

PROJECT TITLE: SP0208 Green Labs Initiative at The Neuro

Please answer the following questions and return the completed form to the SPF Staff via e-mail.

Final Report prepared by Rosalind Roberts

E-mail gliatneuro@gmail.com

Actual Project Start Date 2019-01-01 Actual Project End Date 2020-01-31

Questions

1. Please summarize the project and its key accomplishments to date. In your answer, consider the impact your project has had so far on McGill's campus(es).
(Unlimited characters, suggested minimum ½ page or approximately 250 words)

The major goal of the Green Labs Initiative at the Neuro has been to kick-start a shift towards sustainable research in our department, and more widely at McGill and in Montreal. During our year of SPF funding, we have made significant progress towards this vision by raising awareness about how to work more sustainably, recycling lab materials, and uniting the Neuro community to explore green alternatives. We have also been instrumental in getting Green Lab Initiatives off the ground in six other McGill departments. We believe that our efforts will make a lasting impact on the sustainability of research within the University and the wider community.

Over the past year, we utilized several different approaches to initiate a culture change towards more sustainable practices. First, we have hosted three workshops, with an average of 30 attendees per session, to promote green practices both in and outside the lab. Topics covered included practices to reduce energy and water use, an overview of eco-conscious lab products, our lab recycling initiatives, lab product swaps and sustainable living in Montreal.

Second, we have encouraged labs to swap consumables that they do not need, rather than throwing them away. For Earth Day, we held a lab swap event and many unwanted products were re-homed. We have since inaugurated a dedicated space within the building for labs to drop off or collect unwanted materials, with an associated spreadsheet to keep track of its use. The lab swap area information is posted in each lab and we have seen good uptake, with over 20 items being left in the area and more than 10 items being taken by another lab.

Third, to promote the reduction of energy use in labs, we have generated posters of 'check-lists' to post in labs to encourage people to maintain their green practices and signs for fume hoods to reduce the energy wasted by fume hoods being left constantly open. Anecdotally, this has had a noticeable impact on the number of fume hood and biosafety cabinet sashes closed, and lights and equipment being turned off when not in use. We will also distribute fume hood position indicator stickers (created by the previous "Shut the Sash" SPF project) purchased with our remaining funds to further encourage individuals to consider the energy cost of leaving the fume hood open.

Finally, we ran a campaign with our departmental canteen, Café Vienne, to encourage customers to bring their own reusable container or mug to reduce styrofoam container use. During the campaign month, at least 43 reusable containers were used and it has been maintained at similar levels since, thanks to Green Labs signage we have put at the entrance to the café indicating reusable containers are welcomed. At the end of the campaign, we distributed free glass containers in the cafeteria as customers came to purchase lunch, informing them about our initiative whilst doing so. Overall, this campaign allowed us to engage with many more non-lab staff within the institute, who are enthusiastic about making environmentally sustainable changes.

To capitalize on the progress we have made in raising awareness of sustainability issues, we recruited 20 Green Lab Ambassadors (or GLAMBassadors) from 15 different labs. Their role is to help ensure that the programs we are implementing are working well in their laboratories, to help us keep stock of how much our programs are reducing waste and to help us identify and overcome any problems with the implementation. The work of the GLAMBassadors will also be crucial to ensure that the initiative continues despite turnover of students and staff in future years.

Our project also involved making infrastructural changes: we have implemented two lab recycling programs to divert waste from incineration to recycling. The first is a program that recycles pipette tip boxes. 12 labs have signed up to the program, and so far at least 16 boxes have been sent for recycling, which has diverted approximately 1,120 litres of waste from incineration. The second is glove recycling with Kimberly-Clark, which eight labs have signed up for. Four large boxes of gloves have been sent for recycling so far, diverting 800 litres of waste. In addition, as there is no general recycling currently available in the department, GLAMBassadors are also encouraged to collect general recycling and put it on the street for city recycling pick-up. We obtained four new large recycling bins from the city to ensure all of the recycling would be collected. At least 6 bags full of recycling per week (approximately 200 litres) are currently being diverted from landfill. We hope to use this program to leverage pressure on the department to implement general recycling of lab plastic waste via a contract with a specialized local recycling company.

