McGill | Faculty of Medicine and Health Sciences | Faculté de médecine et des sciences de la santé

Committee for Oversight of Research Units

Annual Reporting for Faculty Supported Research Centres and Networks

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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 an annual report to the Committee for Oversight of Research Units (CORU)

The reporting period is May 1, 2021 – April 30, 2022.

Please submit your report to the Research Office, Faculty of Medicine and Health Sciences (**riac.med@mcgill.ca**) before the following deadline:

Monday, May 2, 2022

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.

Annual Report of Activities and Outcomes

Name of the Unit: McGill Centre for Translational Research in Cancer (MCTRC)

Name of Unit leader & email address:

Dr. Gerald Batist
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514-340-8222 ext. 25418
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If the Unit is **a Senate-approved** McGill Research Centre, indicate date of approval: 1996

Mission statement of the Unit (~ 2 sentences):

Provide a solid foundation based on state of the art platforms, multidisciplinary training and intense academic-industrial partnerships for the advancement of outstanding scientific knowledge at the interface of fundamental and clinical sciences.

Promote the translation of innovative laboratory and clinical research findings in every step of the cancer care continuum into real health improvements of cancer patients.

Total number of Unit members: 63

Number of members affiliated with McGill's FMHS: 52

Unit's website:

Please note the website needs to feature:

- all sources of funding support (including the FMHS logo), change website to reflect partners and funding support.
- the list of Members and their institutional affiliation with appropriate links,
- the activities supported by the Unit,
- all previous Annual Reports.

Website address (URL): https://www.mcgill.ca/translational-research-cancer/

Please respect the page limits, where indicated.

(minimum font size of 11 pts, use lay language)

1. **Explain the significance of the Unit's mission at McGill and beyond** (1/2 page max.)

MCTRC was developed to provide a particular emphasis in **innovation oriented research, multidisciplinary training and patient care** that focuses on enabling translational research. It lays in the interface between the work of building experimental models and discovery of new therapeutic or diagnostic targets and treatments, and the actual validation of testing of their value in the clinical context. While many individual investigators aim to bring fundamental discoveries into clinical practice, and many clinical researchers aim to study the discoveries of others in clinical trials, thanks to the creation of a joint space for the integration of translational cancer scientist and clinical scientist, the **Centre is uniquely fitted** to intimately link and support these efforts, so that the most relevant unmet medical needs observed in the clinic can be addressed in the lab, which in turn leads to adaptive and scientifically sound, state of the art clinical testing.

There has been an enormous deluge of cancer cases that are often more advanced than previously, coming to medical attention as a consequence of delays during the pandemic in screening, diagnosis and early treatments. Multiple models predict a significant incr8ease in cancer mortality as a result, unless the healthcare systems can increase capacity by 30%. This is not possible, so the only solution is to turn to research translation to develop and implement innovations to address this challenge.

The MCTRC provides an efficient, creative and unique interface of high impact biomedical research with innovative healthcare delivery. Implementing state of the art discovery in cancer care is essential to facing the challenge of the rising challenge of cancer.

2. **Alignment with the Faculty's Strategic Research Plan** (1/2 page max.)

Cancer is one of the 4 major health and disease areas highlighted in the Faculties Strategic Research Plan. The activities of the MCTRC focus on 3 of the 4 cross-cutting strategic priorities of the Faculty: 1) Precision approaches to personalized medicine; 2) Biomedical and health sciences in the age of digital data; 3) Patient-centered continuum of care.

Our emphasis on personalized medicine dates back to the centre's conception in 1996 and is the guiding principle underlying the shared resources and core platforms we strive to generate and upkeep. These include the Clinical Research Unit, designated by the National Cancer Institute of Canada (NCIC) as a 'Centre of Excellence' and the most experienced Quebec site in conducting first-in-man and early-phase trials. Patient-derived bio-specimens collected in the CRU are biobanked in one of the eight Centre's Biobanks, and studied in our research labs. Emerging data from the labs are used for designing novel therapeutic trials or patient stratification approaches implemented in the CRU. Already in the pilot phase, our liquid biopsy platform, for the detection of patient-specific tumor mutations in cell-free DNA will allow for better treatment decisions and early metastasis detection. The Segal Proteomics Centre designs diagnostic kits to detect specific tumor mutated proteins in tissues and blood specimens. Our molecular modeling platform designs novel molecules that target and inhibit these newly discovered tumor mutations. These are just a few examples of how our resources and platforms may be used jointly to enhance the translation of personalized medicine innovations.

