

Operational Perspectives & Priorities

Rochelle Owen, Dalhousie University
Paul Martin, University of Western Ontario
Prof. Caroline Begg, McGill University

Session Overview

- Rochelle Owen (10min)
- Paul Martin (10min)
- Caroline Begg (10min)
- Cross Country Check-up (45min)

Operational Sustainability in Higher Education

Trends and priorities

Rochelle Owen, Dalhousie University

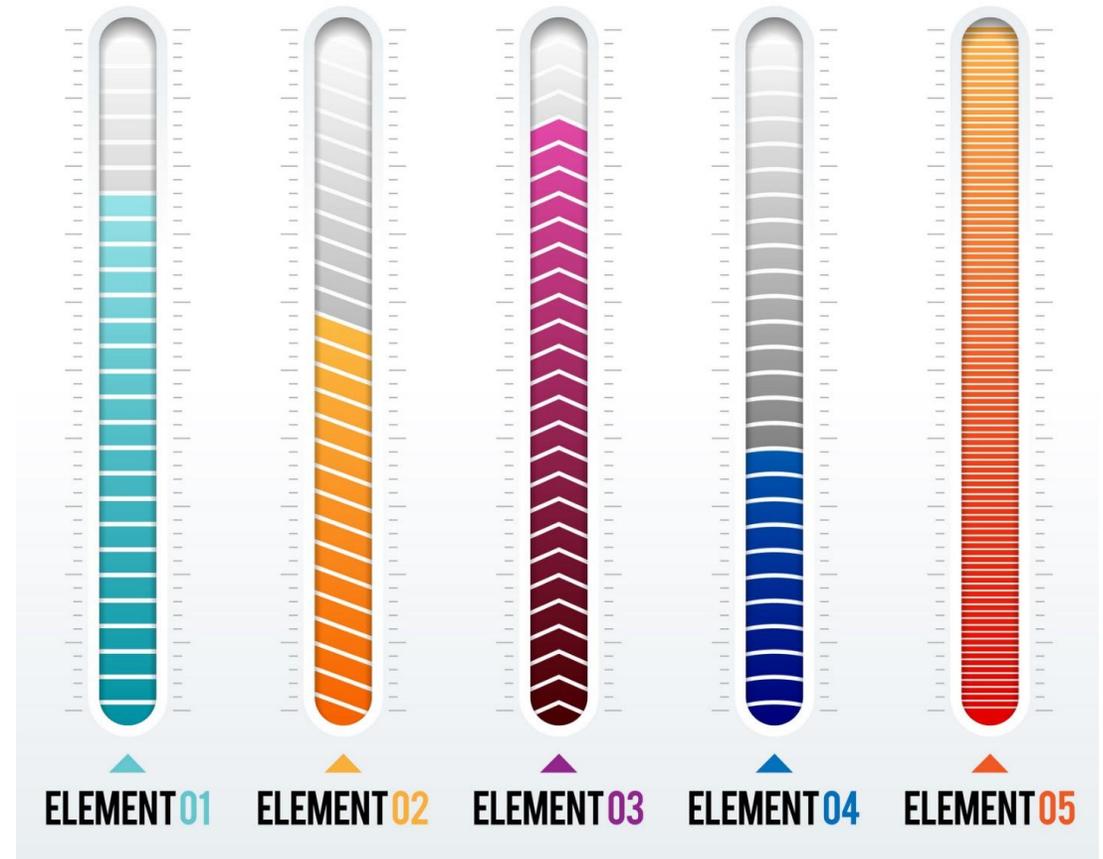
Engagement

- Increased growth in Sustainability Offices and the levels of positions and structures
- Student interest and mobilization around issues such as climate change and food.
- Key Approaches: Social and community engagement, applied research (campus as a living lab), partnerships on and off campus, measurement based.



