The Sustainability Office:
Engagement Plan & Recommendations

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Acknowledgements

Executive Summary

The Sustainability Office (SO) at the University of Toronto St.George campus has identified that students are unaware of sustainability, specifically sustainability initiatives promoted by the SO and the University of Toronto. As there is little awareness, the importance of the SO's work has long been overlooked, and engagement with sustainability has been limited. This acts as a major barrier for the SO to fulfill its mandate of inspiring, educating, and connecting and to drive a transition towards a lasting culture of sustainability amongst the student population. As a result, the Sustainability Office put forward a project to determine how to effectively communicate and engage with students to increase awareness of and action on sustainability while extending their reach to more students. Group 2 of the *ENV461: University of Toronto as a Living Lab of Sustainability* has been tasked with developing a communications and engagement plan to address the issue and provide a toolkit which provides short-term and long-term recommendations aimed at increasing engagement and the SO's role in UofT's culture of sustainability.

To complete this project, academic and grey literature were examined, a Gap Analysis that assessed the performance of Sustainability Offices in a variety of North American universities in comparison to UofT's SO was completed, and a two-part Toolkit was created based on the findings. The Literature Review and Gap Analysis were foundational in creating our three deliverables: a Toolkit composed of A) Communication/Engagement Plan and B) Strategic Recommendations and a University Climate Change Coalition (UC3) Case Study.

The findings from the literature review, complemented by guidance from Professor John Robinson, quickly led to the conclusion that *providing the student population with sustainability information does not translate to behavioural change*. Instead, if the SO is to begin driving a culture of sustainability on campus, engagement is crucial. A gray literature examination and interviews conducted with sustainability offices across different universities helped identify gaps that were integrated into the Toolkit. Moreover, the Gap Analysis included eight best practice recommendations, such as the necessity of a definition of "sustainability," a detailed sustainability strategy, and a communications and engagement plan (our deliverable). Following the aforementioned research, recommendations were developed into a Toolkit (see Appendix D) to further enable the SO to meet their goals, while remaining cognizant of the lack of resources and the decentralized nature of UofT. They highlight the importance of collaborating with other actors in the university, such as student groups, residences, and faculties. Part A of the Toolkit was then applied to the University Climate Change Coalition (UC3) commitment to demonstrate that applicability of the recommendations suggested.

This project is significant because sustainability is a growing concern for higher-education institutions and society as a whole, as continuing down an unsustainable path compromises the social, economic, and environmental wellbeing of all. The need to incorporate sustainability principles into decision-making is more pressing than ever. With the recommendations proposed, the Sustainability Office can play an important role in driving a culture of sustainability at UofT. Beyond that, institutional changes are required at the University of Toronto if it is to become a leader in the sustainability realm.

Topic Area, Scope, and Objectives

Sustainability is a growing concern for institutions worldwide, and it is gaining traction in the university context as an aspirational economic, social, and environmental goal. Sustainability amongst the student body in post-secondary institutions translates to events and initiatives to educate and motivate individuals about related issues and actions. However, sustainability initiatives and events on campus often occur without being communicated effectively, leading to a lack of awareness around and engagement with sustainability. This acts as a barrier in driving a culture of sustainability on campus that would influence sustainability not only on campus but also off-campus as sustainability-minded individuals enter the workspace.

Evidently, communication and engagement strategies play an important role in transferring and translating information. This is particularly important for sustainability, as many lack a holistic understanding of the term and its relevance in daily life and in economic, social, and environmental contexts. Through *ENV 461: University of Toronto as a Living Lab of Sustainability*, under the supervision of Professor John Robinson and Anjali Helferty, and working alongside the Sustainability Office (SO), our project seeks to develop a communication and engagement plan to effectively communicate sustainability initiatives and information and increase student engagement with sustainability on the St. George campus. With the approval of our clients, Jennifer Puskar and Dione Dias, the scope was defined to increasing awareness around sustainability and increasing the scalability of the SO's initiatives amongst the student population at the University of Toronto St. George (UofT) campus. This would enable the SO to drive a transition towards a culture of sustainability on campus.

The SO operates under the Facilities and Services Department and acts as a resource hub for sustainability awareness, services, and collaboration on campus. They also engage the campus community through a variety of programs, social media, and outreach. The principal problem the SO sought to resolve is the lack of awareness around sustainability and UofT's sustainability-related initiatives amongst students, staff, and faculty on the St. George campus. This also relates to the SO's struggle with the

scalability and reach of their events and initiatives. As mentioned previously, this lack of awareness is one of several barriers in developing a culture of sustainability on campus.

While the overarching problem has been identified above, we have also identified several other barriers that prevent the SO from effectively disseminating sustainability-related information on campus and drive a culture of sustainability on campus. Through conversations with the SO and personal observation, we deduced that the *methods of communications* that are currently employed by the SO are insufficient in reaching a large number of students on campus. Although their social media platforms are visually appealing and actively communicate information, most of the students who engage with these platforms and the SO's events and initiatives are students who already have an interest in sustainability. Another barrier that contributes to the lack of awareness surrounding sustainability at U of T is their *minimal reach and scalability* in terms of communication and programming across campus. The following two factors contribute to this barrier: the SO is *small in size* and *lacks both the financial and human resources* required to accomplish their mandate. The *decentralized nature* of UofT only exacerbates the aforementioned issues as the St. George campus is very large and lacks a centralized administration. Students associate more with their respective faculties and colleges than the university as a whole, which contributes to the lack of awareness about sustainability amongst students because it makes it more difficult for the SO to reach students who are not already interested in sustainability.

Thus, our objectives for this project are to resolve the aforementioned issues by creating a Toolkit that includes short-term Communications and Engagement Plan and long-term Strategic Recommendations for the Sustainability Office to effectively communicate with students and begin to build a culture of sustainability on campus. To complete these deliverables, we firstly consulted academic and grey literature to understand the most effective ways of communicating information and encouraging engagement surrounding sustainability in higher education institutions. We also conducted online research and interviews with universities across North America to create a Gap Analysis based on their communication and engagement plans. This was done to understand what other universities have accomplished and how they overcame challenges they faced. Once our Toolkit was completed, we applied the

Communications and Engagement Plan part to the University Climate Change Coalition (UC3) to display how it can be used by the SO.

Methodology and Deliverables

Methodology

To complete our deliverables, we conducted a literature review and a gap analysis. The literature review included both academic and grey literature, and a gap analysis identified the sustainability practices adopted by some of North America's top universities in comparison to the University of Toronto. The Gap Analysis was completed by reviewing their websites and conducting interviews with staff at the Sustainability Offices. The following is a description of the aforementioned methods:

1. Literature Review (Academic Resources and Grey Literature):

The literature review (See Appendix A) provided an overview of effective communication and engagement strategies in higher institutions. The literature review informed both the Communication/Engagement Plan (See Appendix D) as well as the Strategic Recommendations (see Appendix D). The literature review consisted of the following subsections:

* Channels and Types of Communication
* Targeting Your Audience
    - Work: Local and Experiential Engagement
    - Home: Sustainability-Themed Living Learning Communities
    - School: Sustainability by Discipline
* Technical Dissemination and Barrier Management
    - Frequency's Role in Engagement
    - Management of Communication Barriers.

2. Gap Analysis:

The objective of the Gap Analysis (See Appendix B) was to identify sustainability-related communication and engagement initiatives implemented at other universities in order to understand the gap between what is being done at other institutions and what needs to

be done to fill 'gaps' at UofT. The purpose was to determine ways in which UofT can improve the level of awareness amongst students about sustainability by identifying the type of communication methods used as well as the engagement initiatives deployed in other universities. Additionally, the Gap Analysis determines how other universities measure success for their engagement initiatives and whether student awareness about sustainability has increased. A systematic process was developed to determine which universities will be examined for the Gap Analysis. The selection process consisted of reviewing four different university ranking systems [Shanghai Ranking Consultancy Academic Ranking of World Universities, Times Higher Education (THE) World University Ranking, TOP UNIVERSITIES Ranking and The Sustainability Tracking, Assessment & Rating System (STARs)], and identifying which North American universities were consistently ranked within all three. Universities that were ranked throughout all three systems were selected (See Appendix B: Table 1.).

3. Interviews:

The websites of universities selected were browsed for information regarding their communication and engagement initiatives pertaining to sustainability by reviewing their Annual Sustainability Reports and various sustainability communications and engagement plans (See Appendix B: Table 3 and 4). Information that was not accessible or available through online documents and websites was obtained through interviews conducted via email with the respective sustainability offices (See Appendix C to review interview questions and responses).

Deliverables:

Based on our methodology and data collected, we analyzed and condensed our findings into three deliverables for the SO. The first is a Communications/Engagement Plan (see Appendix D), which will be used by the SO to create messaging and engaging effectively with students through online platforms and face-to-face engagement pertaining to sustainability-related initiatives. The second is a set of Strategic Recommendations (see Appendix D). If applied, these recommendations would enable the SO in driving a culture of sustainability on campus and increase the scalability and

reach of their initiatives. Lastly, the Toolkit was applied to the University Climate Change Coalition (UC3) and a Case Study was developed (see Appendix E).This case study is an application of Part A and Part C of the toolkit to display how it can be used to promote and disseminate a specific initiative.

