaa1131

## **Maziar Divangahi - Associate Director**

### Publications in 2020

Khan N, Downey J, Sanz J, Kaufmann E, Blankenhaus B, Pacis A, Pernet E, Ahmed E, Cardoso S, Nijnik A, Mazer B, Sassetti C, Behr MA, Soares MP, Barreiro LB, Divangahi M. M. tuberculosis Reprograms Hematopoietic Stem Cells to Limit Myelopoiesis and Impair Trained Immunity. *Cell*. 2020 Oct 29;183(3):752-770.e22. doi: 10.1016/j.cell.2020.09.062. PMID: 33125891

### Other – media, awards

Became a member of the Royal Society of Canada

## **Christina Greenaway**

### Grants in 2020

#### **Canadian Institutes of Health Research (CIHR)**

“Real-world effectiveness and cost-effectiveness of novel hepatitis C treatments” PI: Tadrous M, Antoniou T, Wong WW  
Co-investigators: Feld J, Gomes T, Greenaway C, Guertin J, Janjua N, Kwong J, Mamdani M, Sander B, Schwartz K.  
Role: Co-Investigator \$324,455  
04/2020-04/2022

#### **Canadian Institutes of Health Research (CIHR)**

“Towards eliminating viral hepatitis - Addressing hepatitis B using a multidisciplinary approach”  
PI: Wong WW, Sander B  
Co-investigators: Feld J, Feng Z, Greenaway C, Hamadeh A,  
Janjua N, Koka K, Krahn M, Lee K, Lee S, Martel-Laferrrière V, Murti M.  
Role: Co-Investigator  
\$100,000  
04/2020-04/2021

#### **McGill Interdisciplinary Initiative in Infection and Immunity (MI4) “MI4 Clinical Research Platform (MI4 CRP)”**

PI: Greenaway C  
Role: PI  
\$240,390  
4/2020-01/2021

#### **MEDTEQ (FSISSS)**

“Montréal sans HepC: Des trajectoires de soins innovantes pour améliorer le diagnostic et le traitement de l'hépatite C dans les milieux de première ligne et communautaires”  
NPI: Klein M. Co-PI's: Greenaway C, Bruneau J  
Role: PI  
\$370,000  
07/2020-07/2022

### **McGill Interdisciplinary Initiative in Infection and Immunity (MI4)**

“Sociocultural Diversity, Health Communication, and COVID-19”

PI: Cécile Rousseau

Co-investigators: Greenaway C, Frounfelker R, Miconi D, Venkatesh V, Jaimes A, Cénat JM

Role: Co-Investigator

\$70,000

05/2020-10/2020

### **St Justine Foundation, Fonds de Recherche en Santé de Québec**

A Randomized Open-Label Trial of CONvalescent Plasma for Hospitalized Adults With Acute COVID-19 Respiratory Illness (CONCOR-1)

Co-Lead Principal-Investigators: Dr. Philippe Bégin and Dr. Donald Arnold

Role: JGH PI: Greenaway C

\$65,150

05/2020-04/2021

### **Jewish General Hospital Foundation**

“COVID-19 Intervention Studies”

Role PI: Greenaway C

\$130,000

05/2020-04/2021

### Publications in 2020

1. Greenaway C, Greenwald ZR, Akaberi A, Song A, Passos-Castilho AM, Abou-Chakra NC, Palayew A, Alabdulkarim B, Platt R, Azoulay L, Brisson M, Quach C. Epidemiology of varicella among immigrants and non-immigrants in Quebec, Canada, before and after the introduction of childhood varicella vaccination: a retrospective cohort study. *Lancet Infect Dis.* 2021 Jan;21(1):116-126. Published online July 23, 2020. (Impact Factor: 24.446).
2. Buonfrate D, Bisanzio D, Giorli G, Odermatt P, Fuerst T, Greenaway C, French MD, Reithinger R, Gobbi F, Montresor A, Bisoffi Z. The global prevalence of *Strongyloides stercoralis* infection. *Pathogens.* 2020 Jun 13;9(6):468. (Impact Factor: 6.218)
3. Noori T, Hargreaves S, Greenaway C, van der Werf M, Driedger M, Morton RL, Hui C, Requena-Mendez A, Agbata E, Myran DT, Pareek M, Campos-Matos I, Nielsen RT, Semenza J, Nellums LB, Pottie K; ECDC ad hoc scientific panel. Strengthening screening for infectious diseases and vaccination among migrants in Europe: What is needed to close the implementation gaps? *Travel Med Infect Dis.* 2021; 39:101715. Published online May 7, 2020. (Impact Factor: 4.589)
4. Greenaway C, Hargreaves S, Barkati S, Coyle C, Gobbi F, Veizis A, Douglas P. COVID-19: Exposing and addressing health disparities among ethnic minorities and migrants. *J Travel Med.* 2020 Nov 9;27(7):taaa113. (Impact Factor: 7.089)
5. \*Diefenbach-Elstob T, Alabdulkarim B, Deb-Rinker P, Pernica J, Schwarzer G, Menzies D, Shrier I, Schwartzman K, Greenaway C. Risk of latent and active tuberculosis infection in travellers: a systematic review and meta-analysis. *J Travel Med.* 2021 Jan 6;28(1):taaa214. Published online Nov 19, 2020. (Impact Factor: 7.089)

### Other – media, awards

#### **Students:**

Post doctoral fellow Dr. Tanya Diefenbach-Elstob, was awarded a two year FRQS Post-doctoral fellowship (May 2020-April 2022) for her project entitled “Tuberculosis in the immigrant population in Quebec: using administrative data to inform elimination policy in Canada”.

#### **International Guidelines:**

Named as the only non-European on the Scientific Advisory committee (in October 2020) for the European Centre for Disease Prevention and Control (ECDC) report on:

“Reducing COVID-19 exposure and strengthening vaccine uptake among migrant populations in EU/EEA countries and the UK”. European Centre for Disease Prevention and Control (ECDC)– April 2021. Stockholm; 2021.

## Philippe Gros

### Grants in 2020

**Title of grant:** “Surface Plasmon Resonance and Isothermal Titration Calorimetry to Investigate USP15 Inhibitors as Novel Anti-Inflammatory Drugs”

Source: Ministère de l’Economie et de l’Innovation (QC)/McGill U.

Amount Awarded: \$82,000.

