

The OPIRG McMaster Public Interest Research Grant Proposal

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Program and Level: Geography and Environmental Studies, Level 3

Description of the project

Composting is a simple and sustainable way of diverting organic waste from the landfill, unfortunately it is something that McMaster University has not yet adopted. Every day on campus, there is a large quantity of organic materials that are thrown in the garbage rather than being composted, and the university has to pay for this waste to be removed from campus. The project that is being proposed involves taking plant clippings from the greenhouse and organic waste from eateries on campus (specifically Bridges during the school year and Faculty Club during the summer) and composting them. The Office of Sustainability had procured a section of the greenhouse that has been retrofitted to accommodate the composting of this material, which is where this project will be taking place.

This project will determine which composting receptacle, the Earth Machine Composter (traditional backyard style composter) or Tumbling Compost Mixer produces useable compost end product the most efficiently – i.e. the fastest and with the least amount of effort. The purpose of this project is to come up with and test a system that makes composting as easy as possible. This project will result in two manuals. One will be a “how to compost guide” that will describe an efficient organic waste pick-up schedule from the eateries, the amount of composting to add every day to the composting receptacles, the harvesting schedule (how long each receptacle takes to produce compost), and the most efficient organic waste to plant clippings to dirt ratio. This manual will also contain suggestions and recommendations for the expansion this composting project to the other eateries on campus. The second manual will contain information on how to educate the McMaster community, as well as the wider community on the benefits of composting. This information will come from a series of interviews and surveys that will be disseminated to staff, students and faculty which will assess their behaviours and attitudes towards composting. These interviews and surveys will help determine what would stop people from composting on campus. The manual will address these limitations and provide suggestions for what can be done to overcome these obstacles.

As of right now, the greenhouse is too hot to be able to support vermi-composting, but there is a temperature regulator being installed, as well as window tinting happening in May, which may bring the temperature low enough to support vermi-composting. If the temperature can be lowered enough for vermi-composting to be possible, then it will be added, allowing for more waste to be diverted from the landfill.

Description of how the project achieves OPIRG McMaster's objective(s)

This research meets OPIRG McMaster's objectives in two ways. First, it will help to determine the most efficient way to convert organic waste from the eateries on campus and plant clippings from the greenhouse to an end product that will be used in gardens as fertilizer. It will advance the welfare of the McMaster and general community by diverting waste from the landfills and providing both the McMaster community and general community with a fertilizer that can be used in community gardens.

Second, this research will help develop and make recommendations for how this program can be expanded to serve more of the McMaster campus, while also making recommendations on how to educate the McMaster community, and the general community on how to compost and the benefits of composting. This knowledge is essential because without the knowhow and without knowing why, people are less willing to change their behaviours.

Outline of the individual/group's history, objectives, and current activities

I have been involved in composting initiatives with both MACgreen and the Office of Sustainability for over year. In the 2008/2009 year I helped design and disseminate a survey focusing on people's attitudes and behaviours towards composting. I wrote a report outlining the results of this survey and making recommendations for composting on campus. I was also part of advertising for the MACgreen campaign "Campus for Compost" which entailed educating people on the benefits of composting while also trying to collect signatures from people in support of implementing composting on campus.

In the summer of 2009 I wrote a report on vermi-composting for the Office of Sustainability. This report outlined the benefits of composting, the uses for the end product, different types of bins, different types of harvesting methods, options for bedding and what and how to feed the worms.

I am currently the Alternative Transportation Coordinator of MACgreen, so I oversee any transportation initiatives while also collaborating with the other coordinators to organize events to bring attention to environmental issues and events such as bottles water, Earth Hour and energy use. I am also currently involved with BARC (the Bay Area Restoration Council) writing a report on research that myself and other McMaster students conducted last summer on the knowledge that Hamilton and Burlington residents have of the Hamilton Harbour and the clean-up efforts surrounding it.

My environmental initiatives are focused on the local level because I feel that is where the most change can be made. Shifting people's attitudes and behaviours to more sustainable ideas will help save the environment, and composting is just one change that people can make. I want to make composting on McMaster campus as common as recycling, and this project would be the start of this. If I can demonstrate that composting is a feasible option for dealing with organic waste for Bridges and Faculty Club, then I can extrapolate from that and make recommendations for how to expand this program campus wide, or at least to all the eateries on campus.

I have been working on putting this project in motion with Kate Whalen since the beginning of the year, and will be spending the next year working on it as part of my senior thesis for my degree in Geography and Environmental Studies.

Preliminary budget (including specification of all other possible funders)

Product	Price (\$)	Quantity	Total (\$)
Earth Machine Composter	38.75	4	155.00
Tumbling Compost Mixer	112.5	4	450.00
Garbage Can on Wheels	18.99	1	18.99
Subtotal			623.99
Total (incl. Taxes)			705.11

If we determine that with the temperature control we can sustain vermi-composting in the greenhouse we will have the following additional costs:

Product	Price (\$)	Quantity	Total (\$)
Worm Chalet	134.5	4	538.00
Worm Shack	49.5	4	198.00
Red Wrigglers	20.18	8	161.44
Subtotal			897.44
Total (incl. Taxes)			1014.11

The office of Sustainability will be providing \$1000 worth of funding, which will cover the costs of the backyard style composters, but in the event that we discover that vermi-composting can be implemented in the greenhouse, we will require more funding to cover that.

Timeline of activities

Date	Activity
Jan 2010-March 2010	<ul style="list-style-type: none"> ● Planning the logistics of the project ● Determining that vermi-composting is not currently feasible ● Deciding the number of composting receptacles ● Making arrangements with Bridges and Faculty Club to take their organic waste ● Making arrangements with Art (the greenhouse manager) to take the clippings and soil that would normally be thrown out ● Setting up the greenhouse with the composting bins
April 2010	<ul style="list-style-type: none"> ● Collecting waste from Bridges ● Determining the proper ratio between soil, plant clippings and organic waste; ● Putting in place and testing an organic waste pick-up schedule that will be put in place in September when Bridges re-opens ● Making arrangements with a group on campus or in the community to give them the end product of composting to use for a community garden project ● Record the amounts of compost taken on every pickup
May 2010-August 2010	<ul style="list-style-type: none"> ● Collecting waste from Faculty Club; ● Determining the amount of organic waste, plant clippings and soil the composting system can handle per day ● Testing the difference in how long it takes to produce the end product between the two types of composters ● Record the amounts of compost taken on every pickup
May 2010	<ul style="list-style-type: none"> ● Once the temperature regular has been installed and the windows have been tinted white, monitoring the temperature to see if the greenhouse will be suitable for vermi-composting
September 2010-April 2011	<ul style="list-style-type: none"> ● Resume organic waste collection from Bridges using the agreed upon schedule from April ● At this point the collection process should be smooth, the time it takes to produce compost should be known, making the whole process run smoothly ● Record the amounts of compost taken on every pickup
September 2010-December 2010	<ul style="list-style-type: none"> ● Conduct interviews with staff, students and faculties about their attitudes and behaviours surrounding composting in the attempt to determine factors that would and do keep people from composting
March 2011-April 2011	<ul style="list-style-type: none"> ● Take the information from the interviews and create a guide on how to educate campus community on composting; this will outline why people do not compost and give suggestions on how to overcome these obstacles through education; ● Take the information collected on the actual composting process and create a guide on how to compost efficiently; this will include suggestions and recommendations on how to expand this program to other parts of campus.