Main Findings from Literature Research and Gap Analysis

Literature Review Findings

The Literature Review (See Appendix A) was foundational directing our further research and creating our Communication/Engagement Plan (see Appendix D) as well as our Strategic Recommendations (see Appendix D). All the findings indicated that engagement is key to increasing student awareness about sustainability. The three subsections of the Literature Review are Channels and Types of Communication, Targeting Your Audience (Work, Home, and School), and Technical Dissemination and Managing Barriers. First, we found that two-way engagement allows for the receiver to retain information and ensures both parties understand the messaging and feedback. Second, we learned that utilizing a combination of channels is the most effective way to communicate because context often dictates the best channel for a message. Third, upon reviewing the data collected, we learned that framing information in a positive manner that highlights benefits, incorporating incentives, using familiar language and themes to target messaging to a specific audience, and demonstrating the individual and societal benefits associated with the information leads to higher student engagement. Fourth, we found that engaging directly with student lifestyles on campus can be an effective way to encourage behavioural changes. For example, student residences are key spaces to use as sustainability-themed living-learning communities. Finally, we deduced that experiential knowledge is key in creating program-specific awareness surrounding sustainability. Hosting events and workshops and enabling student participation in volunteer and internship opportunities are ways to incentivize students to engage with the SO and sustainability in a way that relates to their academic and professional interests. The literature review provided an academic basis for our recommendations and guided further research into various applicable methods of

engagement, obtained through the Gap Analysis and reflected in the Communications/ Engagement Plan and Long-Term Strategic Recommendations.

Main Conclusions

Based on our methodology and the data collected throughout the semester, our group has three main findings that are reflected in our Communications/Engagement Plan (See Appendix D), Strategic Long-Term Recommendations (See Appendix D), and the University Climate Change Coalition (UC3) Case Study (See Appendix E). The three findings are as follows: the importance of face-to-face strategic engagement, the necessity for long-term operational changes within the SO, and resource management.

First, we learned of the need for *face-to-face strategic engagement*, which involves targeted two-way engagement between the SO and various groups and individuals across campus in spaces like classrooms, residences, colleges, and common rooms. For students to learn about sustainability, they need to be involved in engaging activities in various spaces. Early in the semester, we identified that the information deficit model was inaccurate because spreading information and simply educating doesn't lead to behavioural change. This indicated that creating a communications plan for the SO would be obsolete, as Jen and Dione were hoping to understand how they could drive a culture of sustainability on campus. This finding changed the direction our project, and resulted in developing a project that was larger in scope and in impact. Additionally, the importance of face-to-face engagement informed our Toolkit.

The second overarching conclusion is the necessity for *long-term operational changes within the SO* to achieve its mandate of "inspiring, educating, and connecting."[1] These changes primarily involve extending existing partnerships and pursuing new programming opportunities across campus (See Appendix D). Extending existing partnerships and developing new ones would contribute to resolving the SO's issues of reach and scalability, as we determined the SO is lacking in its relationships with

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[1] http://www.fs.utoronto.ca/SustainabilityOffice/AboutUs

various key entities and actors around the UofT. For example, the SO may consider pursuing partnerships with residences through sustainability-themed living-learning communities and with students and faculty in differing programs through discipline-based partnerships in order to reach students at home and in classrooms or through their programs. Through our Gap Analysis and our personal experiences in attempting to navigate the SO website, we also recommended that the SO may focus on making information more accessible by updating the website to make it more intuitive, modern, and comprehensive.

Our third overarching conclusion is *resource management*. From our conversations with Jennifer and Dione, we learned that there are many activities the SO would like to pursue, but lacks the human resources to do so. This issue will be slightly mitigated now that the SO is looking to hire an Engagement Coordinator, but we also targeted several recommendations to alleviate that concern. This conclusion responds, again, to the SO's struggles with reach and scalability. For example, the Sustainability Office may initiate a volunteer program and appoint Program Ambassadors. We also recommend that the SO pursue partnerships with existing environmental student groups like the Environmental Students' Union (ENSU), University of Toronto Environmental Action (UTEA), Bikechain, and University of Toronto Environmental Resource Network (UTERN), to name a few. Other than that, the SO may focus on creating toolkits that consolidate sustainability-related information they've already provided in the past in one accessible location. Creating toolkits for residence dons, faculty, and other like-minded parties can help alleviate the resource management issue, because it removes the need for the SO's involvement every time a don, for example, wants to plan a sustainability-related event for their students. These changes would allow the SO to leverage these new and existing networks to enable a shift in culture on campus. Because the SO consists of two (soon to be three) full-time employees and thirteen work-study students, it is impossible for them to manage all that is required to inspire behavioural changes and a cultural shift. These networks would assist in ensuring this cultural shift is an organic one built off momentum rather than a top-down decreed change.

The three aforementioned findings were based on the data collected and are recurring notions throughout our three deliverables and our final recommendations. They also contributed to the future endeavours we believe the SO should consider pursuing.

Gap Analysis & Interview Findings

The Gap Analysis, supported by research collected from university websites and interviews as well as interviews, helped identify the "gaps" at the UofT SO and the ways those gaps may be filled by learning from other high-ranked North American universities' best practices. The Gap Analysis suggested the following created by the SO: a definition of "sustainability," a mission/vision, a detailed sustainability strategy that could inform all sustainability-related initiatives, a communications and engagement plan (our deliverable), tools for measuring success in order to make adjustments as required. The Gap Analysis also informed us that UofT SO should incorporate the various colleges by appointing representatives as well as appointing volunteers to help with the dissemination of sustainability initiatives by expanding reach. These recommendations address not only gaps at the SO, but ways in which the SO may deal with external issues such as the decentralized nature of UofT. Generally, the data collected legitimized some of the recommendations in the Toolkit by confirming that other universities have already successfully implemented and adopted those recommendations. The following paragraphs will discuss ways in which the UofT SO can fill in the "gaps" by following through the recommendations of the Gap Analysis, with a focus on three main themes; collaboration and partnerships, outreach and measurement, and academic incorporation.

First, the Gap Analysis findings emphasize the importance of collaboration and partnerships to effectively increase sustainability awareness among a larger student audience, which can be done at UofT by appointing sustainability officers in varying colleges to strengthen those partnerships. Further, our conversation with Harvard revealed that the most engaging events have been those where the Harvard SO partnered with other university groups and actors, allowing the SO to leverage multiple networks to attain larger reach. This aligns with our recommendation that the SO must

collaborate and partner with student groups, colleges, broader faculties and the Career Centre (Appendix D). Overall, these findings suggest partnerships are important to increase scalability and reach students that do not already have an interest in sustainability and more effectively engage those who do.

Second, the Gap Analysis provides us useful information on outreach and measurement. Data collected from the interviews also emphasized the importance of posters, as will be suggested in the section dedicated to Communication/Engagement Recommendations in the Toolkit (Appendix D). Moreover, the findings also align with the Strategic Recommendations that will be made in the Toolkit, in terms of measuring sustainability initiatives and making adjustments accordingly. McGill and Harvard measure sustainability initiative and event success by carrying out pre-and-post event surveys as well as observing the number of attendees at specific events, in order to figure out whether the intended impact was made and if adjustments could be made in the future. The Gap Analysis reviewed campaigns and tabeling events held by other universities pertaining to sustainability. Appendix B, Table 4 lists a number of initiatives that can be implemented to increase level of interest and engagement among students as well as different faculties.

Third, the gap analysis provided data on incorporating sustainability into academics. Interview responses suggested the incorporation of sustainability awareness into course curriculum as well as extracurriculars in order to increase awareness and hence engagement. The Caltech Sustainability Office pointed out that "one is not preferable to the other, but when these can be integrated, that provides the most meaningful, longest-lasting impact." This emphasizes that the integration of sustainability in both extracurriculars as well as curriculum can noticeably expand the reach, instead of integrating it into only one. However, this will require change at the institutional level. The SO office can work with their newfound partners to advocate for the inclusion of sustainability into courses across all disciplines. An example of this is The Student Educator Programs which provide opportunity to engage in sustainability related projects and receive a credit. For example, "Eco Leader" at Stanford, similarly to UofT "Dons," are students in the residence halls and work to raise awareness about

sustainability, and are required to take a sustainability course in the fall and spring, hence receiving a credit.

Overall, the data collected from the gap analysis informed our recommendations found in the Toolkit by identifying best practices being implemented at other North American Universities in three main contexts: partnerships, outreach and measurement, and academic incorporation. It led to the conclusion that in order create a culture of sustainability at the university level, sustainability must be integrated into programming as well as through engagement activities, but needs to be be communicated on a basic level first (definition, mission/vision, strategies, etc.). It is important to consider that communicating sustainability and increasing awareness about it is a multifaceted problem and requires a collaborative approach from all key actors in the university, but most importantly engaging with the student body.