Dates of Approved Project: 10/2020-10/2021

Name of P.I: Philippe Gros

### Publications in 2020

1. Olivier, JF., Fodil, N., Al Habyan, S., Gopal A., Artusa P., Mandl, JN., McCaffrey, L., and Gros, P. “Ccdc88b is required for mobility and inflammatory function of dendritic cells” *J. Leukocyte Biology* 108(6):1787-1802, 2020. PMID: 32480428.
2. Yang, R, Mele, F., Worley, L., Langlais, D, Rosain, J., Elarabi,H., Croft, C., Zhang, P., Payne, K., Latorre, D., Jarrossay, D., Doisne, J-M., Benhsaien, I., Weisshaar, M., Shen, Y., Han, J., Du, L., Ye, X., Gruber, C., Markle, J., Al Ali, F., Rahman, M., Seeleuthner, Y., Kerner, G., Husquin, LT., Maclsaac, JL., Jeljeli, M., Ailal, F., Kobor, MS., Oleaga-Quintas, C., Roynard, M., Bourgey , M., Boisson-Dupuis, S., Anne Puel, A., Batteux, F., Rozenberg, F., Marr, N., Pan-Hammarström, Q., Bogunovic, D., Quintana-Murci, L., Carroll, T., Ma, CS., Abel, L., Bousfiha,A., Santo, JD., Glimcher, LH., Gros, P., Tangye, SG., , Sallusto, F., Bustamante, J. and Casanova, JL. “Human T-bet governs both innate and adaptive anti-mycobacterial IFN-g immunity” *Cell*. 183:1-22, 2020. PMID: 33296702
3. Xu, G., van Bruggen, R., Gualtieri, CO., Moradin,N., Bassenden, A., Lu,W., Tam, M., , Lesage, S., Girouard, H., Avizonis, DZ., Deblois, G., Prchal, JT., Stevenson, MM., Berghuis, A., Muir, T., Rabinowitz, J.Vidal, S., Fodil, N. and Gros, P. “Bisphosphoglycerate Mutase Deficiency Protects Against Malaria” *Cell Reports* 32(12):108170, 2020 [PMID: 32966787].
4. Kennedy, J., M., Georges, A., Bassenden, AV., Vidal, SM., Berghuis, AM., Taniuchi, I., Majewski, J., Lathrop, M., Behr, MA., Langlais, D. and Gros, P. “Zbtb7b (ThPOK) is required for pathogenesis of cerebral malaria, and protection against pulmonary tuberculosis” *Infect. Immun* 88 (2), e00845-19, 2020 PMID: 31792077.
5. Salem, S., Salem, D. and Gros, P. “Role of irf8 in immune cells functions, protection against infections and susceptibility to inflammatory diseases” *Human Genetics*, 139(6-7):707-721; 2020 [PMID:32232558].

## James Johnston

### Publications in 2020

1. How well does TSTin3D predict risk of active tuberculosis in the Canadian immigrant population? An External Validation Study JH Puyat, HP Shulha, R Balshaw, JR Campbell, S Law, R Menzies, ...*Clinical Infectious Diseases*  
Role: last author/corresponding author  
Impact: validated a widely-used existing risk calculator from co-investigator Menzies.  
Cardiovascular disease: the forgotten cousin of post-TB health? CA Basham, K Romanowski, JC Johnston. *The International Journal of Tuberculosis and Lung Disease* 24 (4), 466-467. Part of a series of articles from our group highlighting the need for post-TB care and guidelines. Now part of a group developing international post-TB guidance.
2. Effectiveness of Latent TB Screening and Treatment in People Initiating Dialysis in British Columbia, Canada. K Romanowski, C Rose, VJ Cook, I Sekirov, M Morshed, O Djurdjev...Johnston JC. *Canadian journal of kidney health and disease* 7, 2054358120937104  
Impact: part of a series of articles from our group examining the risk of TB and impact of LTBI therapy in dialysis populations. Led to local guideline change (new provincial protocols) and several jurisdictions following our recommendations re: routine screening and treatment of dialysis patients.

### Policy contributions (WHO guidelines, reports, etc.)

Associate editor TB standards. Lead author on 2 chapters of TB standards.

## Faiz Ahmad Khan - Associate Director

### Publications in 2020

1. Bastos ML, Tavaziva G, Abidi SK, Campbell JR, Haraoui LP, Johnston JC, Lan Z, Law S, MacLean E, Trajman A, Menzies D. Diagnostic accuracy of serological tests for covid-19: systematic review and meta-analysis. *bmj*. 2020 Jul 1;370.
2. Khan FA, Majidulla A, Tavaziva G, Nazish A, Abidi SK, Benedetti A, Menzies D, Johnston JC, Khan AJ, Saeed S. Chest x-ray analysis with deep learning-based software as a triage test for pulmonary tuberculosis: a prospective study of diagnostic accuracy for culture-confirmed disease. *The Lancet Digital Health*. 2020 Nov 1;2(11):e573-81.

### Other – media, awards

Policy contributions (WHO guidelines, reports, etc.)- Evidence Reviewer for WHO Guidelines on TB Screening

## Simon Grandjean Lapierre

### Grants in 2020

#### FRQS Competition Results 2021-2022

**Simon Grandjean Lapierre** received an FRQ for his work titled "Approches innovantes en tuberculose - Épidémiologie moléculaire et acoustique pour augmenter la détection de cas, mieux comprendre la transmission et guider le déploiement des services".

#### 2020-2021- Patrick J. McGovern Foundation

Artificial intelligence and data in the COVID response – Exceptional funding opportunity

\$300,000 USD

### Publications in 2020

1. Knoblauch AM, Grandjean Lapierre S, Randriamanana D, Raherison MS, Rakotoson A, Rahoiljaona BS, Ravaoarimanga M, Ravololonandriana PE, Rabodoarivelo MS, Ratsirahonana O, Rakotomanana F, Razafindranaivo T, Rasolofo V, Rakotosamimanana N. "Multidrug-resistant tuberculosis surveillance and cascade of care in Madagascar: a five-year (2012-2017) retrospective study." *BMC Med*. 2020 Jun 30;18(1):173. doi: 10.1186/s12916-020-01626-6. PMID: 32600414
2. Bahrainwala L, Knoblauch AM, Andriamiadanarivo A, Diab MM, McKinney J, Small PM, Kahn JG, Fair E, Rakotosamimanana N, Grandjean Lapierre S. "Drones and digital adherence monitoring for community-based tuberculosis control in remote Madagascar: A cost-effectiveness analysis." *PLoS One*. 2020 Jul 7;15(7):e0235572. doi: 10.1371/journal.pone.0235572. eCollection 2020. PMID: 32634140

## Dick Menzies – Director

### Grants in 202

#### 2020-2027 - "Canada Research Chair in TB Research" Role: PI

CRC - \$1,400,000

#### 2020-2030 - "Tuberculosis Trials Consortium Clinical Research Services (TBTC)" Role: PI

CDC - \$17,200,000

#### 2020 "Assessing costs and benefits of different testing strategies for COVID-19 in Canada"

Role: PI

MI4 - \$86,000

#### 2020 "Germicidal ultraviolet light to disinfect personal protective equipment to reduce nosocomial transmission of COVID-19" Role: CoPI with Dr Selena Sagan

MI4 - \$76,000

#### 2020 "Testing essential workers for COVID-19 in Montreal North" Role: CoPI with Dr Jonathon Campbell

Trottier Family - \$74,000

## Publications in 2020

1. Bastos ML, Campbell JR, Oxlade O, Adjobimey M, Trajman A, Ruslami R, Kim HJ, Obeng J, Toelle BG, Long R, Hoepfner V, Elwood K, Al-Jahdali H, Apriani L, Benedetti A, Schwartzman K, Menzies D. "Health System Costs of Treating Latent Tuberculosis Infection With Four Months of Rifampin Versus Nine Months of Isoniazid in Different Settings." *Annals of Internal Medicine*. 2020 Aug 4;173(3):169-178. doi: 10.7326/M19-3741. PMID: 32539440
2. Lan Z, Ahmad N, Baghaei P, Barkane L, Benedetti A, Brode SK, Brust JCM, Campbell JR, Chang VWL, Falzon D, Guglielmetti L, Isaakidis P, Kempker RR, Kipiani M, Kuksa L, Lange C, Laniado-Laborin R, Nahid P, Rodrigues D, Singla R, Udawadia ZF, Menzies D; Collaborative Group for the Meta-Analysis of Individual Patient Data in MDR-TB treatment 2017. "Drug-associated adverse events in the treatment of multidrug-resistant tuberculosis: an individual patient data meta-analysis." *Lancet Respir Med*. 2020 Apr;8(4):383-394. doi: 10.1016/S2213-2600(20)30047-3. Epub 2020 Mar 17. PMID: 32192585
3. Campbell JR, Al-Jahdali H, Bah B, Belo M, Cook VJ, Long R, Schwartzman K, Trajman A, Menzies D. "Safety and Efficacy of Rifampin or Isoniazid Among People with Mycobacterium tuberculosis Infection and Living with HIV or Other Health Conditions: Post-Hoc Analysis of Two Randomized Trials." *Clin Infect Dis*. 2020 Aug 12;ciaa1169. doi: 10.1093/cid/ciaa1169. PMID: 32785709

