**McGill-wide Green Labs Initiative**

The overall mission of the *Green Labs Initiative* is to cultivate environmental awareness within the research laboratories and teaching spaces across the various laboratories and departments McGill wide. Our mission is three-fold; (1) To implement sustainable practices across the laboratories within McGill, (2) To initiate a cultural change that implements sustainable practices in our daily work routines, and (3) To educate research personnel and trainees on sustainable practices.

As an extension of the initial MNI-Neuro Green Labs initiative, several other "Green Committees" have already begun to promote *Green* practices within their respective departments. For instance, we have distributed recycling bins and displayed signage above the bins within different labs to increase consciousness of adequate disposing techniques of lab waste. Plastic recycling bins have been placed in tissue culture rooms as they generate large amounts of plastic recycling owed to single use plastic material required for sterility. To date, members of several Green Committees across McGill are leading many of these initiatives, however, our overall objective is to foster a cultural change where each lab will eventually be educated in terms of sustainable lab practices and will be able to naturally maintain environmental consciousness without the need of a committee *per se*.

To educate and implement sustainable laboratory practices, the McGill-wide Green Labs Initiative requires funding. Our goals can be grouped into four main categories. (1) Providing and promoting appropriate resources for recycling, (2) Developing an educational initiative to minimize unnecessary use of energy (3) Promoting re-use to minimize consumption of single use plastics and (4) Promoting environmentally conscious practices outside the lab at departmental teaching and social events.

**1) Providing and promoting appropriate resources for recycling**

To educate laboratory personnel on how to be "Green", we need signage physically displayed in each laboratory as well as in the hallways to promote environmental awareness. As a method to initiate Green laboratory practices, we would require funding for printing these signs as well as to purchase specialized recycling bins for nitrile gloves and pipette tip boxes.

**2) Educating lab personnel on minimizing unnecessary use of energy**

We require funding for printing signage encouraging users to "shut your sash". The aim of these signs is to help remind individuals to close the fume hood sashes when they are not being used. This is because chemical fume hoods consume a lot of energy. We will also start a campaign encouraging lab personnel to turn off equipment and to thaw freezers regularly as another means to save energy.

**3) Promoting re-use to minimize consumption of single use plastics**

Reducing lab waste also includes the re-use of certain materials. Thus, we would like to purchase a serological pipette washing stations to be able to wash and re-use plastic pipettes instead of throwing them in the trash. As another example, we can purchase dish-washer safe containers to wash and re-use conical plastic tubes.

**4) Promoting environmentally conscious practices outside the lab at departmental teaching and social events.**

Many departments host weekly seminars and coffee is often served. To reduce the amount of trash generated by throwing away non-recyclable single use coffee cups, we would like to purchase and

supply reusable mugs to members throughout McGill to encourage their use at these seminars. To encourage laboratories to participate in our initiatives, we will also run contests, such as “clean your freezers” which would warrant the need of additional funding for the purchase of prizes for the most sustainable or “Green” lab as a motivational method to increase participation in this initiative.

Please note that the mission and overall goals of this McGill-wide initiative are directly aligned with those described in SPF grant entitled (1) Green Labs Initiative at The Neuro #SP0208 and (2) Fume Hood Experiment #SP0117.

For the Green Labs Initiative to move forward with the above-mentioned sustainable practices and methods, please refer to the detailed budgets appended below.

| **Overall budget for the McGill-wide Green Labs Initiative** | |
|---|---|
| **Item** | **Estimated Budget Required** |
| Terracycle Glove Recycling | $30,566.00 |
| Pipet Tip box Recycling Program | $3250.00 |
| Serological Pipette washing station | $2200.00 |
| Test tube dishwashing baskets | $899 |
| Signage – Posters & Shut your sash stickers | $4,400.00 |
| Mugs | $2,300.00 |
| Prize for most sustainable lab | $1,650.00 |
| Digital Scale to measure the amount of plastic waste produced per floor | $73.51 |
| Organization of events to create awareness/Promotion | $2000.00 |
| | **$47,338.51** |

**McGill-wide Green Labs Initiative**

**Appendix – Detailed budgets and responsible personnel to disseminate the funds**

**Section 1 – Departmental contact personnel responsible to disseminate the funds**

| | |
|---|---|
| Department of Pharmacology and Therapeutics | Kyla Bourque |
| Goodman Cancer Research Center | Sudipa Chatterjee & Carlis Rejon |
| Department of Chemistry | Alexander Wahba |
| Departments of Chemical & Biomedical Engineering | Camille Cassel de Camps |
| Child Health and Human Development Program | Travis Moore |
| Department of Anatomical Pathology | Lara Richer |