Our central role in several collaborations, among the university departments, McGill's affiliated units (the MUHC, GCI, MGC), multinational pharma companies, Quebec and US-based biotechs (MRM Proteomics, Sermonex, Starpax, and Saltikvah), several national and international consortia (e.g. Win Consortium) and innumerable government and para government funding agencies at the provincial and federal level have put the MCTRC at the centre of the cancer translational research in the McGill environment, nationally and internationally.

More recently the MCTRC has been putting tremendous efforts into the standardization of the Electronic Health Records under the Digital Health Initiative. The MCTRC is at the core of overcoming the current challenges, facilitating the implementation of standardized EHR, and promoting its use among its clinicians. This step includes the optimization and standardization of the entry of patient data pertinent for pre-

screening and the effective use of the tumor boards to identify patients potentially eligible for a precise clinical trial.

3. **Major joint publications over the past 12 months** (including shared software, data repositories; with links) co-authored by at least two PI members of the Unit:

MCTRC members published 192 articles in peer-reviewed journals with focus on cancer research, among the total, 71 (37%) were co-authored by MCTRC members. Free open access content is available for 46% of the publications. Below are some of the centre's major joint publications (Centre's authors are in bold):

Molecular characterization of DICER1-mutated pituitary blastoma. Nadaf J, de Kock L, Chong AS, Korbonits M, Thorner P, Benlimame N, Fu L, Peet A, Warner J, Ploner O, Shuangshoti S, Albrecht S, Hamel N, Priest JR, **Rivera B**, Ragoussis J, **Foulkes WD**. *Acta Neuropathol*. 2021; 141: 929–944. IF:17.088

Silencing PEX26 as an unconventional mode to kill drug-resistant cancer cells and forestall drug resistance. Dahabieh MS, Huang F, Goncalves C, Flores González RE, Prabhu S, Bolt A, Di Pietro E, Khoury E, Heath J, Xu ZY, Rémy-Sarrazin J, **Mann KK**, **Orthwein A**, Boisvert FM, Braverman N, **Miller WH**, **Del Rincón SV**. *Autophagy*. 2021 Jun 21:1-19. doi: 10.1080/15548627.2021.1936932. IF: 16.02

The integrated stress response is tumorigenic and constitutes a therapeutic liability in KRAS-driven lung cancer. Ghaddar N, Wang S, Woodvine B, Krishnamoorthy J, van Hoef V, Darini C, Kazimierczak U, Ah-Son N, Popper H, Johnson M, Officer L, Teodósio A, Broggini M, **Mann KK**, Hatzoglou M, **Topisirovic I**, Larsson O, Le Quesne J, **Koromilas AE**. *Nat Commun*. 2021 Jul 30;12(1):4651. doi: 10.1038/s41467-021-24661-0. IF: 14.92

STAT1 potentiates oxidative stress revealing a targetable vulnerability that increases phenformin efficacy in breast cancer. Totten SP, Im YK, Cepeda Cañedo E, Najyb O, Nguyen A, Hébert S, Ahn R, Lewis K, Lebeau B, La Selva R, Sabourin V, Martínez C, Savage P, Kuasne H, Avizonis D, Santos Martínez N, Chabot C, **Aguilar-Mahecha A**, Goulet ML, Dankner M, **Witcher M**, Petrecca K, **Basik M**, **Pollak M**, **Topisirovic I**, Lin R, Siegel PM, **Kleinman CL**, Park M, St-Pierre J, **Ursini-Siegel J**. *Nat Commun*. 2021 Jun 3;12(1):3299. doi: 10.1038/s41467-021-23396-2.IF: 14.92