## **Momar Ndao**

### Grants in 2020

#### **2020 – MI4 ECRF MUHC FOUNDATION**

COVID-19 Vaccines - Novel Approaches to Tackle a Novel Disease

Principal Investigator; Co-PI: M. Reed

\$97,000

#### **2020 – MI4 ECRF MUHC FOUNDATION**

Specificity of SARS-CoV-2 serological assays among sera from patients with blood-borne parasites associated with hypergammaglobulinaemia

Principal Investigator; Co-PI: G. Malashewski; M. P. Cheng; C Yansouni

\$35,000

#### **2020-2023 - MI4 Program Platform**

Development and establishment of proactive surveillance tools for emerging vector-transmitted diseases in Quebec

Principal Investigator M Ndao; Co-PIs: M. Olivier; D. Langlais; C Prada

\$115,000/yr

### Publications in 2020

1. Perera DJ, Hassan AS, Jia Y, Ricciardi A, McCluskie MJ, Weeratna RD, Ndao M. Adjuvanted Schistosoma mansoni-Cathepsin B Vaccines Provide Protection in a Pre-Clinical Schistosomiasis Model. *Frontiers Immunology*. 2020 Nov 16;11:605288. doi: 10.3389/fimmu.2020.605288. eCollection 2020. PMID: 33304354
2. Golizeh M, Kaitlin Winter K, Landekic M, Roussel L, Loo V, Ndao M\*, Vinh DC\*. Fecal host biomarkers in Clostridioides difficile infection. *JCI Insight*, 2021 Jan 11;6(1):e142976.doi: 10.1172/jci.insight.142976.

## **Olivia Oxlade - Associate Director**

### Publications in 2020

1. [Effectiveness and cost-effectiveness of a health systems intervention for latent tuberculosis infection management \(ACT4\): a cluster-randomised trial.](#)  
**Oxlade O**, Benedetti A, Adjobimey M, Alsdurf H, Anagonou S, Cook VJ, Fisher D, Fox GJ, Fregonese F, Hadisoemarto P, Hill PC, Johnston J, Khan FA, Long R, Nguyen NV, Nguyen TA, Obeng J, Ruslami R, Schwartzman K, Trajman A, Valiquette C, Menzies D. *Lancet Public Health*. 2021 Mar 19:S2468-2667(20)30261-9. doi: 10.1016/S2468-2667(20)30261-9. Online ahead of print.
2. [Framework for the evaluation of new tests for tuberculosis infection.](#)



Hamada Y, den Boon S, Maria Cirillo D, Penn-Nicholson A, Ruhwald M, Menzies D, **Oxlade O**, Falzon D, Kanchar A, Korobitsyn A, Zignol M, Matteelli A, Kasaeva T. *Eur Respir J*. 2021 Jan 21:2004078. doi: 10.1183/13993003.04078-2020. Online ahead of print. PMID: 33479110

3. [Active testing of groups at increased risk of acquiring SARS-CoV-2 in Canada: costs and human resource needs.](#) Campbell JR, Uppal A, **Oxlade O**, Fregonese F, Bastos ML, Lan Z, Law S, Oh CE, Russell WA, Sulis G, Winters N, Yanes-Lane M, Brisson M, Laszlo S, Evans TG, Menzies D. *CMAJ*. 2020 Oct 5;192(40):E1146-E1155. doi: 10.1503/cmaj.201128. Epub 2020 Sep 9. PMID: 32907820
4. [Health System Costs of Treating Latent Tuberculosis Infection With Four Months of Rifampin Versus Nine Months of Isoniazid in Different Settings.](#) Bastos ML, Campbell JR, **Oxlade O**, Adjobimey M, Trajman A, Ruslami R, Kim HJ, Baah JO, Toelle BG, Long R, Hoepfner V, Elwood K, Al-Jahdali H, Apriani L, Benedetti A, Schwartzman K, Menzies D. *Ann Intern Med*. 2020 Aug 4;173(3):169-178. doi: 10.7326/M19-3741. Epub 2020 Jun 16. PMID: 32539440

### **Madhukar Pai - Associate Director**

- 2 or 3 publications from 2020:
  - [Antibiotic prescription practices in primary care in low- and middle-income countries: A systematic review and meta-analysis](#): This paper highlights the need for urgent action to improve prescription practices, starting from the integration of WHO treatment recommendations and the AWaRe classification into national guidelines.
  - [Quality of tuberculosis care in the private health sector](#): There is increasing evidence that quality of TB care in the private sector falls short of international standards in many places and urgently needs improvement. Despite recent significant increases in private TB notifications, especially in India, Indonesia and the Philippines, the gap between notification and the extension of quality program services for provision of treatment and care appears to be growing.
  - [Advances in Molecular Diagnosis of Tuberculosis](#): This paper reviews recent advances and developments in molecular tests for detecting TB as well as anti-TB drug resistance.
- Policy contributions
  - [WHO consolidated guidelines on tuberculosis Module 3: Diagnosis - Rapid diagnostics for tuberculosis detection](#): guidelines, contribution from Madhu/his team
  - [Putting health in their hands: testing and women's empowerment mean better health for all](#): report, contribution from Madhu/his team
  - [The impact of COVID-19 on the TB epidemic: a community perspective](#): report, contribution from Madhu/his team
- Prizes and special awards as a result of MITBC activities
  - [2020 Stop TB Community Award](#)
  - CIHR Frederick Banting and Charles Best Canada Graduate Scholarship doctoral award (Lena Faust, doctoral trainee)
  - [Margaret R. Becklake Fellowship in Respiratory Research Fellowship](#) (Mikashmi Kohli, MSc trainee)
  - CIHR 2020 Canada Graduate Scholarship MSc award (Paulami Sen, MSc trainee)
- Media (citations and interviews)
  - Forbes, 29 January 2020
  - Forbes, 17 February 2020
  - Forbes, 1 March 2020
  - Forbes, 6 March 2020
  - Forbes, 8 March 2020
  - Forbes, 17 March 2020
  - Forbes, 29 March 2020
  - Forbes, 6 April 2020
  - Forbes, 12 April 2020



- Forbes, 22 April 2020
- Forbes, 1 May 2020
- Forbes, 3 June 2020
- Forbes, 13 July 2020
- Forbes, 20 July 2020
- Forbes, 26 July 2020
- Forbes, 9 August 2020
- BBC India, 25 August 2020 ([interview on TB and COVID-19](#))
  