**Section 2 – Department of Pharmacology and Therapeutics**
**McIntyre and Bellini Location**

| **Detailed Budget for Pharmacology & Therapeutics** | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 7 boxes at $322 | $2500.00 |
| Pipet Tip box Recycling Program | Pack of 5 – $325.36<br>113 pipet boxes per box | $750.00 |
| Serological Pipette washing station | Approx. $100 each | $1000.00 |
| Test tube dishwashing baskets | $41.5 x 14 labs | $650.00 |
| Signage – Posters & Shut your sash stickers | - | $2000.00 |
| Mugs | 75 mugs | $750.00 |
| Prize for most sustainable lab | $150 per semester | $450.00 |
| | Total | **$8100.00** |

**Responsible committee or personnel organizing the initiative in the Department of Pharmacology and Therapeutics**

| | | |
|---|---|---|
| Kyla Bourque | kyla.bourque@mail.mcgill.ca | PhD Student |
| Maureen McKeague | maureen.mckeague@mcgill.ca | Professor |
| Jennifer Chen | jennifer.chen6@mail.mcgill.ca | PhD Student |
| Lucas Marques | lucas.marques@mail.mcgill.ca | PhD Student |
| Kimberly Martins-Cannavino | kimberly.martins-cannavino@mail.mcgill.ca | MSc Student |
| Jace Jones-Tabah | jace.jones-tabah@mail.mcgill.ca | PhD Student |

| | | |
|---|---|---|
| Sarah MacKinnon | sarah.mackinnon@mail.mcgill.ca | PhD Student |
| Elyssa Frohlich | elyssa.frohlich@mail.mcgill.ca | MSc Student |

**Laboratories in the Department of Pharmacology and Therapeutics taking part in this initiative**
31 Master students & 26 PhD students
Total of 57 graduate students + 30 Research Personnel + 30 undergraduate trainees

| | | |
|---|---|---|
| 1 | Terry Hébert Lab | 13th Floor McIntyre Medical Building |
| 2 | Paul Clarke Lab | 13th Floor McIntyre Medical Building |
| 3 | Daniel Bernard Lab | 13th Floor McIntyre Medical Building |
| 4 | Dusica Maysinger Lab | 13th Floor McIntyre Medical Building |
| 5 | Mosche Szyf Lab | 13th Floor McIntyre Medical Building |
| 6 | Jean François Trempe Lab | 13th Floor McIntyre Medical Building |
| 7 | Bastien Castagner Lab | 13th Floor McIntyre Medical Building |
| 8 | Maureen McKeague Lab | 13th Floor McIntyre Medical Building |
| 9 | Lisa Munter Lab | Bellini Life Sciences Building |
| 10 | Gerhard Multhaup Lab | Bellini Life Sciences Building |
| 11 | Derek Bowie Lab | Bellini Life Sciences Building |
| 12 | Anne McKinney Lab | Bellini Life Sciences Building |
| 13 | Alfredo Ribeiro-da-Silva Lab | 12th Floor McIntyre Medical Building |
| 14 | Claudio Cuello Lab | 12th Floor McIntyre Medical Building |
| 15 | Barbara Hales Lab | Ground Floor McIntyre Medical Building |
| 16 | Bernard Robaire Lab | Ground Floor McIntyre Medical Building |
| 18 | Jason Tanny Lab | Ground Floor McIntyre Medical Building |

**Section 3 – Goodman Cancer Research Center**
**GCRC Location**

| **Detailed Budget for GCRC** | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 15 boxes x $322 | $4,830.00 |
| Terracycle-VWR Pipet Tip box Recycling Program | 2 sets of 5 boxes x $374.16 | $750.00 |
| Serological Pipette washing station* | 6 x $100 | $600.00 |
| Signage – Educational Posters | - | $1,000.00 |
| Digital Scale to measure the amount of plastic waste produced per floor | 4 x $18.4 | $73.51 |
| Green GCRC Mugs | 80 mugs x $10 | $800.00 |

| | | |
|---|---|---|
| Organization of events to create awareness/Promotion | - | $2,000.00 |
| Prize for most sustainable lab | $150 per semester | $300.00 |
| | **Total** | **$10,353.51** |