It has been important for us to create a community around this project, including involving other stakeholders within the building and around McGill, in order to guarantee the success of our initiative. One part of this has been to engage members of the community via social media by setting up Facebook and Twitter accounts for the Initiative where we regularly post about our activities and articles about sustainability. Our Facebook page currently has 175 likes and our Twitter page has 33 followers. We have expanded our reach by having a stall at the Neuro's annual Staff Appreciation Day and presenting at the Integrated Program in Neuroscience (IPN) orientation. We have also been helped in reaching more students by the new Graduate Student Association in Neuroscience (GSAN) Sustainability Officers. Our mailing list currently reaches 120 people and we regularly share green lab tips and other sustainable information. We have set up a website (<https://gliatneuro.github.io/>) to give information about our initiatives and resources to help those who would like to set up similar initiatives.

Our profile has been raised in McGill and Montreal by various media appearances, including an interview with CBC for the program Let's Go, articles in the McGill Reporter and a video by the communications team at the Neuro. We are also now featured on the green lab website LabConscious (<https://www.labconscious.com/green-lab-groups>), so our website will be accessible to green lab initiatives around the world.

The increased awareness of our project led to interest from many other departments at McGill and even from other Universities. We have helped to ensure that similar sustainability projects will begin in other departments by helping six departments at McGill apply for SPF funding to set up awareness raising and recycling programs. Most recently, we partnered with the Bellini Life Sciences building and the Convergence Art-Science Initiative (who runs a course at Concordia University) to commission an artist (Emily Brown) to create an art installation from our used, non-hazardous lab waste. The aim of the art installation is to raise awareness about the massive levels of plastic waste generated from lab work. During the Vernissage, we hosted Environment and Climate Change Canada to present about their ongoing lab waste reduction program, and held a reception with 45 attendees. This exhibit allowed us to connect with a larger public across McGill campus, non-McGill scientists, and the arts community.

Together, we hope that our multi-pronged approach to improve lab sustainability can have a lasting impact on the attitudes within the research community and in turn decrease the environmental footprint of research.

2. Please describe the key successes and challenges of your project. (Minimum of two examples for each)
(Unlimited characters, suggested minimum ½ page or approximately 250 words)

Our project has begun to bring awareness to the Neuro community that sustainability needs to be addressed, particularly within scientific research. We have found that the community is very receptive to our suggested changes, and are keen to collaborate with the Initiative to implement further changes. For example, the new GSAN President added two Sustainability Officers to the GSAN committee. We have already worked with them on an event on sustainable living in Montreal and they have been helping us to promote green changes at the Neuro, and in other departments with a neuroscience presence. In addition, Neuro Events would like to push harder to encourage people

to bring their own mugs and containers to seminars, and to provide reusable cups and plates at their events. This was evident at the Open Science Symposium held in November 2019, where they opted to eliminate bottle water use by giving all speakers reusable water bottles (with a design from “The Neuron Family”, who also produced our logo) and providing water and other drinks for attendees from large dispensers. In this respect, our project has been very successful at engaging the community and promoting our activities. Outside of the Neuro, we have helped six additional departments apply for SPF funding to get similar initiatives off the ground. We will also be presenting our initiative at the Lady Davis Institute at the Jewish General Hospital, as they are forming a sustainability committee and would like some advice and resources to move forward. We have also had interest from the Sustainability Office at Western University, which demonstrates there is general interest in reducing the impact of scientific research.

This enthusiasm for making sustainable changes has also translated into good uptake of the lab recycling schemes (12 labs for tip box recycling, 8 for glove recycling) and engagement by lab members signing up to be GLAMBassadors (20 GLAMBassadors). The lab recycling schemes and the commitment of GLAMBassadors to collect and take out general recycling have led to the diversion of more than 3,000 litres of waste from incineration in biohazard bins or landfill.

While we are currently undertaking 'guerilla recycling' to make up for the lack of organized general recycling collection in our building, this is not a long-term solution. When initiating this project, we discussed the implementation of recycling in the building but were met with resistance, due to the complex nature of the building management at the Neuro. Our intention was to push for general recycling as a way to recycle general lab plastics. However, during the second half of our project we met with scientists at Environment Canada, who have initiated a program in which they recycle almost all lab plastics. We learned that this requires partnership with a specialized recycling company, who are accustomed to dealing with the types of products used in labs. This means that implementing general recycling will be a much larger undertaking than we initially expected. In particular, we will require additional funding to hire an environmental consulting company and establish partnership with a local recycling company; this will also require concrete support from building management. We already have the approval of key leaders within the Institute and plan to leverage this to gain the support of building management, and intend to raise the funds by launching a McGill Seeds of Change campaign. We hope that following successful implementation of the scheme this will also spread to other McGill buildings.