- NDTV, 8 September 2020 ([interview about how Canada has dealt with the pandemic, COVID-19 reinfection, and the situation in India](#))
  
- Forbes, 26 September 2020
- Forbes, 22 October 2020
- Forbes, 9 November 2020
- New York Times, 20 November 2020
- Forbes, 30 November 2020
- The Atlantic, 14 December 2020

At the start of the pandemic, to counter the media hype, misinformation and confusion around BCG vaccination for COVID-19 (currently unproven to have any protection), Madhu and his team have published a series of op-eds and media interviews:

- [Universal BCG vaccination and protection against COVID-19: critique of an ecological study](#) (Nature Microbiology)
- [BCG against Coronavirus: Less hype and more evidence, please](#) (Forbes)
- [Why a decades-old TB vaccine is getting attention in the fight against Covid-19](#) (Stat News)
- [Does the BCG vaccine work against coronavirus? We just don't know](#) (Wired)
- [No proof yet that BCG benefits against coronavirus, says expert](#) (Q&A in The Hindu)
- [Gender & COVID-19: why diversity is critical to solving global health emergencies](#) (WomenLift webinar)
- [An old vaccine vs. COVID-19](#) (The Take, by Al Jazeera)
- [A skeptic's guide to ecologic studies during a pandemic](#) (Forbes)
- [The coronavirus pandemic: impact of the lockdown on tuberculosis care](#) (Podcast from the Centre for Policy Research)

Madhu also wrote about '[Covidisation](#)' of academic research in Nature Microbiology. The ongoing COVID-19 pandemic has inspired a flood of research activities, special funding opportunities, and potential career paths. But this 'Covidisation' can come at the risk of undermining other areas of research and scholarship.

Other quotes and citations of interest:

- [Among the most vulnerable to coronavirus: The tens of millions who carry HIV and tuberculosis](#) (Washington Post)
- [Is BCG effective against coronavirus?](#) (India today)
- [Study that suggests BCG vaccine may protect against Covid-19 is flawed – TB experts](#) (BizNews)
- [After the pandemic: How will COVID-19 transform global health and development?](#) (Devex)
- [Can BCG vaccine protect against Covid-19? Here's why the excitement needs to be tempered](#) (ThePrint)
- [Considering BCG vaccination to reduce the impact of COVID-19](#) (The Lancet)

And lastly, Madhu was awarded 2 grants related to COVID-19:

- [Validation of rapid, molecular testing for COVID-19 and integration with TB diagnostics](#)  
**Granting Agency** CIHR (Canadian Institutes of Health Sciences) & IDRC (International Development Research Centre)  
**Period** 1 Aug. 2020 – 31 July 2021  
**Amount** \$421,479 CAD
  
- [COVID Impact on Private Health Markets](#)  
**Granting Agency** Bill & Melinda Gates Foundation  
**Period** 22 September 2020 – 31 March 2022  
**Amount** \$1,227,508 USD

## Michael B. Reed

### Grants in 2020

1. Quebec Respiratory Health Network (RHN): Team Projects Competition  
Role: Co-PI with Dr. Frederic Veyrier, INRS, Laval (Quebec); Total Amount: \$30,000  
New Targets for Reversing Antimicrobial Resistance in Mycobacterium tuberculosis - A Discovery Based Approach
2. McGill Interdisciplinary Initiative in Infection and Immunity (MI4), Emergency COVID-19 Research Funding  
Role: Co P.I. with Dr. Momar Ndao (RI-MUHC), Total Amount: \$97,128  
COVID-19 Vaccines - Novel Approaches to Tackle a Novel Disease

### Publications in 2020

Ghanem M, Dubé J-Y, Wang J, McIntosh F, Houle D, Domenech P, Reed MB, Raman S, Buter J, Minnaard AJ, Moody DB & Behr MA (2020). Heterologous production of 1-tuberculosinyladenosine in Mycobacterium kansasii models pathoevolution towards the transcellular lifestyle of Mycobacterium tuberculosis. *mBio* 11(5): e02645-20.

## Erwin Schurr

### Publications in 2020

3. V.M. Fava, M. Dallmann-Sauer, E. Schurr Genetics of leprosy: today and beyond. *Hum. Genet.* 139:835-846, 2020
4. S.R. Bhatnagar, Y. Yang, T. Lu, E. Schurr, J.C. Loredó-Osti, M. Forest, K. Oualkacha, C.M.T. Greenwood Simultaneous SNP selection and adjustment for population structure in high dimensional prediction models, *PLoS Genet*, 4;16(5):e1008766, 2020
5. V.M. Fava, A. Cobat, C. Gzara, A. Alcais, L. Abel, E. Schurr Reply to Zhang et al: The differential role of LRRK2 variants in nested leprosy phenotypes, *Proc. Natl. Acad. Sci. USA*, 117(19):10124-10125, 2020
6. C. Gzara, M. Orlova, M. Dallmann-Sauer, N.V. Thuc, V.H. Thai, V.M. Fava, M.T. Bihoreau, A. Boland, L. Abel, A. Alcais, E. Schurr, A. Cobat Family-based genome-wide association study of leprosy in Vietnam, *PLoS Pathog*, 16(5):e1008565, 2020
7. M. Dallmann-Sauer, V.M. Fava, C. Gzara, M. Orlova, N.V. Thuc, V.H. Thai, A. Alcais, L. Abel, A. Cobat, E. Schurr The complex pattern of genetic associations of leprosy with class I and class II HLA alleles can be reduced to four amino acid positions. *PLoS Pathog*, 16(8):e1008818, 2020
8. E. E. Kroon, C. J. Kinnear, M. Orlova, S. Fischinger, S. Shin, S. Boolay, G. Walzl, A. Jacobs, R. J. Wilkinson, G. Alter, E. Schurr, E. G. Hoal and M. Möller An observational study identifying highly tuberculosis-exposed, HIV-1-positive but persistently TB, tuberculin and IGRA negative persons with M. tuberculosis specific antibodies in Cape Town, South Africa, *EBioMedicine*, 61: 103053, 2020
9. O. Meziane, S. Salahuddin, T. Pham, O. Farnos, A. Pagliuzza, R. Olivenstein, E. Thomson, M. Orlova, E. Schurr, P. Ancuta, N. Chomont, E.A. Cohen, M-A. Jenabian, C.T. Costiniuk HIV is seeded within pulmonary mucosal double negative T-cells in acute infection and persists during long-term effective ART in people living with HIV, *J. Virol.* JVI.01788-20, 2020
10. M.A. Behr, M. Divangahi, E. Schurr, Lessons from BCG for SARS-CoV-2 vaccine candidates, *J. Infect. Dis.* epub, Nov 30, 2020

## Kevin Schwartzman

### Grants in 2020

#### **CIHR 2020-2023**

*Tuberculosis in Canada: Modeling to inform elimination*  
\$416,924

### Publications in 2020

1. Campbell JR, Al-Jahdali H, Bah B, Belo M, Cook VJ, Long R, **Schwartzman K**, Trajman A, Menzies D. Safety and efficacy of rifampin or isoniazid among people with Mycobacterium tuberculosis infection and living with human immunodeficiency virus or other health conditions: Post hoc analysis of 2 randomized trials. *Clinical Infectious Diseases* 2020; ciaa169. Early on-line publication at <https://doi.org/10.1093/cid/ciaa1169>