**Responsible committee or personnel organizing the initiative in the Goodman Cancer Research Centre**

| | | |
|---|---|---|
| Sudipa Chatterjee | sudipa.chatterjee@mail.mcgill.ca | Post-Graduate (PG) |
| Carlis Rejon | carlis.rejon@mcgill.ca | Research Associate |
| Valentina Muñoz-Ramos | valentina.munozramos@mcgill.ca | Research Assistant |
| Caroline Thivierge | caroline.thivierge@mcgill.ca | Research Assistant |
| Cleber Silveira | cleber.moraes@mcgill.ca | Research Technician |
| Lucas Perus | lucas.perus@mail.mcgill.ca | Graduate Research Trainee |
| Matthew Ford | matthew.ford@mcgill.ca | Post-Graduate (PG) |
| Elise Vickridge | elise.vickridge@mcgill.ca | Post-Graduate (PG) |
| Mathieu Tremblay | mathieu.tremblay5@mcgill.ca | Research Associate |
| Virginie Sanguin | virginie.sanguin@mcgill.ca | Research Assistant |

**Laboratories in the Goodman Cancer Research Centre taking part in this initiative**
Estimated number of people involved: 120; including 12 labs and 1 Research Facility.

| Laboratory | Responsible | Number of people |
|---|---|---|
| Michel Tremblay | Jean Francois Theberge/Yevgen Zolotarov | 15 |
| Ian Watson | Mozhdeh Ahanfeshar Adams | 11 |
| William Mueller | Virginie Sanguin | 15 |
| Thomas Duchaine | Caroline Thivierge | 8 |
| Morag Park | Valentina Muñoz Ramos | 15 (tip boxes only) |
| Maxima Bouchard | Mathieu Tremblay | 6 |
| Alain Nepveu | Elise Vickridge | 5 |
| Peter Siegel | Matthew Anis | 15 |
| Yojiro Yamanaka | Matthew Ford | 6 |
| Daniela Quail/ Logan Walsh | Valerie Breton | 10 |
| Luke McCaffrey | Carlis Rejon | 10 |
| Histology Facility | Cleber Silveira | 4 |

**Section 4 – Department of Chemistry**
**Ottomass Location**

| Detailed Budget for the Department of Chemistry | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 3 boxes | $1000.00 |
| | Total | **$1000.00** |

This budget will be used for the teaching labs in the department of chemistry. The contact person is Alexander Wahba; alexander.wahba@mcgill.ca.

**Section 5 – Departments of Chemical & Biomedical Engineering**
**Wong and Genome Quebec Innovation Centre Locations**

| Detailed Budget for the Departments of Chemical & Biomedical Engineering | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 31 boxes x $322 | $10 000.00 |
| Pipet Tip box Recycling Program | 3 sets of 5 boxes | $1000.00 |
| Signage – Posters & Shut your sash stickers | - | $1000.00 |
| | Total | **$12,000.00** |

**Laboratories in the Departments of Chemical & Biomedical Engineering taking part in this initiative**
Total of 58 lab members spread across four laboratories & two locations.

| | |
|---|---|
| Christopher Moraes Lab | 7th Floor Wong Building |
| David Juncker Lab | Genome Quebec Innovation Centre |
| Corinne Hoesli Lab | 7th Floor Wong Building |
| Richard Leask Lab | 7th Floor Wong Building |

**Responsible committee or personnel organizing the initiative in the Departments of Chemical & Biomedical Engineering**

| | | | |
|---|---|---|---|
| Moraes | Camille Cassel de Camps | camille.casseldecamps@mail.mcgill.ca | PhD Student |
| Juncker | Alia Alameri | alia.alameri@mail.mcgill.ca | MEng Student |
| Juncker | Andy Ng | andy.ng@mcgill.ca | Research Associate |
| Hoesli & Leask | Lisa Danielczak | lisa.danielczak@mcgill.ca | Lab Technician |

**Section 6 – Child Health and Human Development Program at the Glen**

| **Detailed Budget for the Child Health and Human Development Program at the Glen** | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 3000 gloves $322 | $4,508.00 |
| Pipet Tip box Recycling Program | Pack of 5 – $325.36<br>113 pipet boxes per box | $750.00 |
| Serological Pipette washing station | $100 each | $600.00 |
| Test tube dishwashing baskets | $41.5 x 18 labs | $249.00 |
| Signage – Posters & Shut your sash stickers | N/A | $200.00 |
| Mugs | 75 mugs | $750.00 |
| Prize for most sustainable lab | $200 per semester | $600.00 |
| | Total | **$7657.00** |

**Laboratories in the Departments of Integrated Program in Neuroscience, Experimental Medicine, Biology and Human Genetics at the Glen in the Child Health and Human Development Program taking part in this initiative**