Inhibiting the MNK1/2-eIF4E axis impairs melanoma phenotype switching and potentiates antitumor immune responses. Huang F, Gonçalves C, Bartish M, Rémy-Sarrazin J, Issa ME, Cordeiro B, Guo Q, Emond A, Attias M, Yang W, Plourde D, Su J, Gimeno MG, Zhan Y, Galán A, Rzymski T, Mazan M, Masiejczyk M, Faber J, Khoury E, Benoit A, Gagnon N, Dankort D, Journe F, Ghanem GE, Krawczyk CM, **Saragovi HU**, Piccirillo CA, Sonenberg N, **Topisirovic I**, **Rudd CE**, **Miller WH Jr**, **Del Rincón SV**. *J Clin Invest*. 2021 Apr 15;131(8):e140752. doi: 10.1172/JCI140752.IF: 14.81

Potential therapies for immune-related adverse events associated with immune checkpoint inhibition: from monoclonal antibodies to kinase inhibition. Henderson Berg MH, **Del Rincón SV**, **Miller WH**. *J Immunother Cancer*. 2022 Jan;10(1):e003551. doi: 10.1136/jitc-2021-003551. IF: 13.751

The MNK1/2-eIF4E Axis Supports Immune Suppression and Metastasis in Postpartum Breast Cancer. Guo Q, Bartish M, Gonçalves C, Huang F, Smith-Voudouris J, Krisna SS, Preston SEJ, Emond A, Li VZ, Duerr CU, Gui Y, Cleret-Buhot A, Thebault P, Lefrère H, Lenaerts L, Plourde D, Su J, Mindt BC, Hewgill SA, Cotechini T, Hindmarch CCT, Yang W, Khoury E, Zhan Y, Narykina V, Wei Y, Floris G, **Basik M**, Amant F, Quail DF, Lapointe R, Fritz JH, **Del Rincon SV**, **Miller WH Jr**. *Cancer Res*. 2021 Jul 15;81(14):3876-3889. doi: 10.1158/0008-5472.CAN-20-3143. IF: 12.7

Copy number and transcriptome alterations associated with metastatic lesion response to treatment in colorectal cancer. Gambaro K, Marques M, McNamara S, Couetoux du Tertre M, Diaz Z, Hoffert C, Srivastava A, Hébert S, Samson B, Lespérance B, Ko YJ, Dalfen R, St-Hilaire E, Sideris L, Couture F, Burkes R, Harb M, Camlioglu E, Gologan A, Pelsser V, Constantin A, **Greenwood CMT**, Tejpar S, Kavan P, **Kleinman CL**, **Batist G**. Clin Transl Med. 2021 Apr;11(4):e401. doi: 10.1002/ctm2.401. IF: 11.49

4. **Major joint research projects funded over the past 12 months** (involving at least two PI members of the Unit:

One of the core strengths of the MCTRC lays in the **initiation of clinical trials** to validate fundamental research discoveries. Over the past reporting period our investigators conducted 89 clinical trials, 40 of which were investigator initiated studies and of the total (89), 12 were initiated during the reporting period. Jointly, these studies recruited over 400 patients. Among these, three studies merit highlight:

1. The multi-centre TRIple Negative Breast Cancer Markers In Liquid Biopsies Using Artificial Intelligence (TRICIA) Study (NCT04874064): A investigator initiated trial led by **Dr. Basik** that uses the ddPCR technology developed in his lab to detect circulating tumor DNA (ctDNA) in plasma from cancer patients (Cavallone, et al., 2020) for the detection of minimal residual disease (MRD) in breast cancer. The MCTRC is coordinating the implementation of the Liquid Biopsy platform that will accelerate the development and application of ctDNA detection in clinical contexts.

2. Tofacitinib for immune-related colitis: a phase 2 study (NCT04768504): A single-arm investigator initiated pilot study with over $38M of support from Pfizer to evaluate the efficacy and safety of tofacitinib in cancer patients with immune-related colitis from immune checkpoint inhibitor (ICI) led by **Dr. Esfahani.** Immune-related colitis is the complication that accounts for the highest absolute numbers of hospitalizations, discontinuations of therapy, and deaths among patients receiving immune checkpoint inhibitors (Esfahani, et al., EJM, 2020).