- Bastos ML, Campbell JR, Oxlade O, Adjobimey M, Trajman A, Ruslami R, Kim HJ, Obeng Baah J, Toelle BG, Long R, Hoepfner V, Elwood K, Al-Jahdali H, Apriani L, Benedetti A, **Schwartzman K**, Menzies D. Health system costs of treating latent tuberculosis infection with four months of rifampin versus nine months of isoniazid in different settings. *Annals of Internal Medicine* 2020; 173: 169-178.
- Alsdurf H, Oxlade O, Adjobimey M, Ahmad Khan F, Bastos M, Bedingfield N, Benedetti A, Bofo D, Buu TN, Chiang L, Cook V, Fisher D, Fox GJ, Fregonese F, Hadisoemarto P, Johnston JC, Kassa F, Long R, Moayedi Nia S, Nguyen TA, Obeng J, Paulsen C, Romanowski K, Ruslami R, **Schwartzman K**, Sohn H, Strumpf E, Trajman A, Valiquette C, Yaha L, Menzies D. Resource implications of the latent tuberculosis cascade of care: a time and motion study in five countries. *BMC Health Services Research* 2020; 20: 341.
- Ronald LA, FitzGerald JM, Bartlett-Esquillant G, **Schwartzman K**, Benedetti A, Boivin JF, Menzies D. Treatment with isoniazid or rifampin for latent tuberculosis infection: population-based study of hepatotoxicity, completion and costs. *European Respiratory Journal* 2020; 55: 1902048.
- Trépanier M, Paradis T, Kouyoumdjian A, Dumitra T, Charlebois P, Stein BS, Liberman AS, **Schwartzman K**, Carli F, Fried GM, Feldman LS, Lee L. The impact of delays to definitive surgical care on survival in colorectal cancer patients. *Journal of Gastrointestinal Surgery* 2020; 24:115-122.

#### Editorials in 2020

- Trajman A, **Schwartzman K**. Improving diagnosis of tuberculosis in children. *Lancet Infectious Diseases* 2020; early on-line publication December 11, 2020 at [https://doi.org/10.1016/S1473-3099\(20\)30576-4](https://doi.org/10.1016/S1473-3099(20)30576-4)
- Cruz AT, **Schwartzman K**, Kitai I. Fighting a hidden epidemic: Expanding tuberculosis preventive treatment to the youngest household contacts. *Int J Tuberc Lung Dis* 2020; 24: 357-359.

#### **Frédéric J. Veyrier**

#### Grants in 2020

#### **FRQS Competition Results 2021-2022**

**Frédéric Veyrier** received an FRQ for his work titled "Évolution des Neisseria pathogènes et adaptation au nasopharynx humain".

#### **Alice Zwerling**

#### Publications in 2020

- A Zwerling. (2020). Understanding spending trends for tuberculosis. *Lancet Infectious Diseases*. 20(8):879-880.
- David W. Dowdy, Alice A. Zwerling, Andrea Stennett, Alexandra Searle, Vadim Dukhanin, Holly A. Taylors, and Maria W. Merritt. (2020). Measuring stigma to assess the social justice implications of health related policy decisions: application to novel treatment regimens for multi drug-resistant tuberculosis. *Medical Decision Making Policy & Practice*. 5(1): 1-8.
- G G Alvarez D. Van Dyk, R. Mallick, PhD, S. Lesperance, P. Demaio, S. Finn , S. Edmunds Potvin, M. Patterson, C. Pease, K. Amaratunga, C.Hui, D.W. Cameron, S. Mulpuru, S.D. Aaron, F. Momoli, A. Zwerling. (2020). The implementation of rifapentine and isoniazid (3HP) in two remote Arctic communities with a predominantly Inuit population, the Taima TB 3HP study. *International Journal of Circumpolar Health*. 79(1): 1-9.
- Hannah Alsdurf, Brianna Empringham, Alice Zwerling. (2020) Economic Evaluations of Active Case Finding: An Updated Systematic Review. World Health Organization Guideline Development Group meeting Dec. 7-18, 2020 (virtual meetings). \*\*\*\*WHO Updated guidelines published in March 2021\*\*\*\*
- Zwerling A, Naz S, Empringham B. (2020) Systematic Literature Review of Economic Evidence for Nucleic acid amplification tests (NAATs) to detect TB and DR-TB in adults and children. World Health Organization Guideline Development Group meeting July & September 2020 (virtual meetings).

## ASSOCIATE MEMBERS

### Luis Barreiro

#### Publications in 2020

Khan N, Downney J, Sanz J, Blankenhaus B, Kaufmann E, Pacis A, Pernet E, Ahmed E, Cardoso S, Nijnik A, Mazer B, Sassetti C, Behr M, Soares MP, Barreiro LB, Divangahi, M. (2020) M. tuberculosis reprograms HSCs to limit myelopoiesis and impair trained immunity. *Cell*. 29;183(3):752-770.e22 PMID: 33125891

### Anurag Bhargava

#### Grants in 2020

RATIONS study which is a cluster RCT supported by the Indian Council of Medical Research.  
2019-20: CD 715,000.

#### Publications in 2020

1. [Bhargava A](#), Bhargava M, Meher A. Universal Health Coverage and TB care in India in times of COVID-19: Aligning Ayushman Bharat (National Health Assurance Scheme) to improve case detection, reduce deaths and catastrophic health expenditure. *National Medical Journal of India*. doi: 10.4103/0970-258X.303111. Epub ahead of print
2. [Bhargava M](#), Shewade HD, [Bhargava A](#). Self-reported tuberculosis in Indian adolescents (2015-16): results from a nationally representative survey. *International Journal of Tuberculosis and Lung Disease*. 2020 Dec 1;24(12):1247-1253. doi: 10.5588/ijtld.20.0047.
3. Sinha P, Carwile M, [Bhargava A](#), Cintron C, Acuna-Villaorduna C, Lakshminarayan S, et al. How much do Indians pay for tuberculosis treatment? A cost analysis. *Public health action*. 2020;10(3):110-7.
4. [Bhargava A](#), Bhargava M, Juneja A. Social determinants of tuberculosis: context, framework, and the way forward to ending TB in India. *Expert Review of Respiratory Medicine*. 2020:1-17.  
This review also offers insights into how India was transformed from a low burden country in the 19<sup>th</sup> century into the country with the highest burden in the 20<sup>th</sup>.
5. [Bhargava A](#), Shewade HD. The potential impact of the COVID-19 response related lockdown on TB incidence and mortality in India. *Indian J Tuberc*. 2020 Jul 10. doi: 10.1016/j.ijtb.2020.07.004. Epub ahead of print. PMID: PMC7348601.  
This paper estimated that the COVID related lockdown could translate into an additional 185,000 cases and 87,000 deaths unless and called for urgent measures to address food insecurity in the poor and rapid restoration of TB services.
6. Bhargava M, [Bhargava A](#), Ghate SD, Rao RSP. Nutritional status of Indian adolescents (15-19 years) from National Family Health Surveys 3 and 4: Revised estimates using WHO 2007 Growth reference. *PLOS ONE*. 2020; 15(6):e0234570.  
This paper pointed out a methodological flaw in the estimation of nutritional status in the National Family Health Survey. A reanalysis uncovered for the first time, high levels of stunting in Indian adolescents in a nationally representative sample.
7. [Bhargava A](#), Bhargava M. Tuberculosis deaths are predictable and preventable: Comprehensive assessment and clinical care is the key. *J Clin Tuberc Other Mycobact Dis*. 2020; 19:100155.  
This publication reviewed the epidemiology of TB deaths and concluded that most deaths are early and out-of-hospital, in younger age groups, and in those with drug-susceptible TB. It recommends that all patients should undergo risk assessment at diagnosis and should receive comprehensive clinical care including in-patient care and management of all comorbidities including undernutrition. The framework of essential diagnostics and therapeutics proposed in this article has been adopted by the National TB elimination Programme in its guideline on differentiated care for patients with TB.
8. [Bhargava A](#), Bhargava M. Obesity and COVID-19 outcomes: a risk factor that needs attention. *Current Science*. 2020; 118(9):1335-6