Reporting & Monitoring

- University Sustainability Reports
- Third-Party Reporting –Ex. STARS
- EMIS – Energy Management Information Systems



Breadth of Issues

Transportation Demand Management

Energy and Climate

Water

Food

Procurement

Waste

Natural Environment

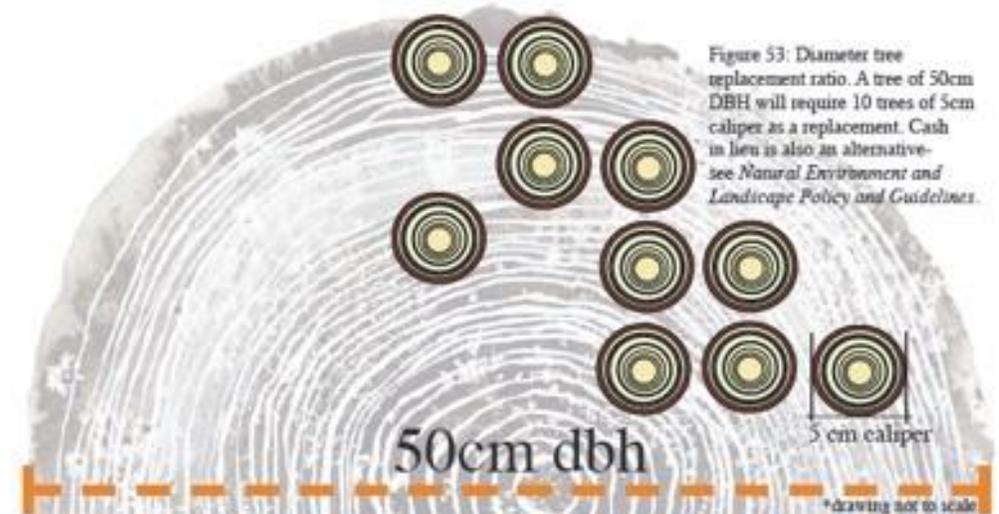
Social Sustainability

physical dimensions of the tree(s), and tree protection strategies. The grounds manager must approve the plan before any work can begin. The plan will be used to assess tree damage and the appropriate compensation.

A project that requires the removal of a tree must replace the tree with an equal 1:1 ratio of new vegetation as measured in trunk diameter at breast height (DBH: 1.37m).

GROUNDS MAINTENANCE

An in-house team of grounds staff maintain campus grounds, this includes lawn mowing and trimming, planting, and maintenance of shrubs and trees. In the summer months, the lawns on campus are mowed on a bi-weekly rotation in order to service the entire University. In the winter months, outside contractors are responsible for snow clearing of Halifax campus walkways, roads, and parking lots. AC campus staff are responsible for winter maintenance on campus property.



Energy and Climate Change

- District Energy and Combined Heat and Power
- Green Building – New Construction and Major Existing Building Retrofits
- Full Scale – Energy Building Retrofits
- System and product upgrades
- Building Optimization Initiatives
- Renewable energy
- Transportation Demand Management



Investments

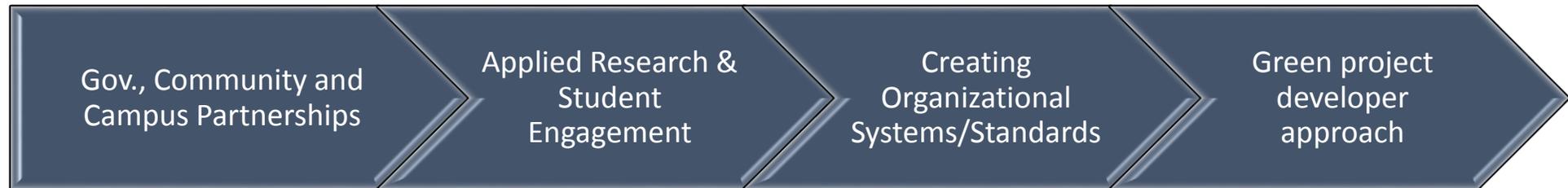
- Proactively pursuing partnerships (ex. RNG)
- People - Supporting diversity
- Identifying funding models and securing, managing financing
- Strategic partnerships



We Do University-Wide Sustainability:



How We Do it:



View from the Director's Chair

Carbon pricing, new funding sources, and the
mainstreaming of sustainability

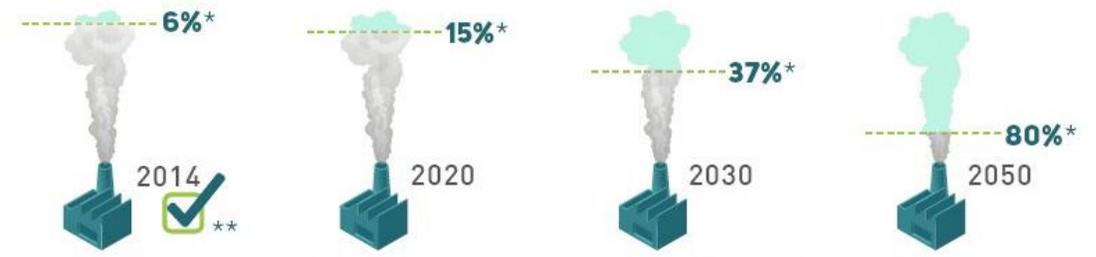
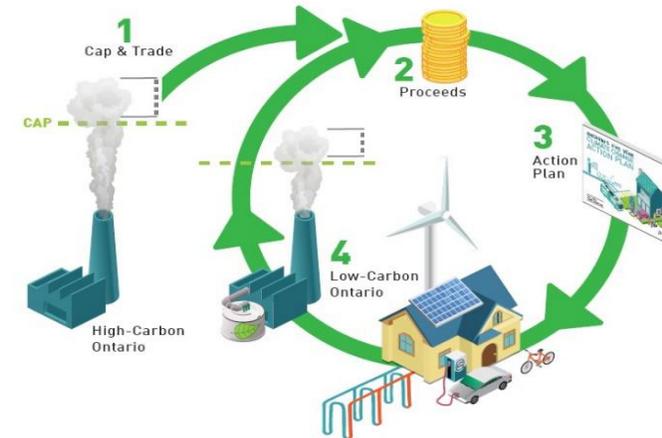
Paul Martin, Western University

Ontario's Climate Change Action Plan

SHECA 2018



- Designed to move Ontario to a low carbon economy
 - Cap & Trade
 - Green Energy Bank
 - Research and Innovation
- Carbon Reduction based on 1990 level
 - 2020 – 15% reduction
 - 2030 – 37% reduction
 - 2050 – 80% reduction



Ontario's Cap & Trade Plan

- Cap & Trade
 - Auctions to sell allowances
 - \$1.8 to \$2.0 Billion
 - Provide funds to incent GHG reductions
 - Free Allowances to:
 - Companies at risk of leaving the province (carbon leakage)
 - Public institution
 - Three types of participants:
 - Mandatory – above 25 K tonnes
 - Voluntary – between 10 K – 25 K tonnes
 - Non-participants – under 10 K tonnes
 - Link with California and Quebec



Western Climate Initiative

[ABOUT THE WCI](#) ♦ [PROGRAM DESIGN](#) ♦ [EVENTS](#) ♦ [NEWS & UPDATES](#) ♦ [DOCUMENTS & RESOURCES](#)

Higher Ed Community

Actively Engaged in GHG reductions

SHECA 2018



- University and College sector actively engaged reducing Greenhouse Gases (GHG)
 - Switch from steam heating to hot water heating
 - Deep energy retrofits (heat recovery)
- Sector has all three types of participants:
 - Mandatory, Voluntary and Non-participants



Higher Ed Community

Impact of Cap & Trade on Sector

SHECA 2018



- Cap & Trade Participants
 - 11 Universities are participants
 - Received free allowances
 - All the colleges and the remaining Universities are non-participants
 - Paid gas utilities \$0.04 per M3
- Greenhouse Gas Reduction Plan
 - Non-participants received funds equal to free allowances
 - Participants and non-participants both eligible for innovation fund