3. Binimetinib and Encorafenib for the Treatment of Advanced Solid Tumors With Non-V600E BRAF Mutations (BEAVER) (NCT03839342): BEAVER trial is an investigator-initiated study led by **Dr. Rose** designed to test the safety and efficacy of binimetinib and encorafenib (B+E) in patients (pts) with non-V600E BRAF mutations. Dr. Rose developed this trial based on her lab-based research on non-V600 BRAF mutations that suggests this genotype may be amenable to therapeutic intervention with clinically approved targeted therapies. Dr. Rose recently acquired support from the iTMT for conducting this trial.

4. The molecular characterization of Low HER2 positive breast cancers. The **Basik** laboratory in concert with the department of pathology at the JGH participated in an international Astra-Zeneca sponsored study in low HER2+ breast cancers, which are now being targeted by antibody-drug conjugates. Pathological review of HER2 staining in non-HER2+ breast cancers revealed a prevalence of this novel subgroup of 60%. Studies to define the molecular portrait of this subtype are ongoing.

In addition to clinical trials, our researchers have over 140 funded ongoing projects which combined received more than $19,6M in funding during the reporting period. At least 30 of these have the participation of at least two investigators from our centre. A list of the selected major newly awarded and ongoing joint research projects can be found below.

In particular, one of the strengths of the MCTRC is its strong relationship with the pharmaceutical and biotechnology industries for the development and validation of new therapeutics, diagnostic kits, medical devices, etc. A list of our major academic-industry partnerships projects is found below:

Selected academic-industry partnership research projects with more than one MCTRC researcher:

1. Acquisition d'équipements pour le traitement de cancer par guidage magnétique de bactéries chargées d'agents thérapeutiques. Principal investigator : **Gerald Batist**. Co-investigators : **Te Vuong, Cristiano Ferrario**, Petr Kavan, **Khashayar Esfahani**, Gilles Soulez, Sylvain Martel, Ying Yuan, **Michael Hier**. *Ministère d'Économie et Innovation, Fondation de Hôpital général juif de Montréal.* Total amount: $8,779,342 (2021).

2. Traitement de cancers par guidage magnétique de bactéries chargées d'agents thérapeutiques. Principal Investigator : **Batist G,** Co-investigators : **Cristiano Ferrario,** Petr Kavan, **Khashayar Esfahani, Vuong T**. *MEDTEQ.* $6,220,778 (2021-2023).

3. MIDAS-Lung cancer project. Principal investigators: **Alan Spatz, Gerald Batist, Claudia Kleinman, Celia Greenwood**, Hangjun Wang **Christoph Borchers**, John Spicer, Pierre-Olivier Fiset, **Reza Forghani**. *Karen Anthony Consortium for lung cancer research-JGH Foundation.* Total amount: $3M (including pledge for $1.3M) (2021-2023).

4. Decentralized Deep Radiomics: Scaling up the Discovery of Prognostic and Predictive Cancer Imaging Biomarkers from Routine Clinical Data Across a Network of Hospitals. Yoshua Bengio, Benoit Gallix, **Thierry**

Muanza, Aaron Courville, Jaron Chong, An Tang, **Reinhold,C**. *MEDTEQ, Mitacs, Imagia and CRS*. $2.5M (2019- 2022)

5. TRIple negative breast Cancer markers In liquid biopsies using Artificial intelligence (TRICIA study). **Mark Basik, Gerald Batist, Alan Spatz**. *MEI, Canadian Cancer Society (CCS), My Intelligent Machines (MIMs), Exactis Innovation* $1.5M (2020-2023).

6. Targetable vulnerabilities to overcome drug resistance in poor outcome breast cancers. Morag Park; **Michael Pollak; Sylvie Mader**. **Michael Witcher, Claudia Kleinman, Josie Ursini-Siegel**, Saima Hassan, **Mark Basik**, Russell Jones. *ONCOPOLE EMC2 - Équipes multi-institutionnelles contre le cancer*. $1.5M (2018-2021/11)

7. Developing the Next Generation PD-L1 Assays Using Precision Mass Spectrometry Project leaders: **Christoph Borchers** and **Alan Spatz**, Claude Leduc. *Génome Québec*. $1.4M (2019-2021/09).