## Recognition

1. Appointed as member of the Strategic Advisory Committee of the RePORT India Consortium, a joint research initiative of National Institutes of Health, USA and Department of Biotechnology, Government of India.
2. As a member of the Strategic Advisory Group of Experts on In-Vitro Diagnostics (SAGE- IVD) of the World Health Organization for the period 2019-2020, participated in the drafting of the 3<sup>rd</sup> edition of the WHO's Essential Diagnostics List.
3. Appointed as a member of the National Technical Working Group on TB and Comorbidities of the National Tuberculosis Elimination Programme, India.

## **Claudia Denkinger**

### Publications in 2020

1. Reddy KP, Denkinger CM, Walensky RP. Cost-effectiveness of a novel lipoarabinomannan test for tuberculosis in patients with HIV. *Clin Infect Dis*. 2020 Nov
2. de Vos M, et al. Denkinger CM, Schumacher SG. Comparative analytical evaluation of four centralized platforms for the detection of *M. tuberculosis* complex and resistance to rifampicin and isoniazid. *J Clin Microbiol*. 2020 Dec
3. Cao Y, et al. Denkinger C, Chakravorty S. Xpert MTB/XDR: A ten-color reflex assay suitable for point of care settings to detect isoniazid-, fluoroquinolone-, and second-line injectable drugresistance directly from *Mycobacterium tuberculosis* positive sputum. *J Clin Microbiol*. 2020 Dec
4. \*Södersten E, Ongarello S, Mantsoki A, Wyss R, Persing DH, Banderby S, Meuzelaar LS, Prieto J, Gnanashanmugam D, Khatri P, Schumacher SG, Denkinger CM. Diagnostic accuracy study of a novel blood-based assay for identification of TB in people living with HIV. *J Clin Microbiol*. 2020 Dec 9

### Other – media, awards, etc.

#### Invited presentations:

2020 World Union Meeting on Lung Health – Diagnostics symposium, Virtual conference  
Panel lead: Drug resistance in tuberculosis

## **Nora Engel**

### Publications in 2020

- Engel, N.** (2020). Aligning in the dark: Variable and shifting (user-) settings in developing point-of-care diagnostics for tuberculosis and HIV. *Social Studies of Science*, 0(0), 0306312719900545. doi:10.1177/0306312719900545 (IF: 2.427)  
*One of the most prestigious STS journals. This article uses an analysis of the challenges and dynamics of innovating diagnostics for global health to advance social theory on alignment and user studies.*
- Engel, N., & Wolffs, P. F. G.** (2020). Aligning diagnostics to the point-of-care: lessons for innovators, evaluators and decision-makers from tuberculosis and HIV. *BMJ Global Health*, 5(11), e003457. doi:10.1136/bmjgh-2020-003457 (IF: 4.28)
- Engel, N., & Krumeich, A.** (2020). Valuing Simplicity: Developing a Good Point of Care Diagnostic. *Frontiers in Sociology*, 5(37). doi:10.3389/fsoc.2020.00037
- Daftary, A., Furin, J., Zelnick, J. R., Venkatesan, N., Steingart, K., Smelyanskaya, M., . . . **Engel, N.** (2020). TB and women: a call to action. *The International Journal of Tuberculosis and Lung Disease*, 24(12), 1312-1315. doi:10.5588/ijtld.20.0414 (IF: 2.76)
- Mwaura, M., Kao, K., Wambugu, J., Trollip, A., Sikhondze, W., Omesa, E., . . . **Engel, N.** (2020). Situating trade-offs: Stakeholder perspectives on overtreatment versus missed diagnosis in transition to Xpert MTB/RIF Ultra in Kenya and Swaziland. *PLoS ONE*, 15(2), e0228669. doi:10.1371/journal.pone.0228669 (IF: 2.740)

### Book chapters:

**Engel, N.** (2020). Standardization and localization in tuberculosis control. In J. P. Gaudilliere, C. Beaudévin, C. Gradmann, A. Lovell, & L. Pordié (Eds.), *Global health and the new world order: Historical and anthropological approaches to a changing regime of governance* (pp. 29-51). Manchester: Manchester University Press

**Engel, N.** (2020). Innovating tuberculosis diagnostics for the point of care. In I. Harper & H. Macdonald (Eds.), *Anthropological and ethnographic approaches to understanding tuberculosis and its control* (pp. 166-184). London and New York: Routledge.

#### Policy:

**Engel, N., & Mwaura, M.** (2020). Report on user perspectives on Xpert testing: results from qualitative research (section 4.7); In: Web Annex 4. Evidence synthesis and analysis. In: WHO consolidated guidelines on tuberculosis. Module 3: diagnosis – rapid diagnostics for tuberculosis detection. (Licence: CC BY-NC-SA 3.0 IGO). Geneva: World Health Organization.

#### **Greg Fox**

##### Grants in 2020

**2020** Medical Research Futures Fund (CID) Pathway to the Elimination of Antibiotic-Resistant Tuberculosis in the Pacific: The PEART study Tackling Antimicrobial Resistance and Drug-Resistant Tuberculosis in the Pacific \$4,250,000 (2020-2025)

##### Publications in 2020

1. Velen K, Nguyen VN, Nguyen TA, Pham DC, Nguyen BH, Nguyen KC, Nguyen HD, Dinh NS, Britton WJ, Marks GB, Fox GJ. Risk factors for TB among household contacts of patients with smear-positive TB in eight provinces of Vietnam: a nested case-control study. *Clin Infect Dis* (Accepted 11/11/2020)
2. Oxlade O, Benedetti A, Anagonou S, Adjobimey M, Cook VJ, Fisher D, Fox GJ, Fregonese F, Hadisoemarto P, Hill P, Johnston J, Khan FA, Long R, Nguyen VN, Nguyen TA, Obeng J, Ruslami R, Schwartzman K, Trajman A, Valiquette C, Menzies D. Effectiveness and cost-effectiveness of a health systems intervention for latent tuberculosis infection management (ACT4): a cluster-randomised trial. *Lancet Pub Health* 2021;6(5):e272-e82.
3. Fox GJ, Redwood L, Chang V, Ho J. The effectiveness of individual and environmental infection control measures in reducing the transmission of *Mycobacterium tuberculosis*: a systematic review. *Clin Infect Dis* 2021; 72(1)15-26. ciaa719, <https://doi.org/10.1093/cid/ciaa719>
4. Martinez L et al (including Fox GJ). The Risk of Tuberculosis in Children After Close Exposure: An Individual-Participant Meta-analysis Including 137,647 Children from 46 Cohort Studies. *Lancet* 2020 395 (10228), 973-984
5. Fox GJ, Nguyen CB, Nguyen TA, Tran PT, Marais BJ, Graham SM, Nguyen BH, Velen K\*, Dowdy DW, Mason P, Britton WJ, Behr MA, Benedetti A, Menzies D, Nguyen VN, Marks GB. Levofloxacin versus placebo for the treatment of latent tuberculosis among contacts of patients with multidrug-resistant tuberculosis (The VQUIN MDR Trial): a protocol for a randomized controlled trial. *BMJ Open* 2020 10(1):e033945. doi: 10.1136/bmjopen-2019-033945.