Recommendations

Our recommendations for the Sustainability Office come in two forms: short-term and long-term recommendations. The short-term recommendations are in the Communications/Engagement Plan in the Toolkit and the long-term recommendations are in the Strategic Recommendations, also in the Toolkit (See Appendix D). This Toolkit can be used to assist the SO in creating messaging and engaging effectively with students on sustainability-related initiatives or events as well as for broader long-scale and long-term planning. The Communications/Engagement Plan is applicable to engagement opportunities conducted by the SO as they include recommendations on intention and goal-setting recommendations, initial awareness, and ways to increase engagement with students on campus. Long-term recommendations apply to the short-term as well, but more importantly offer strategic approaches of increasing the SO's engagement with students with the goal of building a *lasting culture of sustainability* and increasing scalability and reach. The long-term strategic recommendations include fostering connections with various campus actors through partnerships and programming, including with students groups, in residences, through volunteers, and with departments that are not directly associated with sustainability as well as

maintaining consistent measurement of all engagement activities. The following sections offer an overview of the Toolkit (Appendix D) and an in-depth look at the recommendations made to the SO:

Communication/Engagement Plan Summary - Short Term Recommendations

1. **Goal Setting:** A recommendation as mundane as setting intention may quickly be brushed over, but it is worth exploring and understanding why setting a goal is vital for successful engagement. Setting an intention, or mission statement (as discussed in the Gap Analysis), is important to maintain consistency and clarity throughout the activity so all parties involved, including the individual creating, hosting, or assisting an engagement activity focus their energy, avoid distraction, and most importantly present an impression of clarity to students partaking in the activity. This setting of intention ensures all members are on the same page and increases the likelihood of successfully achieving the goal at hand. In addition, setting goals and intentions provides a solid foundation to measure engagement, which will be discussed further in the strategic recommendations.

2. **Initial Awareness Campaign:** An obvious recommendation is to continue maintaining the SO's strong presence on online channels. Promoting future engagement activities on social media is a strong skill the SO already has, but the SO needs to upkeep their promotion on their website. We also recommend that SO expand their information to reflect a more diverse set of students by extending their newsletters to various program administrators outside Environmental Studies. Electronic graphics, such as posters, are another option to increase awareness, and can be used in places like the new Sidney Smith Common Room. While creating the aforementioned, the SO should remain cognizant of the importance of 'message framing' by offering as much clarity as possible to avoid misinterpretation of information - see A.2 in Appendix D for more information.

3. **Campus Engagement:** To increase the SO's engagement with a variety of students, we recommend the SO extends their tabling events to more common spaces with high traffic such as Robarts or Sidney Smith Commons. An additional space the SO can take advantage of is the 5 minute window before classroom

lectures begin. Short presentations with high energy, tailored to the specific discipline the class is involved with, will help increase the SO's campus presence and interaction with students not yet aware of sustainability in general. During engagement activities we recommend providing visual aids and incentives to draw in and maintain students attention.

Strategic Recommendations - Long Term Recommendations

1. **Programming and Partnerships:** We recommend the SO extend their relationships through various partnerships and programs including: Residency Programming, Faculty and Discipline Partnerships, Professional Incentive Program, Student Group Partnerships, Volunteer Outreach Program, Online Programming, and a Toolkit Program. Overall, these programs and partnerships are recommended to improve not only the SO's campus engagement, but their capacity to do engage. Implementing a residence program that promotes sustainability through a living-learning experience and partnering with various discipline departments strategically targets students in two main living spheres: home and school. Incorporating positions for student input is essential for them to feel valued and engaged with the programs, for example the Program Ambassador position (See Appendix D - Part B. 2 for details). Additionally, we recommend that the SO extend their reach to the Career Centre in order to act as a platform for sustainability related professional opportunities; targeting students in a third sphere - work. For a well rounded approach, we also recommend the SO work with student groups to improve dialogue and efficiency among the groups. This recommendation was made in light of the disconnect between student groups and the potential for the SO to act as a convenor to assist and work with students already dedicated to sustainability. Furthermore, building off the idea that working with students already invested in sustainable awareness, we recommend the SO instil a volunteer program to improve their human resource issue. Creating volunteer positions that target specific shortcomings of the SO, such as web design or community outreach, can be offered to students who are interested to volunteering with the SO but were not hired as work-study students. This increases the possibility of reaching the SO's goals on a tight budget. Finally, we have recommended that the SO improve their website and

include informative toolkits, tailored to specific actors and groups, to avoid repetitive email conversations and improve their online presence. These toolkits would also enable those already interested in sustainability to access relevant information.

2. **Measuring Engagement and Making Adjustments:** The final section of our toolkit signifies the importance of measurement as both a short-term and long-term goal. Collecting data during engagement activities will encourage the SO's engagement activities to expand and evolve in an informed manner. We presented a variety of different measurement tools that would measure both behaviour and effective engagement, such as student self-reporting, interviews, rating scales, surveys, and more. This recommendation falls under the long term section as the results of consistent measurement will have a continual effect as they are presented and analyzed by the SO.

Future Endeavours and Concluding Thoughts

Future Endeavours

Looking forward, we have devised several future considerations and research endeavours regarding sustainability that can be pursued by the Sustainability Office, some of which will require changes at a higher institutional level. We recommend that the Sustainability Office pursue these recommendations, either independently or in collaboration with other UofT entities and actors.

The first endeavour, based on our findings from the gap analysis, is that sustainability material must be incorporated into the *academic aspect* of the University of Toronto, rather than remaining on the operational side if sustainability is to truly permeate the culture of UofT. This integration may occur in curricula and through sustainability accreditation programs, An accreditation program that adds a notation to a graduating student's degree upon participation in a few sustainability-related courses, for example, may encourage students from various academic backgrounds to enrich their engagement with sustainability.

Second, our gap analysis only included North American universities, and there is an opportunity for further research that includes universities in the United Kingdom, Australia, and other regions. Creating a more *international gap* analysis would ensure the Sustainability Office is considering global best practices in its pursuit of a sustainability culture and contribute to aligning the University of Toronto with other leading institutions worldwide.

Third, there is more potential for the Sustainability Office to *strengthen relationships* with offices that play an important role in large-scale institutional change, such as the President's Office. While we have already mentioned the importance of organic and bottom-up momentum and change, institutional changes are necessary if UofT is to become a leader in the sustainability realm.

Fourth, we believe the Sustainability Office should work to develop a *Sustainability Portal*, which would act as a one-stop resource hub for all sustainability-related information. It would contain the Toolkits (see Section B.8 of Appendix D), information on ongoing initiatives and upcoming events campus-wide, and direct students to ways to get involved. It would additionally include a blog with student and faculty contributions. We also envision it would contain a log-in to provide targeted resources. For example, if a student is a student group leader and a residence don, they may log-in to receive resources specific to their roles. Further and more generally, we recommend initiating a program similar to Stanford's *Green Cardinal* – where students complete a survey based on which personalized sustainability actions can be recommended, tracked, and rewarded. Finally, this portal may also include an interactive, highly accessible, and visually stimulating map of UofT that engages students with information on different buildings' sustainability history and highlights hubs of sustainability-related research, or work, with links to further information and ways to contact those carrying out the research.

Fifth, we believe a greater effort has to be made to harmonize *tri-campus sustainability* across the St. George, Mississauga, and Scarborough campuses. This would require

collaboration between all three offices, but we believe this would be greatly contributive to ensuring a culture of sustainability gains momentum across all three campus and not just at the St. George one. Tri-campus collaboration also invites more innovation and a diversity of ideas to resolving the challenges of progressing towards social, economic, and environmental sustainability. Tri-campus alignment and harmonization will also contribute to set the University of Toronto apart as a global leader in sustainability due to its size, research capacity, and reputation.

Finally, we have identified potential for U of T to act as a *sustainability hub* and be a global leader in sustainability in higher-education institutions. To do so, we recommend further strengthening the relationship with the outside community, particularly because St. George is located in the midst of Toronto, a metropolitan city with potential for sustainability-related growth and engagement.

We are aware that the aforementioned are endeavours that the SO cannot accomplish single-handedly, and that's not what we are recommending. Rather, we believe these future endeavours are areas of research and work the SO may consider to further extend its reach and impact within UofT.

Concluding Thoughts

Because we made many recommendations to the SO, the two recommendations we believe are of the utmost immediate importance and achievability are updating the website and initiating a volunteer program. Updating the website (See Appendix D, Part B.7 - Online Programming and Visualization) would make information accessible to a variety of actors at UofT, and it would require recruiting a student with graphic design skills. The volunteer program (See Appendix D, Part B.5 -) would enable the SO to scale its programs on a much larger basis and extend programming to more effectively engage students, and seeing as the SO is planning an Engagement Coordinator, initiating and running this Volunteer Program may be one of their responsibilities.

Looking back, there are a few things that could have been done differently to complete this project more efficiently. First, in the early stages of the project, the objectives were unclear, but this could have been mitigated by having more external meetings with the SO early in the semester to establish a clear understanding of project objectives. Second, it may have been beneficial to distribute student surveys to try to understand why there is a lack of engagement or interest in sustainability, particularly because our target audience for this project is the student body. Third, it would have been beneficial if we contacted other universities earlier on in the semester to account for wait times and delays, and this would have been made possible if our objective was clear from the beginning as well.