8. Quebec Consortium for Novel Cancer Therapeutics and Biomarker (QCC) - this is a multi-institutional project. Principal Applicant: Morag Park & George Zogopoulos (McGill University/Goodman Cancer Research Centre), Co-PI: **Gerald Batist** (JGH), Fred Saad (CR-CHUM/IRIC), Denis-Claude Roy (HMR). Fonds d'accélération des collaborations en santé (FACS) program; Consortium québécois sur la découverte du médicament (CQDM) (2019/04 – 2023/03). $1,289,986.29 for JGH during the reporting period.

9. Optimization, further development and validation of a novel applicator for treatment of endorectal cancer. **Enger SA, Te Vuong.** *TransMedTech* $526,000.00 (2021-2024).

10. Low HER2 positive Breast cancers. **Mark Basik** and Olga Aleynikova. Astra Zeneca (Parexel) $ 200,000 (2021).

Major new joint funded research projects:

1. Marathon of Hope Quebec: Central and Year 1 Gold Cohort activities for McGill, the RI-MUHC and the JGH. **Gerald Batist and Mark Basik**, *TFRI* $207,500.00 for year 1 - $3M in funding for the whole project (2021-2025).

2. A prospective trial of radiation omission in patients with clinically node negative breast cancer and pathologic complete response after neoadjuvant chemotherapy. Principal investigators: **Muanza, Thierry M; Basik, Mark**; Parvez, Elena. Co-investigator(s):Khosrow-Khavar, Farzin; **Spatz, Alan**; Thavorn, Kednapa; Wong, Stephanie M. *CIHR* $1,524,700 (2021-2031).

3. Targeting lipid metabolism in chemoresistant breast cancer. **Basik, M,** and **Pollak, M**. *CIHR* $1,009,800 (2021-2026)

4. Using artificial intelligence to analyze emergency medical images, for fast prioritization of life-threatening conditions like strokes, collapsed lung or perforated bowels in remote Quebec communities.**Forghani, R** and **Reinhold, C**. *MUHC Foundation / TD Bank Group* $1M (2021)

5. Identification of biological properties and molecular signatures to predict treatment response in patients with advanced HPV positive oropharyngeal cancer. Principal Investigators: **Silva Wurzba, Sabrina Daniela**; Sadeghi, Nader. Co-investigator(s): Bourque, Guillaume; **Hier, Michael P.** *CIHR* $665,550 (2021-2026).

6. Defining the critical genomic dependencies of non-V600 BRAF mutant tumors to optimize therapeutic strategies **April Rose, François Mercier** and others. *Canadian Cancer Society* $450,000 (2021-2024).

Ongoing major joint funded projects (over $1M in funding):

1. Cross-talk between translational machinery and metabolic programs in breast cancer. Peter Siegel; Julie St-Pierre; William J. Muller, Nahum Sonenberg, and Vincent Giguère, Dr. Russell Jones, Arnim Pause, Fredérick Mallette, **Michael Pollak, Ivan Topisirovic**, Daniela Quail. *2019 Terry Fox New Frontiers Program Project Grant (PPG)* $6M (2019-2025)

2. Innovative pre-clinical models to overcome drug resistance in triple negative breast cancer. **M Basik**, M Bouvier, M Park, S Huang**, CMT Greenwood**. *CIHR* $4.6M (2017-2022)

3. IL-33: an orchestrator of the brain tumor microenvironment**. Dr. Stephen Robbins and Dr. Donna Senger** *CIHR* $4,255,116.00 (2017-2023)

4. Modeling gene expression trajectories in the human developing brain: applications to pediatric brain tumors. **Claudia Kleinman, C Greenwood**, N Jabado, J Ragoussis, M Richer. *CIHR* $3.8M (2018-2023).