#### **Anete Trajman**

##### Grants in 2020

**2020 - Current** Computer-aided diagnosis for exclusion of active tuberculosis in contacts of patients with pulmonary tuberculosis - breaking the chain of transmission  
Funder (s): National Council for Scientific and Technological Development-CNPq  
\$405,920.00 CAD

**2020 - Current** GXT - GeneXpert (G) or chest X-rays (X) or tuberculin skin test (T) for assessing household contacts: A randomized community trial  
Funder (s): Canadian Institutes of Health Research-CIHR  
\$96,672.40 CAD per year (2019 and 2020)

**2020 - Current** Epidemiological impact and intersection of pandemics by COVID-19 tuberculosis in Brazil, Russia, India and South Africa  
Funder (s): National Council for Scientific and Technological Development-CNPq  
\$136,140.00 CAD

## Publications in 2020

1. BASTOS, MAYARA LISBOA; CAMPBELL, JONATHON R.; Oxlade, Olivia; ADJOBIMEY, MENONLI; Trajman, Anete; RUSLAMI, ROVINA; KIM, HEE JIN; BAAH, JOSEPH OBENG; TOELLE, BRETT G.; Long, Richard; Hoepfner, Vernon; ELWOOD, KEVIN; AL-JAHDALI, HAMDAN; APRIANI, LIKA; BENEDETTI, ANDREA; SCHWARTZMAN, KEVIN; MENZIES, Dick. Health System Costs of Treating Latent Tuberculosis Infection With Four Months of Rifampin Versus Nine Months of Isoniazid in Different Settings. ANNALS OF INTERNAL MEDICINE. , v.172, p.1 - 20, 2020.
2. BASTOS, M. L.; OXLADE, O.; BENEDETTI, A.; FREGONESE, F.; VALIQUETTE, C.; LIRA, S. C. C.; CARVALHO-CORDEIRO D.; CAVALCANTE, J. R.; FAERSTEIN, E.; ALBUQUERQUE, M. F. M.; CORDEIRO-SANTOS, M.; HILL, P. C.; Menzies, D.; Trajman, A. A public health approach to increase treatment of latent TB among household contacts in Brazil. INTERNATIONAL JOURNAL OF TUBERCULOSIS AND LUNG DISEASE. , v.24, p.1000 - 1008, 2020.
3. ALSDURF, H.; OXLADE, O.; ADJOBIMEY, M.; AHMAD KHAN, F.; BASTOS, M.; BEDINGFIELD, N.; BENEDETTI, A.; BOAFO, D.; BUU, T. N.; CHIANG, L.; COOK, V.; FISHER, D.; FOX, G. J.; FREGONESE, F.; HADISOEMARTO, P.; JOHNSTON, J. C.; KASSA, F.; Long, R.; MOAYEDI NIA, S.; NGUYEN, T. A.; OBENG, J.; PAULSEN, C.; ROMANOWSKI, K.; RUSLAMI, R.; SCHWARTZMAN, K.; SOHN, H.; STRUMPF, E.; Trajman, A.; VALIQUETTE, C.; YAHA, L.; Menzies, D. Resource implications of the latent tuberculosis cascade of care: a time and motion study in five countries. BMC HEALTH SERVICES RESEARCH. , v.20, p.341 - 351, 2020.



## Appendix 2: MTBC Budget narrative 2020-2021 and 2021-2022

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### Year-End Financial Statement for May 1<sup>st</sup> 2020 to April 30<sup>th</sup> 2021

#### INCOME/REVENUE

##### Faculty of Medicine

The Faculty of Medicine contributed **\$50,000** to support the TB Centre for the 2020-2021 year.

##### Other sources

- RI MUHC WHO Collaborating Centre (WHO CC) support: On November 17<sup>th</sup> 2018, the Pan American Health Organization / World Health Organization (PAHO/WHO) designated the McGill International TB Centre as a PAHO / WHO Collaborating Centre for Tuberculosis Research. This designation will be effective for the next 4 years. The RI MUHC is providing **\$50,000 / year** in support of the WHO CC.
- McGill Global Health Programs (GHP) matching funds: For 2020-2021, GHP renewed its funding of **\$10,000** to support the TB Centre.
- Mi4 funding for Transforming TB care in Nunavut: Through the Mi4 initiative, the TB Centre received **\$125,000** for qualitative research and training on quality of TB care in Nunavut and **\$50,000** for the Training program in Nunavik.
- MGH Foundation TB Research Day prize: For the 2020 TB Research Day, the MGH Foundation renewed its donation of **\$1,250** for the ALFA award.

#### EXPENSES

##### Personnel Salaries and Related Costs

- A part-time TB Centre Manager whose main responsibilities were the development of the TB Centre / WHO CC Strategic Plan 2021-2025, the coordination of the activities, including the Annual TB Research Day, TB Seminars and Executive committee meetings, the financial management of all the expenses related to TB Centre accounts, the branding of the TB Centre and the daily communications (**44 169,14\$**). This amount includes former Managers (Charity Omenka, Caroline Vadnais and Alexandra Gatto). The implementation of the Strategic Plan will be done through the next financial year and will require a half-time Manager.
- A part-time Clerical Assistant whose main tasks were maintaining the TB Centre website, preparing and promoting the MTBC Newsletter and updating the list of members (**\$3,256.23**).
- Professional officers/managers, and highly skilled staff (WHO CC): The funds provided by the RI MUHC to support the WHO CC will be used for salary support for highly skilled and professional officers. Expenses totaling **\$30,000** has been spent for the 2020-2021 year.

##### Bringing People Together

- TB Research Day 2021: This year, the Centre's 8<sup>th</sup> Annual TB Research Day ([www.mcgill.ca/tb/research-day](http://www.mcgill.ca/tb/research-day)), initially scheduled for March 23<sup>rd</sup> 2020, was planned for Fall 2020 and postponed to March 24<sup>th</sup>, 2021 due to the COVID-19 pandemic. Over 70 participants attended the event, which included oral presentations by trainees, student prizes and awards, and 3 keynote speakers addressed by Dr. Penny Heaton, Ms Minnie Grey and Robyn Waite - **\$5,000.00**. Usually planned expenses for this event includes catering, program printing, supplies and transportation for the keynote speaker.
- TB Research Day 2021 – Publication prizes: A total of 10 publication prizes - **\$3,000.00** were awarded as part of TB Research Day in 3 categories – biomedical research, clinical research, and health outcomes. These prizes are co-sponsored by GHP.