Finally, although the Neuro community is enthusiastic about our initiative, a challenge is that it is always difficult to assess whether the changes are being fully implemented within labs. Our GLAMBassadors help a lot in this regard; however, old habits are difficult to change and some researchers may be more reluctant to do so. We are hoping that the services and practices we put in place will solidify as new students enter the research community. We presented at the IPN orientation this fall so that incoming students were aware of the initiatives, and are working with the GSAN Sustainability Officers to put together a 'Green Orientation' program, so that all students are trained in green lab practices when they start in their labs. We hope that this will help overcome some of the challenges we have encountered and lead to more successes in the future.

3. What key points of advice or *lessons learned* would you give to other SPF teams either regarding your experience managing your project or the project itself?

(Unlimited characters, suggested minimum ½ page or approximately 250 words)

- Set realistic goals – don't take on too much for your team size
- Build a support team – people who can help with events etc. AND people who can carry your initiative forward. It is important to establish some permanency past SPF funding, and past the graduation of your current team. Establish a formal structure (not necessarily hierarchical/rigid, but still outline clear roles) and keep organized notes/ mailing lists/resources, so that the project can be easily handed over to a new team. Use slack and the cloud

- Engage as many diverse stakeholders as possible – again, including ones that can allow the project to be built on past the initial SPF funding/team. For instance trying to make institutional-level changes through partnerships (ex. Getting a sustainability section in bio/chem safety training)
- Be open to feedback and engage with it in the spirit of always searching for better solutions. It can often be hard to determine whether your practices actually have the outcome you want. For example, despite using private recycling companies, we don't have definitive proof what we send them is being recycled. It's good to maintain some skepticism to push companies to do better.

4. What recommendations do you have for the future of this project to be continued and are there any opportunities for complementary projects? Who will take responsibility for the project's future and how can interested persons be in touch? The SPF team will also be in touch with this contact for updates on the project's progress in coming years, if ongoing.

(Unlimited characters, suggested minimum 1 paragraph)

To ensure our project continues, we have formed a committee and will elect new members over the coming months to keep the momentum going. Although several members of the current team will be leaving the Neuro this year, maintaining a committee means that the work can continue uninterrupted. In tandem, we will draw on the enthusiasm and commitment of the GLAMBassadors to train new lab members in sustainable practices and the recycling programs. The committee and GLAMBassadors will also continue our productive collaborations with GSN and the other departments beginning their own Green Labs Initiatives. There are currently six departments starting their own complementary projects, but we expect this to expand further over the coming years.

The big aim of this project now is to initiate a partnership with a local recycling company to begin wider recycling of lab plastics. The current committee will set the wheels in motion for this, including raising funds to make this possible, before passing the baton to the new committee. Since we have run the project out a communal gmail account, the new committee will be able to access all the relevant information both in email correspondence and on the google drive.

Interested people can get in touch via email to: glatneuro@gmail.com

5. Would you or your project team member(s) be willing to serve as a mentor to SPF project teams? Please choose one. If yes, SPF Staff will contact you with more information.

(800 characters maximum)

Yes No

Several of us will be leaving over the coming months but would be willing to provide support remotely or via email. We will already be mentoring a team to take over for us at the Neuro, and have written a "Green Labs Initiative" guide outlining our resources and important considerations.

6. In your application, you listed the following sources of funding:

McGill Sustainable Labs Award (amount TBD)

Please confirm if you received this funding in the space below. In your response, please list the actual amount (in dollars) that you received. Note: If you received funding from a McGill Department or Unit, please attach a letter from its Financial/Budget Officer confirming the actual amount of support.

(1,800 characters maximum)

We were not eligible for the labs award. We are continuing to search for new funding, such as Seeds of Change, the Scotiabank Run, sponsorship from industry, and support from within the Neuro. We have also been nominated for a Catalyst award.

7. Did you purchase equipment or make an installation on campus? Yes No

If yes, please briefly describe how these items will be maintained and used in the future.

(1,800 characters maximum)

8. The following Key Success Indicators were indicated in your project application and selected for tracking. Please indicate the actual results that you have achieved in the “Actual” column.

Selected Key Success Indicators	Target	Actual
# of student/lab managers recruited as “green lab ambassadors”	10	16
# of people attending information session	30	45
# of websites created with initiatives represented	1	1

If there is a significant difference in the target numbers and the actual numbers achieved, please explain. If you have any additional information to share about these success indicators, please also include it below.