Overall, we have completed this project with the end-goal of enabling the SO to drive a lasting culture of sustainability at the University of Toronto, St. George Campus. Along the way, we have learned of all the various barriers to building this culture, and we hope to have addressed them through our deliverables and recommendations. If the SO adopts our recommendations, we are confident that the SO would be prepared to effectively engage with students at UofT and begin to drive this culture of sustainability. Our interactions with the SO and with our clients, Jennifer Puskar and Dione Dias, have taught us invaluable lessons about the challenges and opportunities of driving a culture of sustainability at a large higher-education institution. The guidance we received from Professor John Robinson and Anjali Helferty greatly supported our research process, and they consistently provided an intriguing perspective on our work. We hope the Sustainability Office finds value in our findings, and we look forward to continuing to contribute to the transition to a culture of sustainability at the University of Toronto, as students and as alumni.

Introduction

In an epoch that demands timely action, as the Anthropocene's effects loom over the world's tireless efforts, questions surrounding the effectiveness of certain approaches is under investigation. For far too long, organizations have operated on the 'information deficit model', assuming that public skepticism or hostility towards sustainability is due to a lack of understanding, resulting from a lack of information. Research institutions, such as universities, have a crucial role to play in not only researching which approaches are most effective, but implementing those approaches themselves. In reviewing literature surrounding communicating sustainability in a university context, **this review has established that engaging students in a participatory manner that is geared towards their local work, home, and school circumstances, is the most effective way to communicate sustainability.** The previous model of one-way communication has failed to foster a sense of community and connection to the sustainability movement, which is required to create a campus wide culture of sustainability. The field of communications and sustainability has accepted that engagement is fundamental in dispelling personal distance from the effects of environmental degradation and the discretization of sustainability as an important issue. For the purpose of this paper, sustainability will be defined as follows: *an ideology that pursues the stability of the present generation's economic, social, and environmental needs without compromising the ability of future generations to meet their own needs*.

Effective communication results when the message from the sender is transmitted and decoded, as intended, by the recipient. Effective communication begins with a model that positions the message-sender as a transmitter who encodes the message, which then travels through communication channels to the receiver(s), who then decode it. There are a variety of factors that can contribute to the effectiveness and ineffectiveness of a message, which will be explored in this literature review. The first

section will detail which channels and types of communication are most effective. The second section is geared towards effectively targeting students based on their: desire to gain experiential knowledge (work), living arrangements (home), and discipline (school). The final section explores a variety of barriers to communication and how to manage them.

Channels & Types of Communication

Effective communication is a process and does not just depend on the message being delivered but also considers the different means used that make the delivery of that message successful.[2] Two of the main aspects to consider are the channels and method of communication. Mainstream channels include; print media, social media, print publication, verbal communication, telephonic, video conferencing, and others beyond the scope of this literature review.[3] Types of communication include; one-way, two-way, planned and unplanned communication.[4]

Numerous studies have been carried out in order to determine the perfect mix of channel and type of communication. However, there is no "perfect mix" and it depends on the circumstances in which communication is being carried out in but nonetheless, two-way communication and print publication have been determined to be very preferable for most situations.[5] According to research, print publication is superior to online communication because the information received through a printed channel is retained in memory for longer than that which is communicated online. The majority of organizations tend to carry out online communication in order to control cost due to the high cost of print publication, albeit online channels being the less favourable medium of

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[3] Creative Commons. (2012). Different types of Communications and Channels. In An Introduction to Organizational Behavior. Retrieved 11th, October' 2018 from https://2012books.lardbucket.org/books/an-introduction-to-organizational-behavior-v1.0/s12-03-different-types-of-communicati.html

[4] Windahl, S., Signitzer, H. B. & Olson, T., J. (2009). Using Communication Theory: An introduction to Planned Communication. London: SAGE.

[5] Magee, R. (2013). Can a print publication be equally effective online? testing the effect of medium type on marketing communications. Marketing Letters, 24(1), 85-95. doi:10.1007/s11002-012-9209-y

communication.[6] Social media or email correspondence are effective, to an extent, but often have difficulty in conveying information which is complicated and detailed. Moreover, emails can lead to an overload of information as the sender is likely to communicate information more frequently than is required.[7]

Beyond channels, research conducted validates that two-way communication is the most effective type of communicating in comparison to one-way and unplanned communication.[8] One-way communication, the message is delivered without feedback or suggestion required from the receiver. The lack of confirmation creates a potential for unclear reception of the message and can therefor misconstrue the intended theme, conclusion, or findings of the information. The receiver is likely to feel disconnected, for a variety of reasons, and lose interest in the message which eliminates any potential to exchange valuable insights.[9]

Two-way communication results when the receiver of the message acknowledges that they have received the message by providing feedback. This acknowledgement from the receiver is what makes two-way communication optimal, as it ensures that they understand the message in a manner that the sender intended.[10]. If reception is skewed, further clarification can be provided. Moreover, the receiver of the message, in two-way communication, has the opportunity to provide feedback which instills confidence and encouragement in them, further enhancing the communication process. It can also lead to interchangement of ideas and suggestions from the receiver.

[6] Magee, R. (2013). Can a print publication be equally effective online? testing the effect of medium type on marketing communications. Marketing Letters, 24(1), 85-95. doi:10.1007/s11002-012-9209-y

[7] Swenson, L. (n.d.). Disadvantages of using Email to communicate in a company. azcentral. Retrieved 17th, October' 2018 from https://yourbusiness.azcentral.com/disadvantages-using-email-communicate-company-6630.html

[8] Abbasi, H. M., Siddiqi, A. & Azim, U. A. R. (2011). Role of Effective Communications for Enhancing Leadership and Entrepreneurial skills in University Students. International Journal of Business and Social Science, 2(10), pp. 242 – 250.

[9] Kokemuller, N. (2017). The Disadvantages of One-Way Communication. Bizfluent. Retrieved 16th, October' 2018 from https://bizfluent.com/info-8307652-disadvantages-oneway-communication.html

[10] Vasileva, S. (2014). Planned and unplanned communication messages used for brand building. International Scientific Conference. Retrieved 11th, October 2018 from http://isc2014.ekonomskifakultet.rs/ISCpdfs/ISC2014-23.pdf

This creates a democratic environment and the information is perceived, by the receiver, as more credible.[11]

Engaging with students through two-way communication is of the utmost importance in effectively conveying information in a university context. Student engagement is a means of involving students in activities led by different university departments, faculty, staff, and the general academic community. In this form of communication, students are motivated to participate as it benefits their educational as well as social experiences at university. This can be done through arranging various events on campus including sustainability workshops, incorporating sustainability aspects in all other events happening on campus, rewarding volunteer opportunities, campaigns, fairs, and a variety of other ways which will be explored in the following section.[12] In order to attract maximum student engagement, these activities are recommended to offer rewards and formal recognition to students.[13] This kind of model can be implemented at the University of Toronto to attract the maximum number of students possible to sustainability initiatives on campus. It is essential to move beyond lecture style classroom learning and one-way communication concerning sustainability, and rather focus efforts on engaging with student in a participatory nature, so to explore existing student led sustainability initiatives and student commons, in order to reap the benefits of two-way communication.[14]

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[11] The Business Communication. (n.d.). What is two-way communication? Definition and Importance. Retrieved 11th, October' 2018 from https://thebusinesscommunication.com/two-way-communication-and-importance/

[12] Late, V. K. (2015). NCSU Initiatives for Faculty Participation in Sustainability Efforts. North Carolina State University. Retrieved 17th, October' 2018 from https://repository.lib.ncsu.edu/bitstream/handle/1840.20/33765/Late%2C%20Ketki%20final.pdf?sequence=1&isAllowed=y

[13] Volunteering Qld. (2013). Innovative Student Engagement: a perspective. Retrieved 17th, October' 2018 from https://volunteeringqld.org.au/docs/Publication_Innovative_Student_Engagement.pdf

[14] Senior, C. & Howard, C. (2015). The state of the art in student engagement. Front Psychol, 6(355). doi: 10.3389/fpsyg.2015.00355]

Targeting Your Audience

Work: Local & Experiential Engagement

A popular form of student engagement is 'experiential knowledge' and has proven to be highly impactful in fostering a campus wide sustainability culture. There is countless research that shows the importance of practical opportunities for post-secondary students. As most post-secondary students are generally looking for opportunities to strengthen workplace skills, such as leadership and management skills, research done at the University of Michigan demonstrates that students are more willing to learn about sustainability in a project-based environment.[15] Opportunities that are project-based and professional give students the adequate knowledge of sustainability whilst fulfilling their posted incentive of building skills and experience. According to the University of Arizona, in addition to sustainable lab courses, sustainability-based opportunities in local communities through service work and internships are also shown to be highly impactful ways for students to retain knowledge and gather an understanding of sustainability. In their findings, this opportunity is categorized as "real-world" learning; student integration into the real world equates to a balance of theory and practice.[16]

While there are challenges in post-secondary sustainability experiential education, for example academics not agreeing on how to teach sustainability, or designing such opportunities where there is a minimal ambiguity in the transition between theory and practice,[17] these challenges can be resolved when academics and course designers frame sustainability with the lens of value rather than a moral variable

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[15] Shriberg, M., & Harris, K. (2012). Building sustainability change management and leadership skills in students: Lessons learned from "Sustainability and the campus" at the university of michigan. Journal of Environmental Studies and Sciences, 2(2), 154-164. doi:10.1007/s13412-012-0073-0

[16] Brundiers, K., Wiek, A., & Redman, C. L. (2010). Real-world learning opportunities in sustainability: From classroom into the real world. International Journal of Sustainability in Higher Education, 11(4), 308-324. doi:10.1108/14676371011077540