- TB Research Day 2021 – Oral presentation prizes: As part of TB Research Day, 3 trainees gave oral presentation. A total of 3 oral presentation prizes (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prize for each; **\$600.00**) were awarded at the end of the day.
- TB Research Day 2021 - ALFA award: The MGH Foundation will be providing **\$1,250.00** for the ALFA award, given to the overall winner of the event.
- TB Seminars: Every month (up until mid-March for this year), the TB Centre holds a seminar with invited guest speakers ([www.mcgill.ca/tb/seminarsevents](http://www.mcgill.ca/tb/seminarsevents)). These events are often co-hosted with RECRU or IDIGH and are open to all members, trainees and TB network, - **\$4,000.00**. Expenses consist mainly of light snacks and beverages for attendees, and sometimes transportation costs for out-of-town invited speakers.
- Travel awards for trainees: The TB Centre and GHP co-sponsor a bi-annual Travel Awards competition for trainees - **\$1,470.00**. In 2020, at the TB Research Day, 4 more trainees travel awards of \$1,250 were expected to be awarded. Travel is severely limited by COVID, so travel awards are on hold.
- Outreach activities: The TB Centre produced several promotional materials, including informational and promotional tools - **\$6,250.00**.
- Planning and coordination: A small amount of **\$872.84** was spent on office supplies and communications for the TB Centre.

### **TB CENTRE RESEARCH GRANTS**

In 2020, 11 members of the TB Centre were awarded new research grants, and all members held research operating funds through grants obtained in past years. All research activities of the MTBC, including post-graduate trainee stipends, were provided through operating grants to individual members.

### INCOME/REVENUE

#### Faculty of Medicine

We are requesting **\$70,000** from The Faculty of Medicine to support the administrative and support activities of the TB Centre for the 2021-2022 year.

#### Other sources

- RI MUHC WHO Collaborating Centre (WHO CC) support: The RI MUHC is providing **\$50,000 / year** in support of the WHO CC.
- McGill Global Health Programs (GHP) matching funds: For 2020-2021, we will request GHP to renew its funding of **\$15,000** to support the TB Centre.
- MGH Foundation TB Research Day prize: For the 2022 TB Research Day, we will again request **\$1,250** from the MGH Foundation for the ALFA award.
- WHO support: We submitted 2 technical and financial proposals to the WHO Global TB Programme:
  - “Data Curator for the public access Global individual patient data platform for drug-resistant TB” (**\$309,130** over 5 years).
  - “Conducting Data synthesis and analysis on the use of new regimens for the treatment of drug-resistant TB” (**\$60,300** over one year).

### EXPENSES

#### Personnel Salaries and Related Costs

- TB Centre Manager: For the 2021-2022 year, we plan on expanding the activities of the TB Centre through the implementation of the new Strategic plan 2021-2025. Action plans / specific activities will be developed for each priority. These will include expansion of contacts with formal agreements with National TB Programmes and with universities in Low and Middle Income Countries (LMIC), organizing events to foster interdisciplinary projects, development of new training courses including an in-person inter-disciplinary course that will be mandatory for all trainees of MTBC members, and on-line courses targeted for research trainees in LMIC, networking with other research centres, writing policy briefs to Health Canada / Global Affairs Canada. In order to achieve this, we will require our TB Centre Manager continues to work 40% of her time for the Centre (0.4FTE). For this reason, we are requested **\$38,000**.
- The salary Manager is supported from several sources - by mainly the RI-MUHC and the FMHS of McGill – matching funds together - we can have **one high level Manager**. Additionally, an increase in the salary support provided by the FMHS would allow us to hire a manager on a near full-time basis, expand the Centre’s activities and projects and reinforce our strategic positioning.
- TB Centre support staff: With the expansion of the activities of the TB Centre through the implementation of the new Strategic plan TB Centre administrative assistant will be needed - **\$5,000.00**.
- Training coordinator: On-line courses/materials, and in person new course - **\$12,000.00**.

**Development and implementation of the new Strategic plan 2021-2025**: Implementation of this new plan and priorities will take up the majority of time that the Manager devotes to TB Centre activities, although she will continue to perform the oversight of all other activities of the MTBC (see under “Bringing people together”). Action plans / specific activities for each priority will be developed. The level of efforts to undertake some of the activities is included in the TB Centre Manager’ salary, and the Training coordination salary. However, specific budgets should be allocated to the 3 specific actions plans.

- Priority 1: create new collaborations and priorities for interdisciplinary projects;

- Develop formal mechanisms / agreements for joint-projects with universities in LMIC and National TB control programs from high-burden countries.
- Develop interdisciplinary research and projects.
- Expand knowledge translation, as an activity part of research.
  - Priority 2: strengthen capacity building activities for trainees from Canada and LMIC;
- Develop a strategy at the FMHS to recruit new investigators (clinician scientist and PhD scientists) and trainees.
- Create learning opportunities for students and trainees: develop a TB Centre training plan (workshops series: primary data collection, field studies diagnostic studies, basic studies, training on leadership skills, grant writing courses, a new in-person interdisciplinary course on TB research, etc.).
- Sponsor post-doc students and support multi-year funding for trainee positions (co-supervision of a project) from LMIC.
- Develop on-line activities: trainings, seminars, webinars, courses; consultation in research (design, execution, analysis, SAC and DSMB roles); consultation in clinical.
  - Priority 3: play a greater leadership role on the Canadian and international scenes.
- Advocate for scientific advances to be implemented in public health practices in Canada and globally. Write policy briefs to present research and recommendations to a non-specialized audience.
- Explore new funding mechanisms that could foster new collaborations in Canada and internationally.

### Bringing People Together

- Research Day 2022: This year again, we are aiming to hold the Centre's 9<sup>th</sup> Annual TB Research Day ([www.mcgill.ca/tb/research-day](http://www.mcgill.ca/tb/research-day)) near World TB Day (March 24<sup>th</sup>). In 2022, we are hoping the event can be co-sponsored by GHP. A total of **\$6,500.00** is budgeted for catering, program printing, supplies and transportation for the keynote speakers.
- TB Research Day 2022 – Publication, poster and oral presentation prizes: A total of 6 publication prizes - **\$3,000.00** - are again planned for TB Research Day in 3 categories – biomedical research, clinical research, and health outcomes. We plan to hand out 6 poster and oral presentation prizes - 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prize: **\$600.00**. These prizes will again be co-sponsored by GHP.
- TB Seminars: We hope RECRU and/or IDIGH will again co-host these events, and will request matching funds from GHP for a total of **\$4,000.00**. This support will be used for light snacks and beverages for seminar attendees, and while we will recruit speakers from the Centre, we will also aim to invite international speakers and pay honoraria (with transportation support, if attending in person).
- Planning, coordination activities: To support the TB Centre's investigators meetings, and the executive committee's planning / coordination meetings, a small amount of **\$500.00** is budgeted.
- Travel awards for trainees: The TB Centre and GHP will co-sponsor a an-annual Travel Awards competition for trainees - **\$4,375**. We are budgeting for 7 awards in the spring of 2022.
- Support for IDIGH Research Day 2022: The Centre's contribution of **\$250.00** to IDIGH Annual Student Research day ([idigh.ca/en/events/research-day](http://idigh.ca/en/events/research-day)) will be renewed again in 2021.
- Outreach activities: For 2021-2022, as the TB Centre expands its activities, we plan on organizing a variety of outreach activities, co-sponsored by GHP **\$3,500.00**. The nature of these will be determined by the executive committee once funding is confirmed, but examples include the TB Film Festival, events held around World TB Day, hackathons, etc.

### Other Expenditures

- Expenses for this category include office supplies and other services (e.g. graphic design for the website) for a total of **\$950.00**.