5. Rationally designed approaches to target mRNA translation in eradicating poor outcome breast cancer. Jerry Pelletier, **Ivan Topisirovic, Antonis Koromilas** and **Josie Ursini-Siegel**. *QBCF/IRICoR* (Lead Action, Breast Cancer) $3M (2021-2024)

6. Inherited susceptibility to cancer: from gene discovery to mechanisms to clinical applications. **Foulkes WD, Fabian, Marc R**; Majewski, Jacek A. *CIHR* $2,533,601 (2016-2024)

7. Clinical trial to assess efficacy and pharmacodynamic effects of MNK inhibition in advanced breast cancer. Nahum Sonenberg (Leader), **Michael Pollak (Co-Leader)**. Co-Applicants: Poul Sorensen, Lynne-Marie Postovit, John Mackey, Karen Gelmon, **Wilson H. Miller, Giuseppina Ursini-Siegel**, Jerry Pelletier, Sam Aparicio, Morag Park, Peter Michael Siegel, Connie Eaves, Cheryl Arrowsmith, William Muller**, Ivan Topisirovic,** Benjamin Haibe-Kains, Shoukat Dedhar, Brad Nelson, Gregg B. Morin, Elizabeth Eisenhauer, Ola Larsson, **Claudia Kleinman, Sonia del Rincon**, Daniela Quail, Peter Cameron Stirling, Harvey Smith. Source: *Stand Up To Cancer (SU2C) Canada, the Canadian Cancer Society (CCS), and the Canadian Institutes of Health Research (CIHR): Stand Up To Cancer (SU2C) Canada Metastatic Breast Cancer Dream Team.* $2M (2019-2022)

8. Montreal Cancer Consortium. **Alan Spatz, Gerald Batist**. *Terry Fox Research Institute* $1.5M (2018-2021)

9. Development of a non-invasive positron detector to measure the arterial input function for pharmacokinetic modelling in dynamic positron emission tomography imaging. **Abbasi Nejad Enger Shirin**, Therriault-Proulx, Francois, **Reinhold, Caroline**. *Collaborative Health Research Projects (NSERC partnered)* $1,214,556 + $89,250 equipment (2019-2022)

10. Innovation of a Proprietary Liquid Biopsy Assay for Early Diagnosis of Ovarian Cancer. **Uri Saragovi**. Co-applicants : Anne Marie Mes Masson; **Celia Greenwood**; Steffany Bennett; **Walter Gotlieb**. *CIHR*. $1.1M (2020-2024)

5. Major outreach activities (e.g., seminar series, general public events):

MCTRC members maintain high visibility in the scientific community. This year, the MCTRC members were invited to speak at more than 190 events at local, national and international levels, either as keynote speaker or regular talks. Members of the MCTRC organized 9 outreach events, including seminar series and conferences. A list of the selected major activities can be found below:

The MCTRC produced an educational video with funding from the Quebec Cancer Consortium on a unique clinical trial story of a patient diagnosed with metastatic pancreatic cancer and her treating physician, Dr. **Gerald Batist**. They take us on their inspiring journey of an n-of-1 study (a clinical trial in partnership with A (an US-based biotech startup) evaluating a novel immunotherapeutic agent, while exploring the impact that a clinical trial could have - not only for the individual patient, but also for our nation, touching the lives of many more patients.

Drs**. Josie Ursini-Siegel**, together with Drs. Stephanie Lehoux and **Sonia DelRincon** organized a Joint Cancer-Molecular Renegerative Medicine Seminar series featuring local, national and international speakers. We had about 60 seminars, 28 of those being invited speakers and the remaining 32 featured the MCTRC's trainees.

Dr. Alexandre Orthwein in collaboration with **Drs. Ursini-Siegel J, Gotlieb WH** and others pubished a multi-omics analysis where they identified the spliceosome as a key regulator of DNA double-strand break repair pathways. This data integration analysis allowed the generation of a database of novel DNA repair factors (HRbase) that contains a list of 464 predictions, including 76 gold standard HR genes.

Dr. Foulks co-organized the Eighth International Symposium on Hereditary Breast and Ovarian Cancer, Montreal May 4-7, 2021, held virtually. Co-sponsored by the Program in Cancer Genetics and the Hereditary Breast and Ovarian Cancer Foundation (www.hboc.ca). Role: Scientific Director of Conference. This is the

premier symposium on HBOC worldwide. It was delayed by one year due to COVID-19, was refashioned as an all-virtual conference and counted over 600 attendees in 2021.