[17] Brundiers, K., & Wiek, Arnim. (2013). Do We Teach What We Preach? An International Comparison of Problem- and Project-Based Learning Courses in Sustainability. Sustainability, 5(4), 1725-1746; https://doi.org/10.3390/su5041725

that is challengeable.[18] Sustainability is also challenged when framed on larger scales – disconnected from the local audience. Sustainability communicated to any demographic is effectively retained when the message is framed for a local context, rather than global. This is because people tend to be attached to places at smaller scales and rely on regional forms of media for relevant, local information.[19]

This point reinforces the need for course-based sustainability education that engages in service with community partners. "Community service-learning" integrated into courses creates a civil awareness of the local sustainability culture that is effective for students transitioning theory into practice. The study on students participating in this learning at the University of British Columbia included a list of local organizations and the different types of sustainability students could choose to learn. This experience allowed students to make a positive contribution and impact with their actions and ideas – building a sense of community and attachment to the sustainability movement.[20]

Home: Sustainability-Themed Living-Learning Communities

Another means of targeting students is through sustainability-themed living-learning communities, located directly on campus. In Torres-Antonini and Dunkel's study of sustainable campus housing initiatives in the United States, the authors divided the initiatives into three categories: green campus housing, sustainability-themed living-learning communities, and campus housing sustainability hubs.[21] Green campus housing refers to students living in a building that is up to green building standards, sustainability-themed living-learning communities refers to a group of students living in a

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[18] Carew, A. L., & Mitchell, C. A. (2008). Teaching sustainability as a contested concept: Capitalizing on variation in engineering educators' conceptions of environmental, social and economic sustainability. Journal of Cleaner Production, 16(1), 105-115. doi:10.1016/j.jclepro.2006.11.004

[19] Scannell, L., & Gifford, R. (2013). Personally relevant climate change: The role of place attachment and local versus global message framing in engagement. Environment and Behavior, 45(1), 60-85. doi:10.1177/0013916511421196

[20] VanWynsberghe, R., & Andruske, C.L. (2007). Research in the Service of Co-Learning: Sustainability and Community Engagement. Canadian Journal of Education, 30(1). Retrieved from https://eric.ed.gov/?id=EJ771857

[21] Torres-Antonini, Maruja, and Norbert W. DuNnkel. 2009. Green Residence Halls Are Here: Current Trends in Sustainable Campus Housing.Gainesville: University of Florida.

campus building where sustainable living is promoted and discussed, and campus housing sustainability hubs incorporate the two aforementioned living styles (page 14). The authors emphasize that these living communities do not have to be formally academic, but always include discussions on environmental concepts and encouraging a sustainable lifestyle (page 15). These discussions focus on how sustainable living contributes to overall personal and societal wellbeing and health. The sustainability hub, the third form of sustainable campus housing, is an aspirational model, where both sustainable lifestyle/education and green building standards are combined. This model includes collaborative and engaged learning at universities with the emerging interest in sustainability within academia. As interest in sustainability grows, the authors anticipate changes in campus living to manifest (page 21).

School: Sustainability By Discipline

In addition to blending student engagement with community service and living learning, research shows that designing and implementing sustainability *by discipline* is highly effective. This means to introduce sustainability in a way that does not contradict the core curriculum of a given discipline, and rather fits itself into the methods of that discipline. Providing extra-curricular and professional incentives tailored to a student's department will allow students to learn their disciplines skills in a practical way while simultaneously creating a critical connections between their field and sustainability.

Typically, students learn environmental literacy in their first year theory courses as separate topics and most students do not go on to take upper year sustainability courses. Take for example economic students, they would benefit from learning the theory and skills on critically assessing economic issues, such as consumerism, with a lens of sustainability.[22] Engineering students may benefit from gaining the skills and insight to think beyond the technical skills that gets them an output, but rather thinking about the greater picture of contexts and solutions through a critically framed

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[22] Green, T. L. (2013). Teaching (un)sustainability? university sustainability commitments and student experiences of introductory economics. Ecological Economics, 94(Complete), 135-142. doi:10.1016/j.ecolecon.2013.08.003

sustainability perception.[23] Students studying athletics and kinesiology should learn the impact of sports on sustainability and practical solutions to address this impact as well as 'sustainable sport management practices'.[24] Evidently there is a need to provide incentives to students, geared preferably to their discipline and local context, so that they may be motivated to learn and apply sustainability practices in their fields and lives.

Technical Dissemination & Managing Barriers

In discussing types and channels of communication, and the importance of engagement, the question still remains – how do you technically effectively communicate sustainability information on campus? Research has come to understand that engagement is the key to successful communication and targeting audience based on a variety of characteristics is fundamental. However, in this section the technicalities of communication will be discussed including: frequency or quantity of messaging, authority of the sender, and methods to eliminate communication barriers. Overall, communication should be consistent, but not overwhelming. Communication barriers such as complexity of messaging and insufficient contextualization should be eliminated, and information should be made accessible to students by using clear language and avoiding jargon. Other barriers are more difficult to eliminate, including the governance structure of an organization and the authority, or affiliation to authority, that a sender may have.

Frequency's Role in Engagement

Research has shown that there is no specific number or amount of messaging that is optimal. While it is necessary for communication to be iterative and repetitive, It is just as necessary to ensure the amount of information is not overwhelming. When recipients are overwhelmed with an influx of information it becomes difficult to

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[23] Fenner, R. A., Ainger, C. M., Cruickshank, H. J., & Guthrie, P. M. (2005). Embedding sustainable development at cambridge university engineering department. International Journal of Sustainability in Higher Education, 6(3), 229-241. doi:10.1108/14676370510607205

[24] Casper, J., Pfahl, M., McSherry, M. (2012). Athletics Department Awareness and Action Regarding the Environment: A Study of NCAA Athletics Department Sustainability Practices. Human Kinetcs Journals, 26(1), 11-29. https://doi-org.myaccess.library.utoronto.ca/10.1123/jsm.26.1.11

distinguish important data from unimportant data, which leads to people ignoring communications media like emails or newsletters. This results in recipients forgoing opportunities to participate in open forums or discussion boards, which promote important public dialogue and engagement. Creating a narrative and providing continuity through consistent, but not overly frequent, communication makes recipients more likely to engage.[25] This type of communication is also more likely to foster dialogue, or two-way communication, which is more effective than simply providing information.[26] To encourage engagement, it is best to provide readers with basic data, an opportunity to respond, and offer access to further information through a hyperlink or attached PDF. More generally, communication should be concise, straightforward, and relevant to the reader. As previously mentioned, in terms of communicating sustainability initiatives to students, it is best to tailor messaging to students dependent on their departmental and local affiliations.

Managing Communication Barriers

Making technical information more accessible is key to effectively communicating sustainability initiatives on campus. Accessibility pertains to eliminating communication barriers and determining how those barriers to communication relate to effectively disseminating a message. Common issues specific to communicating sustainability initiatives include complexity of messaging and insufficient contextualization. This often occurs when the sender presents information in a technical and highly knowledgeable way, leading the recipient to believe the message does not apply to them, as it has not been simplified to their level of understanding. This could also occur when information is communicated with little context, so the significance of the information is unclear to the reader. Another common issue arises when the sender and receiver have different perceptions of the meaning, value, or purpose of sustainability initiatives. The receiver may not feel a need to act on or engage with the information communicated – depicting

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[25] Azziz, R. (2013, January 25). Meeting the Challenges of Communicating in a Large, Complex, Heterogenous Enterprise. Retrieved from Huffpost: https://www.huffingtonpost.com/dr-ricardo-azziz/meeting-the-challenges-of_b_2759662.html

[26] Boyer, R. (2016, July 18). Achieving a Culture of Communication on Campus. Retrieved from The Chronicle of Higher Education: https://www.chronicle.com/article/Achieving-a-Culture-of/237120

the importance of a message is crucial. Information overload is another problem that arises, where there is a large number and range of messages constantly flowing. Recipients may find it difficult to distinguish between what is important and unimportant, leading them to disregard much of the information they are being sent. Methods to avoid the consequences of communication barriers include:

❋ *Using every day, plain, straightforward language that readers are familiar with. This depends on the audience, so if the target audience is students, using language that is familiar to them is key;*

❋ *Using short and clear sentences;*

❋ *Avoid using complex terminology if it's not necessary;*

❋ *Avoid jargon and acronyms (if an acronym must be used, provide a full version of the term the first time it is used); and*

❋ *Provide straightforward instructions when applicable.* [27]

Some communication barriers are more difficult to eliminate, and those disseminating information must develop unique methods to work around, or with, those barriers instead. For example, in the event a university governance system is decentralized, or if there is a lack of formal ties between the sender to relevant campus authorities, this may present challenges in effectively disseminating information to a specific audience. Authority and ties to authority play a vital role in effectively disseminating a message, as certain recipients may believe the sender lacks authority and consequently disregards the information. This tends to occur particularly if the sender and the recipient are affiliated with differing disciplinary backgrounds, which is particularly relevant in a university context. In the event that authority creates distance or a hierarchical nature between them and the receiver, top-down communication can act as a barrier. Overarching information that is provided in an authoritarian manner does not foster two-way communication. A lack of focus on face-to-face interaction, and