40 Master students, 30 PhD students & 14 Post-Docs. Around 200 total willing to participate.
Total of 84 graduate students

| | | |
|---|---|---|
| 1 | Aimee Ryan Lab | Block E, Main Floor |
| 2 | Christian O'Flaherty Lab | Block E, Main Floor |

| | | |
|---|---|---|
| 3 | Daniel Dufort | Block E, Main Floor |
| 4 | David Rosenblatt Lab | Block E, 1st Floor |
| 5 | Genevieve Bernard Lab | Block E, Main Floor |
| 6 | Guillaume Sebire Lab | Block E, Main Floor |
| 7 | Hugh Clarke Lab | Block E, Main Floor |
| 8 | Indra Gupta Lab | Block E, Main Floor |
| 9 | Jacquetta Trasler Lab | Block E, Main Floor |
| 10 | Janusz Rak | Block E, 1st Floor |
| 11 | John Mitchell Lab | Block E, Main Floor |
| 12 | Makoto Nagano Lab | Block E, Main Floor |
| 13 | Myriam Srour Lab | Block E, 1st Floor |
| 14 | Nada Jabado Lab | Block E, 1st Floor & Main Floor |
| 15 | Nancy Braverman Lab | Block E, Main Floor |
| 16 | Pierre Lachapelle Lab | Block E, Main Floor |
| 17 | Rima Rozen Lab | Block E, 1st Floor |
| 18 | Rima Slim Lab | Block E, Main Floor |
| 18 | Robert Koenekoop Lab | Block E, Main Floor |

**Responsible committee or personnel organizing the initiative in the Child Health and Human Development Program at the Glen**

| | | |
|---|---|---|
| Travis Moore | travismoore.chhd@gmail.com | Technical Coordinator |
| Angela Roussos | angela.roussos@muhc.mcgill.ca | Program Assistant |
| Krithika Ragupathi | krithika.ragupathi@mail.mcgill.ca | Volunteer Undergraduate |
| Alexandra Chapleau | alexandra.chapleau@mail.mcgill.ca | Masters Student |
| Isabella Angela Iasenza | isabellaangela.iasenza@gmail.com | Masters Student |
| Zehra Khoja | zehra.khoja@mail.mcgill.ca | Research Assistant |

**Section 7 – Department of Anatomical Pathology**
**McGill University Health Center- GLEN/MNI/MGH campuses**

| **Department of Anatomical Pathology** | | |
|---|---|---|
| **Item** | **Details** | **Estimated Budget Required** |
| Terracycle Glove Recycling | 24 boxes x $322 | $7728 |
| Signage – Posters & Shut your sash stickers | N/A | $200 |
| Prize for green lab initiatives | $150 x 2 | $300 |
| | Total | **$8228** |

**Responsible committee or personnel organizing the initiative in the Department of Anatomical Pathology**

Clinical laboratory of 49 technicians, 7 pathology assistants, 24 residents and 26 staff pathologists

| | | |
|---|---|---|
| Louise Turcot | louise.turcot@muhc.mcgill.ca | Chief of service |
| Lara Richer | lara.richer@mail.mcgill.ca | Resident |

## Section 8 – Details for items requiring funding

### Terracycle Glove Recycling

The *large* Zero Waste Box holds about 3,260 gloves and costs $322.00.

https://zerowasteboxes.terracycle.ca/products/nitrile-and-latex-gloves-zero-waste-boxes?variant=776426155

### Pipet Tip box Recycling Program

Collection box allows 113 empty pipet tip boxes, a pack of 5 boxes costs $344.88.

https://ca.vwr.com/store/product/en/9227627/pipet-tip-box-recycling-program-terracycle

### Serological Pipette washing station

As means to accurately measure liquid volumes, individually wrapped serological pipettes are used in cell culture hoods as they are sterile. However, these are often one-time use considering that they are made of plastic and cannot be re-sterilized. However, instead of putting them in the waste, they can be washed, in “specialized” washing stations and re-used at the bench-top. Such equipment has been commercialized and can be purchased however, the costs of these are astronomical (https://us.vwr.com/store/product/4761839/nalgene-pipet-cleaning-sets-thermo-scientific). Instead, do-it-yourself-pipette-washer manuals are available online and we can purchase the materials required at a hardware store and build it ourselves at a cost estimated to be under $100. Once built, they simply need to be connected to the water supply using common tubing, followed by the addition of some soap in the washing station and then the pipettes wash themselves (see video attached). The pipettes are then air dried and can be re-used thus reducing lab waste.

https://doi.org/10.1662/0002-7685(2002)064[0682:ADPW]2.0.CO;2

See PDF document for building instructions and video attached.

### Test tube dishwashing baskets

Aluminum test tube washing baskets are ideal for washing centrifuge tubes as means to reduce our consumption of lab plastics by recycling/re-using lab materials. The basket measures 332mm length by 228 mm width by 178mm height. Item costs $36.30 on amazon.

https://www.amazon.ca/dp/B0061OUSWO/ref=ca_xb_dp_go_web_gl_biss