Sustainable Lab Working Group (SLWG): Student Report 2016-2017

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Project Overview: Student Training in Sustainable Lab Management

i. ABSTRACT

1. Engineering
    a. Variance by Department
        i. Chemical
        ii. Materials
2. Science
    a. Variance by Department
        i. BUGS & MBSU Venture
3. Elsewhere at McGill

i. ABSTRACT: Due to the complicated nature of the student training in sustainable management, a large series of question need to be answered by the project:

1. What exactly are students trying to fix with more training?
2. Do undergraduate students have the authority to make these changes without requiring EHS or Academic interactions?
3. Where is the support behind the project coming from within the areas looking to implement these initiatives?

This report will try and establish what exactly went right, what are the hurdles we (the student senators who tackled the project) faced and what work may need to be done in the future. Due to the complicated nature of a pilot project between Science and Engineering, it was deemed by Sean and I we would split the project up into two parts that overlapped to keep our work areas consistent. Chemistry was decided as that would be an area with conceivable student training may benefit laboratories.

1. Engineering

Engineering is unique in that all the departments within the Faculty have different labs with different needs. Civil engineering, which primarily uses steel concrete and other large hard materials, would not need the same finesse and training as for example chemical and materials engineering due to their more chemical oriented labs. As well, the training system of these labs is entirely different than Science. Most of the labs are run by a mix of undergraduate and graduate students, most who don't have more instruction than what the laboratory manual gives them.

1a. CHEMICAL

It was determined in a meeting between Alexander Dow and the Chemical Engineering Student Society (ChESS) President, while sustainability initiatives would be great, extra training wasn't required because chemical engineering students go through more rigorous testing than most SURE (Student Undergraduate Research Engineering), they also undergo training that is given by EHS to waste disposal staff. Ultimately a more proactive poster campaign about where chemical can and cannot go was decided upon because of its visibility and easy to implement. There was also a problem of finding Chemical Engineering professors that were on board with the project as most Lab Technicians saw student initiatives as an overstep of their abilities in their laboratories. In order for the projects to succeed, they would need student-professor-faculty partnerships, and with the professors missing, all possibilities were out the window.

1b. MATERIALS

Likewise with Materials Engineering, in a meeting between Alexander Dow and the Materials Engineering Undergraduate Society (MEUS) President, we determined that all undergraduate student had no idea about the disposal methods of chemicals because *" It's up to the graduate students advising in the lab to clean up the mess…"*. This showed the area of improvements for Materials weren't sustainability based but safety based. Our meeting prompted Alexander Dow and the MEUS president to approach the head of the Materials Departmental Safety Committee, Dr. Florence Paray, to recommend adding an undergraduate seat to their Safety Committee and asking for some form of training for undergraduate students about the chemicals in their laboratories. Here-in lied a problem of asking for academic changes that weren't possible.

2. Science

Unlike Engineering, The Faculty of Science prioritizes that graduate students aid undergraduate students in their laboratories; not providing the two opposites (no help and all the help) offered by Engineering. Sean Taylor found it much more easy to collaborate with faculty staff who administrated over laboratory spaces due to successful projects in the past. After asking all departmental societies, the Biochemistry UnderGraduate Society (BUGS), and McGill Biology Student Union (MSBU), and the Chemical Student Society (CSS – *later backed out*) all expressed interest in participating in a pilot project on how to improve laboratory sustainability.

2a. MSBU and BUGS

After sitting down for a meeting between the two (Sean Taylor, MSBU and BUGS), some areas for the initiative were identified. For MSBU, the primary problem was improving the laboratory instruction manuals and the how the Teaching Assistants presiding over the laboratory were taught in relation to improving the sustainability of their procedures. For BUGS, and also the Chemistry Department at McGill, a lot of work had already been done to try and bring in *'green'* chemistry techniques. The major point of improvement for them would be repairing the acetone recycler and working from there, a project which already has Departmental (and Faculty) support.

3. The McGill Context

In addition to Engineering and Science, Education, Medicine, Agricultural Science, and many more areas are all very good targets to reach out to in the future for sustainability training. However, a larger scale project on student sustainability training has to not only be area specific due tot the largely varied and decentralized structure of McGill, but also because of the freedom between labs to operate in their own manner. In order for a project surrounding student training in sustainability management to get off the ground, it requires significant collaboration between students (undergrad and graduate), lab supervisors and technicians, and departmental and faculty administrators; without these stakeholders coming together, the project is likely to fail.

Another reason why there are many obstacles ahead comes from the larger issue of where funding sources are for this project. A major incentive for this project would be if there were continual funding sources behind the project (not like Sustainable Projects Fund (SPF) that is a one-time grant). Moreover, finding ways of reviewing the projects within certain intervals of time to ensure their effectiveness would also be required if a continual source of funding was found within the McGill context (such as the McGill Office of Sustainability).