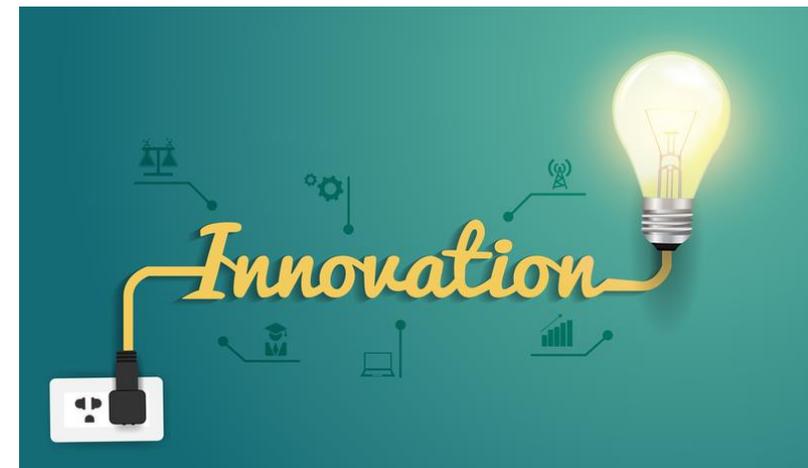
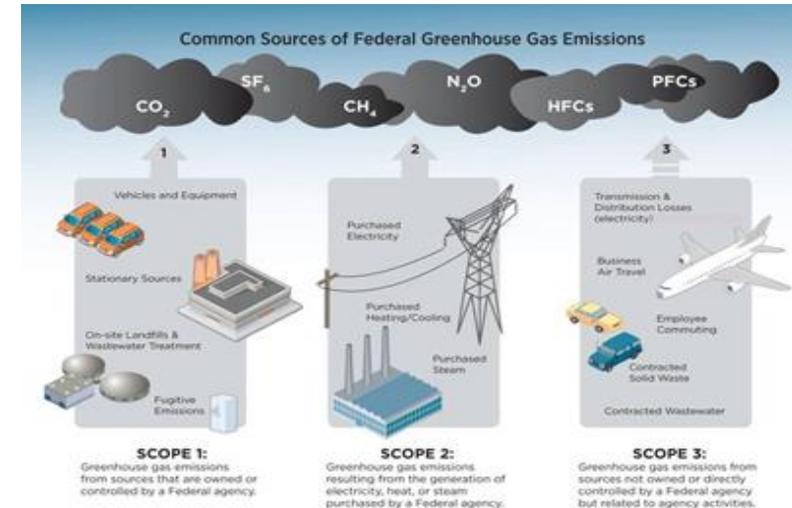
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Higher Ed Sector Funding



- Grant funding requirements:
- Non-participants
 - GHG scope 1 reduction & scope 2
 - Spend grant by March 31, 2019
 - Project preapproved by Ministry
 - Regular reporting required
- Innovation Program
 - Same as above plus each project ranked by a group of peers and ranked
- Loan Fund - \$300 M
 - Projects preapproved by Ministry
 - GHG scope 1 reduction
 - Project finished by March 31, 2021
 - No advance on funds, loan repayable in 20 equal installments



Western University

- GHG emissions – 49.6 K tonnes
 - Supplies Hospital steam
- Mandatory participant
- District heating system
 - Core campus
 - 5 steam boilers
 - Serves 80 buildings
- 20 stand alone buildings

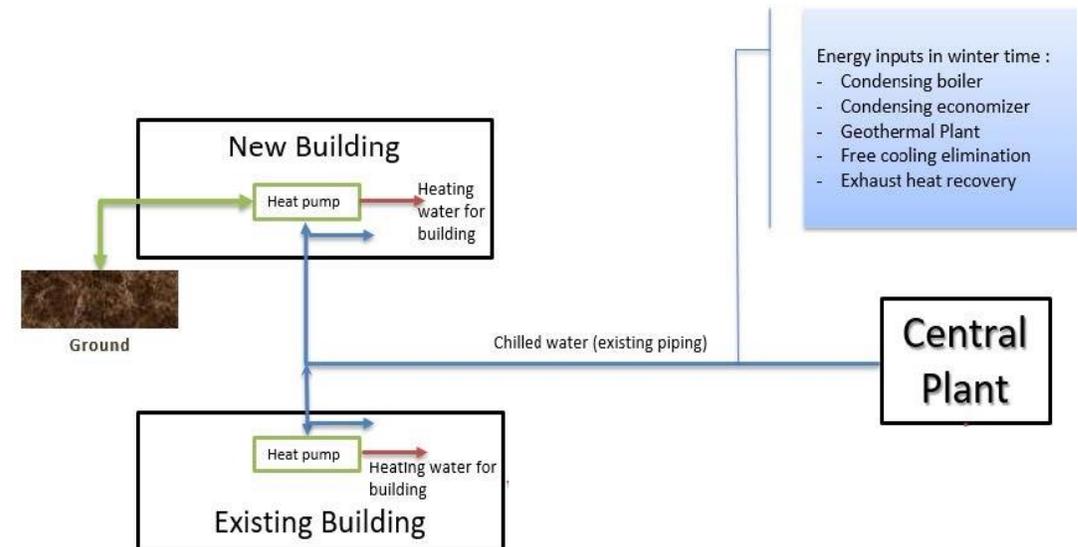


Western University GHG Reduction Plan

SHECA 2018



- Deep energy retrofits on all buildings
- Heat recovery (e.g. heat pumps, FGRU)
- Convert campus from steam heating to low temperature heating water
- Geothermal energy and solar Photovoltaic systems
- Chilled water loop changed to thermal loop transferring excess heat to other buildings