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[27] Hauatanga, T. T. (2011). Make your communications more accessible Quick tips for writers, communicators, designers and production houses.Wellington: Office for Disability Issues.

genuine engagement through feedback and debate, are common barriers to communicating information effectively. [28]

Authority and ties to authority play a vital role in effectively disseminating a message, as certain recipients may believe the sender lacks authority and consequently disregards the information. This tends to occur particularly if the sender and the recipient are affiliated with differing disciplinary backgrounds, which is particularly relevant in a university context. In the event that authority creates distance or a hierarchical nature between them and the receiver, top-down communication can act as a barrier. Overarching information that is provided in an authoritarian manner does not foster two-way communication. A lack of focus on face-to-face interaction, and genuine engagement through feedback and debate, are common barriers to communicating information effectively. [29]

Conclusion

In order to move towards a sustainable future, all research institutions must be more effective in disseminating information through engagement. It is common knowledge that sustainability requires collective efforts, and even one powerful research institution can derail or fail the sustainability movement – it is imperative that all higher education organizations understand their crucial role. **The research surrounding sustainability communications, in a university context, has shown that engaging students in a participatory two-way manner, as well as targeting them based on their local circumstances, is fundamental in raising awareness about sustainability and creating a connection to the movement.** Literature has yet to successful pinpoint what channels of communication are most appropriate and how frequent messaging should be conveyed. However, these two issues may be too specific to local context to make any ultimate and universal conclusions. There is

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[28] Djordjevic, A., & Cotton, D. (2011). Communicating the sustainability message in higher education institutions. International Journal of Sustainability in Higher Education, 381-394.

[29] ibid.

however strong evidence that suggests capitalizing on students desire to gain professional experience, and incorporating sustainable knowledge into existing disciplines and living arrangements generates a better understanding of and connection to sustainability. Regarding barriers to communicating sustainability, the sender must: balance between an overload of information and enough consistent messaging, simplify and create relevant sustainable information based on the intended audience, and managing their position of authority all in order to foster meaningful two-way engagement.

APPENDIX B: GAP ANALYSIS

Introduction:

This Gap Analysis is based on the best sustainability practices of other universities and identifies eight ways in which those practices can be incorporated at the UofT SO:

1. Sustainability Definition
2. Mission/Vision Statement,
3. Sustainability Strategy
4. Communication Plan
5. Engagement
6. Volunteer Program
7. Governance Structure
8. Measuring Engagement

University Selection:

In order to collect a range of best practices from other institutions, a selection process was carried out to determine which universities should be contacted. This selection process was done by reviewing four different university ranking systems [Shanghai Ranking Consultancy Academic Ranking of World Universities, Times Higher Education (THE) World University Ranking, TOP UNIVERSITIES Ranking and The Sustainability Tracking] and we then proceeded to identify which North American universities were consistently ranked within all three. The websites of universities selected were browsed for information regarding their communication and engagement initiatives pertaining to sustainability, and information that was not accessible or available on their websites was inquired through interviews conducted via email with the respective sustainability offices. Table 1 provides a list of the top seven universities under each ranking system (universities in bold were chosen).

Table 1. Rankings used to Select Universities for the Gap Analysis

The **bolded*** universities are those chosen for the gap analysis.

	Shanghai Ranking Consultancy Academic Ranking of World Universities	Times Higher Education (THE) World University Ranking	TOPUNIVERSITIES Ranking
Canadian Universities	1. **University of Toronto*** 2. **University of British Columbia*** 3. **McGill University*** 4. McMaster University 5. **University of Alberta*** 6. **University of Montreal*** 7. University of Calgary	1. **University of Toronto*** 2. **University of British Columbia*** 3. **McGill University*** 4. McMaster University 5. **University of Montreal*** 6. **University of Alberta*** 7. University of Ottawa	1. **University of Toronto *** 2. **McGill University*** 3. **University of British Columbia*** 4. **University of Alberta*** 5. **University of Montreal *** 6. McMaster University 7. University of Waterloo
American Universities	1. **Harvard University*** 2. **Stanford University *** 3. **Massachusetts Institute of Technology (MIT)*** 4. University of California, Berkeley 5. **Princeton University*** 6. Columbia University 7. **California Institute of Technology (Caltech)***	1. **Stanford University*** 2. **MIT*** 3. **Caltech*** 4. **Harvard University*** 5. **Princeton University*** 6. Yale 7. University of Chicago	1. **MIT*** 2. **Stanford University*** 3. **Harvard University*** 4. **Caltech*** 5. University of Chicago 6. **Princeton University*** 7. Cornell University

Data Collected:

Our team contacted a total of ten universities of which six responded to our questions. Due to time constraints, we are unable to incorporate the future responses that would have been completed in the coming months. This time constraint demonstrates the shortcomings of this Gap Analysis. Nonetheless, the interview and website information collected provided ample data for the Gap Analysis. With the help of those responses, we derived eight main ways in which the UofT SO can fill the 'gaps' discovered. The main focus of this Gap Analysis is to identify best practices being implemented at other North American Universities, and identifying ways that those best practices can be incorporated in the practices of the UofT SO. Tables 2, 3, and 4 display the data collected from the Canadian and American universities.

Table 2: Overview of Sustainability Analysis of Canadian Universities

Please note that this analysis excludes data collected from University of Montreal because the university website does not have any information pertaining to sustainability.

		University of Toronto	University of British Columbia	University of Alberta
High Level Sustainability Initiatives	**Have a definition for sustainability**	No	Yes	Yes
	Have a Mission and or Vision Statement	No	Yes	Yes
	Have a Sustainability Strategy	No	Yes	Yes
	Have a Sustainability Communications Plan	No	Yes	No
	Have a Sustainability Office (under what department)	Under Facilities (VP Operations)	Under Facilities (VP Admin and Finances)	Have a sustainability council
	Have a Advisory Committee	Yes	Yes	No
Online Platforms used to communicate sustainability	**Facebook**	Yes	Yes	Yes
	Twitter	Yes	Yes	Yes
	Instagram	Yes	Yes	Yes
	Youtube	Yes	Yes	No
	Institutional - wide sustainability website	No	Yes	Yes
Sustainability Initiatives	**Reporting to STARS**	No	Yes	Yes
	Energy Reduction Initiatives	Yes	Yes	Yes
	Waste Related Initiatives	Yes	Yes	Yes
	Repair Cafes	Yes (Bike Repairing)	Yes	Yes
	Sustainability Ambassador Program (Students gain a credit)	No	Yes	Yes
	Sustainable Event Certification	No	Yes	Yes
Types of Documents	**Communication/ Engagement Plan**	No	Yes, specifically for developing digital communication	As identified during the interview, In the process of developing one
	Sustainability Strategy	No	Yes	Yes
	Annual Sustainability Report	Sustainability yearbooks and reports	Yes	Sustainability discussed in the University of Alberta Annual Report

Table 3. Overview of Sustainability Analysis of American Universities

The collected data was used to develop and inform the interview questions.

		Harvard	Stanford University	MIT	Princeton	California Institute of Technology
High Level Sustainability Initiatives	**Have a definition for sustainability**	Using the Brundtland commission definition	Not stated explicitly on their on their website	Nothing on their sustainability website.	No	Yes
	Have a Mission and or Vision Statement	No	Yes	Yes	Yes	No
	Have a Sustainability Strategy	Yes.	They have sustainable principles: https://sustainable.stanford.edu/about/principles 1) Advance Sustainability Knowledge 2) Establish Sustainability as a Core Value 3) Minimize Environmental Footprint and Preserve the Ecosystem	No	Yes-Sustainability Plan	No
	Have a Sustainability Communications Plan	They have a roadmap to a sustainable community.	They have several governance structures (https://sustainable.stanford.edu/governance)	Have some effective communication strategies by successfully empowering all levels of the campus (students, staff and faculty).	No	No

		Harvard	Stanford University	MIT	Princeton	California Institute of Technology
	Have a Sustainability Office (under what department)	Yes	Yes	Yes	Yes	Yes - Under Facilities and Services
	Have a Advisory Committee	Have a council of student sustainability leaders (https://green.harvard.edu/group/council-student-sustainability-leaders)	Yes	Have a sustainability office team.	Yes - Princeton Sustainability Committee	Have a sustainability committee
Online Platforms	**Facebook**	Yes	No	Not specific to sustainability	Yes	Yes
	Twitter	Yes	Yes	Yes	Yes	Yes
	Instagram	Yes	Yes	Couldn't find one	Yes	not specifically for sustainability
	Youtube	Yes	Yes	Yes	Yes	No
Sustainability Initiatives	**Reporting to STARS**	Yes but no data.	Yes	Yes but no data.	Yes	Listed but no data
	Energy Reduction Initiatives	Yes	Yes	Yes	Yes	Yes
	Waste Related Initiatives	Yes	Yes	Yes	Yes	Yes
	Renewable energy initiative	Yes	Yes	Yes	Yes	Yes
	Transportation emission reduction	Yes	Yes	Yes	Yes	Yes

Table 4: Sustainability Initiatives in Other Universities

These examples can be adopted and implemented by the UofT SO.