(1,800 characters maximum)

9. Please report on your progress with the standard SPF Key Success Indicators in the “Actual” column.

Standard SPF Key Success Indicators	Actual
# of volunteers directly or indirectly engaged in the project	20
# of people (student, staff, or other) trained in the context of the project	40
\$ raised for project activities subsequent to SPF funding	0
# of tons of GHG emissions reduced by your project	Unsure!
# of partnerships or collaborations developed between the project team and other McGill administrative units, student groups, community groups, other universities, and/or other groups/organizations.	17

Regarding the last Key Success Indicator, please list the groups and/or organizations that you counted.

(Unlimited characters; point form acceptable.)

Internal organizations at the Neuro:

- Café Vienne

- Neuro Communications

McGill Departments and organizations:

- Graduate Student Association in Neuroscience
- PGSS Sustainability Committee
- Department of Pharmacology and Therapeutics
- Goodman Cancer Research Centre
- Department of Chemistry
- Department of Chemical Engineering
- Department of Biomedical Engineering
- Child Health and Human Development Program
- Department of Anatomical Pathology
- Jewish General Hospital (Lady Davis Institute)
- Bellini Life Sciences Complex

External organizations:

- VWR
- Kimberly-Clark
- Convergence Initiative
- Environment and Climate Change Canada

If you have any additional information to share about the Standard SPF Key Success Indicators, please include it below.
(1,800 characters maximum)

10. Please indicate the McGill stakeholder groups that were involved with your project as a team member or collaborator/partner. Choose all that apply.

- Undergraduate Postgraduate Administrative Staff Academic Staff Alumni

11. Please rate your project team's overall satisfaction with the support provided by the SPF Staff. Choose only one response.

- Very Dissatisfied Dissatisfied Neither Satisfied Nor Dissatisfied Satisfied Very Satisfied

12. Please provide any feedback or recommendations regarding your team's experience with the SPF
(Unlimited characters, suggested minimum 1 paragraph)

13. If there is additional information you would like to share about your project, please use the field below.
(Unlimited characters)

14. Has involvement in this SPF project positively impacted your team in the area of professional growth? Please choose one. If you would like to elaborate, please use the field below.

(800 characters maximum)

- Yes No Prefer Not to Share

15. Has involvement in this SPF project positively impacted your team in the area of personal growth? Please choose one. If you would like to elaborate, please use the field below.
(800 characters maximum)

Yes No Prefer Not to Share

16. Which of the following skills or attributes has your team improved through involvement in your SPF project? Choose all that apply.

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Budgeting | <input checked="" type="checkbox"/> Networking | <input type="checkbox"/> Systems Thinking |
| <input checked="" type="checkbox"/> Communications | <input checked="" type="checkbox"/> Planning | <input checked="" type="checkbox"/> Teamwork |
| <input type="checkbox"/> Conflict Resolution | <input checked="" type="checkbox"/> Problem Solving | <input type="checkbox"/> Technology |
| <input checked="" type="checkbox"/> Leadership | <input checked="" type="checkbox"/> Project Management | <input type="checkbox"/> Time Management |
| <input type="checkbox"/> Listening | <input checked="" type="checkbox"/> Public Speaking | <input type="checkbox"/> Writing |
| <input type="checkbox"/> Mentoring | <input checked="" type="checkbox"/> Stakeholder Engagement | <input type="checkbox"/> Other (Please specify in |
| <input checked="" type="checkbox"/> Negotiating | <input type="checkbox"/> Stakeholder Identification | the field below) |

Other:

17. Since starting your SPF project, has your team improved its knowledge of sustainability? Please choose one. If you would like to elaborate, please use the field below.
(800 characters maximum)

Yes No Prefer Not to Share

18. (Optional) If applicable, please list the total number of team members voluntarily self-identifying as members of marginalized communities:

Please identify the represented communities below. (e.g. women, Indigenous people, people of colour, LBTTQI, student parents, members of ethnic minorities, immigrants, people with disabilities)
(1,800 characters maximum)

All 5 of the team members are women

THANK YOU FOR COMPLETING YOUR FINAL REPORT!

Please e-mail your report to the SPF Staff attaching any additional information that you would like to share about your project (e.g. other reports, research, documents, photos, etc.). Please note that this Final Report will be shared publicly on your SPF project's webpage.