Western University GHG Reduction Projects

SHECA 2018



- Deep energy retrofit and introduction of a heat pump into:
 - New building < 10 years old
 - Older building > 50 years old
- LED lighting in both buildings
- Optimization of chilled water system
- Insulation installation
- Installation of economizer on steam boiler



Bringing Students into the Fold

Students substantially contributing to food operations at
McGill – Living Labs

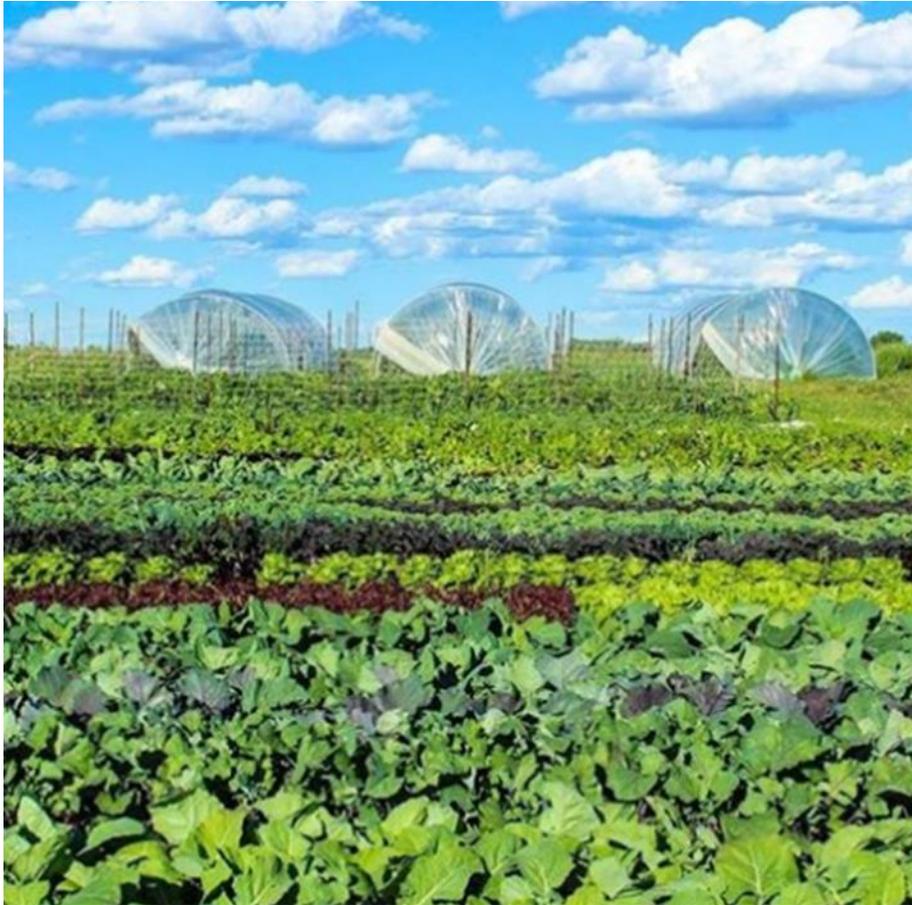
Prof. Caroline Begg, McGill University

Student Engagement in Sustainable Food Operations

- The subject of my talk is the origin and impact of two student-run projects on sustainable food at McGill.
- My role in the Macdonald-Student-run-Ecological-Garden (MSEG) and the Out-of-the-Garden-Project (OGP), has been as a mentor, supervisor of research projects/courses and as a resource person.
- The projects started with active student interest, then a research project, accessing funding and then initiating the project.
- The projects have focused on engaging with students and staff on both campuses. A key point has been maintaining communication with various departments and the administration.
- Note MSEG has been in operation for 9 years and OGP for 5 years.