6. **Major training activities** (e.g., summer schools, co-supervision of trainees, practical workshops):

Our investigators mentored over 150 trainees during the reporting period, including 63 master students, 64 PhD students, and 34 fellows and post-doctoral fellows. Around 30% of these students are co-supervised by two researchers from the MCTRC.

Our researchers actively participate in the ongoing Graduate Diploma in Oncology at the Department of Oncology, developed and directed by **Dr. Koren Mann**. This year's participants included **Drs. Marc Fabian, Mark Basik, Laurent Azoulay, Christoph Borchers, Michael Pollak, and Khashayar Esfahani** in several capacities, including those of lead instructors, guest lecturers; practicum supervisors and program committee members.

In collaboration with the Dept. of Pharmacology and Therapeutics (**Drs. Mann** and Terry Hébert) the MCTRC is co-hosting the Translational Research Certificate. The certificate is planned to debut in the Fall/2022 - Winter/2023 and includes courses in translational research, fundamentals of disease for graduate students and clinical mentorship for graduate students. The MCTRC is an elemental partner of this initiative since its inception and is committed to provide clinical mentorship in cancer through its clinicians at the JGH. In a partnership with Institute TransMedTech (iTMT), the MCTRC has secured matching funds for student funding to cover for tuition fees and/or fellowships.

McMedHacks (https://mcmedhacks.com/) is an 8-week program that aims to bridge the domains of medicine and artificial intelligence for an interdisciplinary audience of researchers, clinicians, and entrepreneurs from around the world. McMedHacks is a student-led program under the supervision of Dr. **Shirin Abbasinejad Enger** from McGill Medical Physics Unit and the MCTRC. The workshop is open to the public and free of cost and includes tutorials, lectures and discussion panels. Its first rendition last year, attracted over 500 participants from over 38 countries. Several MCTRC members and students participate in the workshop, including **Drs. Thierry Muanza** and **Caroline Reinhold.**

As part of their training, the graduate students and postdoctoral fellows have the opportunity to present their results in the Joint Cancer-Molecular Regenerative Medicine Seminar series and in the Yearly LDI Retreat and receive constructive feedback from their colleagues and PIs.

7. If applicable, **list new members** who joined the Unit in the past 12 months
(indicate: Name, title, full/associate member, affiliation):

Donna Senger, PhD, *full member*. Senior Investigator at the Lady Davis Institute and Associate Professor at the Gerald Bronfman Department of Oncology, McGill University.

Stephen Robbins, PhD, *full member*. Director of the Lady Davis Institute, Glaxo Smith Kline Chair in Pharmacology and Professor at the Gerald Bronfman Department of Oncology, McGill University.

Sabrina Daniela Silva Wurzba, DDS, MSc, PhD, *associate member*, Assistant Professor at the Department of Otolaryngology – Head and Neck Surgery at Faculty of Medicine, McGill University.

Corey Miller, MD.,CM.,FRCPC, *associate member*, Assistant Professor at the Department of Medicine, McGill University.

8. If applicable, **list members who have left the Unit** in the past 12 months
(indicate: Name, title, full/associate member, affiliation):

N/A

9. Explain why continued support from the FMHS is crucial to Unit (½ page max):

The MCTRC is a major stakeholder in McGill's COVID-19 and Cancer Program, directed by **Wilson Miller** since its inception in 2020. As explained above, much of clinical and prevention research on cancer will be dictated by the overarching goal of recovering lost ground and building resilience in our cancer control and care processes. MCTRC's core translational research agenda will assist the development of strategies to that end and provide leadership for McGill's scientific future in mitigating the impact of the pandemic on cancer prevention and care. Much of that work will stem from the MCTRC's educational mission, training the cancer scientists of tomorrow with the required eclecticism to face the new reality of academic medicine in the post-pandemic era.

The minimal funding required from FMHS will allow the MCTRC to be positioned as an important member of the McGill community, and will allow it to provide needed services for launch of clinical trials based on laboratory findings. We have secured funding for all other activities.

10. Provide suggestions about how the Faculty could do better to support the Unit and research efforts in general (**no page limit but please be specific and unleash your creativity!**)