Sustainability Initiative	Potential Campaign/ Event
Sustainable Transportation Reduce GHG emissions	Students that bike to school get free breakfast. (Implemented by Colorado State University)
Waste Management Food Waste Reduction	Waste Reduction competitions, can be implemented between disciplines/faculty and offices, or at the North American level through competitions such as RecycleMania (Implemented by Stanford University) Campaigns can be specifically targeted towards materials such as organics and food waste or single-use plastics. (Implemented by Colorado Universtiy)
National Sustainability Day on Campus or a Sustainability Awareness Week	A day dedicated to sustainability. Can include campus wide sustainability events or. Sustainability Awareness is seen (Implemented by University of Alberta)
Education and Awareness	Self-guided Sustainability Tours: the tour would be self-guided and information could to retrieved from the SO office. Information online includes a brochure with a map, and information about each stop on the tour. (Implemented by McGill University)
Energy Conservation GHG emission reduction	"Lights Out" Campaign. Notes can be posted near light switches and computer monitors to encourage energy conservation. (Implemented by Thomas Rivers University)

Best Practice Recommendations:

Below we have identified eight ways in which the SO at UofT can incorporate the best practices implemented at the six universities we contacted:

1. **Sustainability Definition:**

   UofT does not have a sustainability definition. 3 of the 6 universities we contacted have a sustainability definition which forms the basis for all sustainability-related work. Therefore, it is of utmost importance that SO determines how to define "sustainability", so that the students, as well as the office, has a rational basis of what sustainability means to them and how they can work towards it.

2. **Mission/Vision Statement:**

   The second way in which the SO can incorporate the best practices identified at other universities is by creating a mission and/or vision statement in order to clarify

what their ultimate goal is. This will inform the development of future sustainability related initiatives. This will clarify the ultimate perfect future the SO foresees in terms of sustainability on campus. For example, MIT's mission statement shows that it intends to achieve operational, educational, research and innovation excellence in order to deal with sustainability issues in a global scale; "*Our mission is to transform MIT into a powerful model that generates new and proven ways of responding to the unprecedented challenges of a changing planet via operational excellence, education, research and innovation on our campus.*"

3. **Sustainability Strategy:**

    The SO does not have an explicit and public sustainability strategy which is essential to guide the route the SO intends to take when coming up with sustainability initiatives or generally planning the future of sustainability at UofT, as is the case at other institutions. For example, Harvard's Sustainability Strategy is a road map for the University to operate a healthier and sustainable campus community. This objective of the strategy helps Harvard to plan accordingly, in order to achieve that ultimate goal (healthier and sustainable campus community). This strategy can create a specific route to follow in order to meet certain objectives. For example; Colorado University is using various campaigns that are implemented in light of a route towards waste reduction. They have targeted waste reduction towards specific materials such as organics and food waste or single-use plastics.

4. **Communication Plan:**

    It is essential for the SO to have a communications plan in order to disseminate sustainability information to student body effectively (one of our deliverables). For example; McGill has a very detailed communications plan that is solely there to make sure that sustainability related information is effectively delivered to students. McGill's Communication Plan includes a detailed consultation process with students, faculty and staff in order to come up with an action plan around sustainability and climate action on campus. It also includes engagement plans for students, faculty and staff through, for example, volunteers, online channels (newsletters, blogs), etc., in order to effectively disseminate sustainability related information.

5. **Engagement:**

   In order to increase engagement (in terms of sustainability), the SO can learn from a variety of engagement initiatives successfully implemented at universities such as Caltech, Harvard and McGill. Caltech engages students in a variety of initiatives such as energy consumption reduction competitions in campus housing, a student led dining sustainability team, a Green Laboratories Network, and a host of Earth Week initiatives. Caltech also proposes to engage students academically through the inclusion of sustainability information in course work and curriculum. McGill predominantly focuses on in-classroom presentations, tabling at a variety of events and hosting events in order to engage students with sustainable content. McGill also suggests posters are relatively effective when communicating sustainability initiatives, and the SO can also follow that recommendation by amending its campaigning tactics. McGill believes in "meeting people where they are" with regards to sustainability which allows them to engage at a basic level with sustainability in their context, rather than only providing sustainability related information exclusively at the SO and its initiatives. Harvard suggests partnering with other colleges at the University (e.g. Harvard SO partnered with Harvard Forests and Common Spaces for a sustainability initiative) in order to expand reach and attract more students, hence increasing engagement and scalability. An interesting initiative taken by McGill university is the promotion of Self-Guided Sustainability Tours. These are voluntary tours by individuals on campus and a map for the tour can be found online, along with details about each Sustainability related stop on campus.

6. **Volunteer Program:**

   McGill has created a volunteer program that promotes the dissemination of sustainability through Sustainability Ambassadors by giving classroom presentations, being present at tabling and large events. McGill also have volunteers known as Sustainable Event Consultants, who are tasked with ensuring events held by the SO are certified as sustainable. They also work closely with the student societies and their environment committees, as well as other student groups

across campus in order to disseminate sustainability information with the help of volunteers.

7. **Governance Structure:**

The decentralized governance structure of UofT has been identified as a barrier to effectively communicating sustainability. Interviews conducted with Harvard, a notoriously decentralized institution, suggest that working closely with colleges can act as a solution this barrier. Harvard's SO has sustainability managers for its biggest colleges (e.g., Business School, Kennedy School of Government, School of Public Health, Medical School, Graduate School of Education), who are able to disseminate information to a large portion of the Harvard student body. Colleges without sustainability managers reach out to student groups and faculty who are working on sustainability-related research/courses and Green Teams (made up of staff) to promote sustainability related information related to Harvard. MIT is having representatives appointed by the Provost from all five schools to represent their respective school in terms of sustainability. An example of incorporating different faculties in Sustainability related initiatives is waste reduction competitions at Stanford University between faculties.

8. **Measuring Engagement:**

In order to be able to measure the success of sustainability initiatives and events, the SO can carry out surveys and feedback forms, similar to Harvard and McGill, and can also set indicators for success (for instance, at McGill, they have a set of indicators that they assess, including teams' satisfaction with support provided by staff, what skills they learned, etc.) McGill also tracks the number of people showing up at events and/or how many participated in the programs. Moreover, they also monitoring social media platforms. Harvard carries out an after-action-review together with all team members to assess how the specific event was. Sometimes they also do a pre- and post-questionnaire to see if the event or initiative had the intended impact, and if there are any ways they could improve.

Conclusion:

The main focus of this Gap Analysis was to identify best practices being implemented at other North American Universities, and identifying ways that those best practices can be incorporated in the practices of the UofT SO. This has been done by identifying eight ways in which the UofT SO can incorporate other institutions best practices in order to fill their "gaps". By implementing these practices, the SO can anticipate positive results, since these practices have already been successfully implemented at other high ranking institutions. However, it is important to keep in mind that the implementation and incorporation of these practices would require additional resources, but guarantee positive results and hence is worthwhile (refer to Table 4 for initiatives that can be easily implemented without additional resources).

University: California Institute of Technology

Contact: Maximilian P. Christman

○ **Does Caltech have a sustainability office? What department does it fall under?**

Yes, Caltech has a Sustainability Office. I serve as the program manager for the Office under the department of Facilities Services and Integrated Planning.

○ **Does Caltech have a definition for sustainability? If so, what is it and where can it be found?**

Our definition and mission can be found on the homepage of Caltech Sustainability. Sustainability at Caltech aims to enhance Caltech's core mission of research and education by reducing Caltech's environmental impact and promoting stewardship within the Caltech community.

○ **Does Caltech have a vision or mission statement related to sustainability?**

See above.

○ **What kind of initiatives are in place to engage student in sustainability related activities?**

Caltech engages students in a variety of initiatives from energy consumption reduction competitions in campus housing, to a student led dining sustainability team, to a Green Laboratories Network, and a host of Earth Week initiatives, of course.

○ **What does Caltech believe is the most important way to engagement students with sustainability? Is it through course work and curriculum? Or campus wide events, such as campaigns on how to reduce waste or conserve energy?**

Students should be engaged academically and with extracurriculars. One is not preferable to the other, but when these can be integrated, that provides the most meaningful, longest-lasting impact.

○ **I went through the MIT Sustainability Office website but could not find a communications plan in order to effectively communicate sustainability initiatives on campus, do you have a communications plan?**

We have an internal communication plan which shapes our use of limited resources to write articles, manage events and update our website. One of the project managers splits her time between managing communications 1/3 of her time and the other 2/3 is focused on Food and Transportation.

○ **After carrying out a sustainability initiative or event, do you use any kind of tools to measure the success of the initiative? If yes, what kind of tools?**

We use survey monkey.

○ **What kinds of sustainability initiatives have been the most effective ones? (e.g. what kinds of events, workshops, etc.)**

This is a broad question and warrants a deeper dive as different events have been effective for different purposes. We have four events as part of our methodology which we repeat. 1. Sustainability Connect : An annual invite only event for all active sustainability committee members [see website / video] to discuss , debate and display current areas of focus; 2. Laborama: An annual interactive poster session of living lab work ; 3. Community forums: Open community wide input sessions; Design Implementation Workshop: Professionally facilitated event to develop vision and implementation strategies open to the entire MIT community.