Macdonald Student Run Ecological Garden (MSEG)

SHECA 2018



- MSEG was founded 2009 as 4 small plots (30 m²) in the Mac community garden.
- It moved to the Hort centre, to a field in the Morgan Arboretum and since 2015 to its final place at the Macdonald Campus Farm
- A 1.5 ha intensive vegetable farm: CSA and markets
- MSEG' s mission is to create a learning environment for-students-by-students and bridge the knowledge gap between food and farm. MSEG supports the movement towards higher awareness of food traceability and provide organically grown, ethical, local produce to the McGill and Montreal communities.

MSEG and Students



Managers and interns for 2018

2012 Catalyst Award, McGill Office of Sustainability;
McGill Seeds of Change Crowd funding: MacAction
High Tunnel (200% success); SPF funding 2010-2017

- MSEG's management plan requires that students have a 2-year commitment. They are hired as interns the first year and then become managers the second year.
- MSEG has 75 shares/baskets (90% to staff and students on both campuses) with the CSA and sales at 3 markets: Marché Ste Anne, McGill Farmers Market and Concordia.
- MSEG managers and interns work 50 – 60 hours per week throughout the summer season, and a minimum of 25 hours per week during the school year.

MSEG and the community



Marché Ste Anne

McGill Farmers Market



- MSEG has reduced student rates for its baskets and provides recipes and how to cook all its vegetables.
- MSEG offers educational tours for several McGill classes, student research projects, internships and extensive volunteer opportunities (over 100 days a year have volunteers working at MSEG).

MSEG and Power Skills



Interns and managers 2016

- MSEG's management strategy is built on education and communication.
- Interns are trained from the beginning to successfully and efficiently manage a farm, and thus leave equipped with a base set of tools (HR, time management, budgeting etc.) with which to run a business.
- Most of the students who have graduated from MSEG have gone onto careers in sustainable food systems

Out-of-the-Garden Project (OGP)



- OGP, established Fall 2013 was based on a 4-student research project in 2012.
- Students wanted meals that were reasonably priced, from local food sources and with diverse recipes.
- OGP is one of only two on-site food outlets on the Mac campus.

Out-of-the-Garden Project (OGP)

- **Mission statement:** The primary goal of the project is to provide a healthy and sustainable food option for students.
- The project aims to create a closed-loop food system in which food grown by the campus farms (MSEG, Horticulture Center and Mac poultry) is processed and served.
- Food is also sourced from local farms. Disposable dishware items are minimized.

Awards received and grants applied for and received

- Mary H Brown Endowment Fund: 2013, 2014, 2015
- Sustainability Project Funds support 2013
- Macdonald Campus Student Society funding 2013
- McGill Catalyst Award 2014



Out-of-the-Garden Project (OGP)

ON THE MENU THIS WEEK
MAR. 27 & 28

SANDWICH
ROASTED VEGGIE SANDWICH
INCLUDE: EGGPLANT, RED BELL PEPPER, RED ONION, ZUCCHINI, ARTICHOKE
WITH AFRICAN PEANUT KALE SOUP

SMOOTHIE
CHOCOLATE TORNADO SMOOTHIE

DESSERT
GOOEY BLONDIE BROWNIE
MATCHA POUND CAKE WITH LEMON ICING

CEILIDH | CENTENNIAL CENTRE
10:00 AM - 2:00 PM

Sandwich \$4
Soup \$3
Combo \$6
Smoothie \$3
Desserts \$1

- OGP offers members the opportunity to gain experience in business, food preparation, food service, marketing, meal planning, group work, and administration.
- It provides students with access to food education in addition to food service.
- Club volunteers have the chance to grow from kitchen helpers to kitchen managers, to administrators and business managers.

Out-of-the-Garden Project (OGP)



UGLY HARVEST + OUT OF THE GARDEN PROJECT



*Try the New
Bagelution!*



10 AM - 2 PM | Tuesday Feb 13th | Ceilidh Pub

Check us out: @uglyharvest on Facebook and Instagram

- OGP is strongly supported by students and gives students an opportunity to become engaged in all aspects of the food system.
- They can volunteer at MSEG or partake in the development of new food products.
- Workshops on food preservation have been run by Human Nutrition students on stage.

Challenges

- The McGill system has some difficulties with “living labs” as educational opportunities.
- Institutionalizing MSEG and OGP has been slow, mainly because these two projects do not “fit” within the system.
- However, the two projects are well known on both campuses and have extensive support from students; they have provided many learning opportunities about sustainable food systems to both staff and students.