○ **How do you incorporate all the 5 schools and one college to participate in sustainability initiatives? Or ways to make sure all the different schools and college have access to sustainability initiatives on campus?**

The Campus Sustainability Task Force and soon to be Pathways to Sustainability Leadership Steering Committee has representative appointed by the Provost from all five schools.

University: McGill University

Contact: Krista Houser

○ **Does the McGill Office of Sustainability have a communications or engagement plan? (other than the sustainability and environmental policies/Climate and Sustainability Action Plan)**

Yes. Toby has a communications plan and schedule for the year. Shona, copied here, is in charge of engagement programs, which she runs throughout the year as well. These engagement programs are relatively new and were developed specifically to increase engagement from the McGill community with sustainability. We also have a plan we are developing for the SPF.

○ **After carrying out a sustainability-related initiative or event, what kind of tools do you use to measure the success of said initiative? This can also refer to communication - is there a way you measure the success of an engagement strategy?**

It really depends on the event or initiative. Sometimes we have surveys, feedback forms, or report templates available. We often set indicators for success (for instance, at the SPF have a whole set of indicators that we assess, including teams' satisfaction with support provided by staff, what skills they learned, etc.) We also just track the number of people who came to our event and/or how many participate in the programs. Shona is also working on monitoring how new people get engaged in one program and then continue to engage in other programs thanks to that first contact. I know that we're also monitoring our social media, etc.

○ **What kinds of sustainability initiatives have been the most effective in disseminating sustainability-related information? (i.e. what kinds of events, workshops, campaigns)**

Some of our most effective communications for the SPF come from in-classroom presentations. Additionally, we table at different events, host our own events, and engage through our communications platforms. Posters seem relatively effective (e.g. Ban the Bottle campaign).

○ **How do you seek to reach students who are not already interested in sustainability (outside of environmental-related programs for example)?**

We purposefully table at events that reach more than these stakeholders. For instance, we table at Discover McGill, so that all first-year students get a glimpse of what is happening with sustainability at McGill. For the classroom presentations, we make sure to target faculties and classrooms that aren't often engaged in addition to those who are. I also think this is really linked to the program or initiative you are reaching them through. Designing initiatives that "meet people where they are" with regards to sustainability and allow them to engage at a basic level is also important.

○ **Is the Sustainability Projects Fund funded by McGill or do external donors contribute to it?**

The SPF is funded through a contribution from students (each student pays $0.55 per credit that they register for) and the University matches that amount dollar for dollar. The students pass a referendum for the fee every 3-5 years. Right now, the annual value of the fund is around $940,000.

○ **I saw the members of the team on the website, but does the Office of Sustainability have a volunteer program or are students otherwise directly engaged with the office?**

Yes. We have a few. Shona is in charge of most of them. We have a group of SPF Ambassadors, who are volunteers that spread the word about the SPF through classroom presentations, tabling, and hosting events. We also have volunteer Sustainable Event Consultants, who help certify events that are happening across the University. We also recently launched a Praxis leadership training program, that has a cohort of around 10 students who attend workshops intended to equip them with the skills needed to be sustainability leaders. SPF projects often have students involved as leaders, team members, employees, or volunteers. Otherwise, we work closely with the student societies and their environment committees, as well as other student groups across campus.

○ **Is there one initiative in particular that has been most successful in engaging with students concerning sustainability?**

It is really hard to say. All of our programs are different and engage different types of students. For instance, we have a lot of students interested in engaging with the SPF to start projects or join in once they are started. We have also had a lot of student interest and support in the Ban the Bottle campaign (also an SPF project). It seems like this is an accessible and actionable topic. People across the University are very excited about it and often bring it up when we meet them. I'll let Shona and/or Toby chime in if they think of something else. Finally, the Sustainable Events certification seems very popular.   Student groups are very excited about getting their events certified and the fact that we have student volunteers makes it engaging on that side as well.

University: Harvard University

Contact: David Havelick

○ **After carrying out a sustainability initiative or event, do you use any kind of tools to measure the success of the initiative? If yes, what kind of tools?**

We don't really use any particular tools or templates, but we do reflect in an after-action-review together with all team members. Sometimes we do a pre- and post-questionnaire to see if the event or initiative had the intended impact, and if there are any ways we could improve. Our office is always aiming for continual improvement, and engage with stakeholders on an ongoing basis to find ways to optimize our work and processes.

○ **What kinds of sustainability initiatives have been the most effective ones? (e.g. what kinds of events, workshops, etc.)**

The most effective initiatives have been the ones that we have institutionalized – and thus made sustainable. If we have worked with another school or office to make sustainability part of their work, we're able to move onto other things. The most effective events have been ones where we partner with another part of the University – for instance, partnering with the Harvard Forest and Common Spaces on this public

art exhibit related to climate. By collaborating with others, we're able to reach broader audiences by leveraging multiple networks.

○ **How do you incorporate all the 12 schools to participate in sustainability initiatives? Or ways to make sure all the different schools have access to sustainability initiatives on campus?**

Harvard is notoriously decentralized, so it is certainly a challenge to make sure all schools are informed about and have access to our programs. Our office has sustainability managers at some of the schools (e.g., Business School, Kennedy School of Government, School of Public Health, Medical School, Graduate School of Education), so they are able to disseminate information to those communities. At the Schools where we don't have a manager, we reach out to student groups, faculty who are working on sustainability-related research/courses, and Green Teams (made up of staff) to get the word out. We also send out monthly emails to our email list that is made up of people who have subscribed to our list at one time or another.

University: University of Alberta

Contact: Robert J. Summers

○ **What department does the Sustainability Council run under? For example is it under Facilities and Services?**

The council has recently transitioned from the Office of Sustainability, which was placed under the department of Facilities and Operations. After the reorganization, the office became the University of Alberta Sustainability Council. The Sustainability Council reports administratively to the faculty of Agricultural, Life and Environmental Sciences (ALES). However, the council will be governed by a group of deans representing all faculties across the institution.

○ **Exactly what kind of student engagement initiatives is the Sustainability Council responsible for planning and implementing?**

The council has a number of student engagement initiative; namely, Certificates in Sustainability (CIS), Scholars programs, the Sustainability Volunteer program, Sustainability Awareness Week (SAW), Orientation, Campus as a Living Lab, and the

Student Sustainability Summit.

The CIS and Scholars program provides an opportunity for more deep engagement of students. Other opportunities exist through our campus partners such as Energy Management and Sustainable Operations (EMSO), the Students' Union Sustain SU (student lead sustainability) and other on-campus related student groups.

- **What initiatives have been the most effective in engaging students with sustainability and increasing awareness about sustainability amongst students?**

Different projects engage students at different levels. Programs like the CIS (and associated courses) and scholars can be transformative learning programs that change student's in a major way. Many of our students have indicated that it changed their career or academic trajectories.   At the same time, events such as the Sustainability Summit or Sustainability Awareness week shift student attitudes and knowledge in small ways, but they reach a much larger number of students.

- **Do you have a specific communications plan targeting students, and increasing awareness about sustainability amongst students?**

We are in the process of developing such a plan.

- **Do you believe running campus wide sustainability events is an effective way to engage students and increase awareness about sustainability (such as setting up table to educate students about waste sorting)? Or providing experiential learning opportunities, such as sustainability related courses and volunteer opportunities is more effective?**

In my opinion, campus-wide events are an effective means of bringing initial awareness to a student body. However, it should be partnered with more targeted efforts in order to be highly effective. On our campus, we use a combination of campus-wide and targeted approaches to reach our audience. We use tabling, classroom presentations, volunteer opportunities and various means of education (courses, speakers, research etc.) to build awareness and create experiential learning opportunities.

○ **After carrying out a sustainability-related initiative or event, what kind of tools, if any, do you use to measure the success of said initiative? This can also refer to communication - is there a way you measure the success of an engagement strategy?**

Social media engagement is monitored, such as likes and comments.

○ **Is there one initiative in particular that has been most successful in engaging with students concerning sustainability?**

The waste sorting game at a pop up tabling event at which giveaways were provided. Partnerships with students residence colleges was established. This allows for two-way engagement.

○ **How open would you be to implementing a volunteer program? What are some of the challenges associated with that?**

The SO is open to a volunteer program, however tangible tasks the volunteers can complete need to be established, for example educating students in classrooms about sorting waste. As well, learning objectives for the volunteers need to developed. The SO is looking to hire an Engagement Coordinator. This program will also require volunteer training. It is also important to note a volunteer program as administrative constraints, and limited resources is a challenge.

○ **How have you attempted to navigate the college system at UofT? Which colleges are you most heavily engaged with, and what are you looking to do to extend your engagement with colleges?**

New College and UC, and interest from SMC. Pilots are completed for specific initiatives. Colleges have shown an interest in sustainability and reach out to us for assistance in planning events.

○ **How do you want students to perceive of the Sustainability Office?**

As a resource and connector. The website to be used as a tool to address any questions.

APPENDIX D: TOOLKIT

Outline

Purpose/ Rationale:

This toolkit has been designed on the basis of the Literature Review/Gap Analysis and group meetings with Jennifer Puskar and Dione Dias from the Sustainability Office and the instructors of ENV461, John Robinson and Anjali Helferty.

The aim of this toolkit is to provide the Sustainability Office (SO) a succinct, short-term and long-term, method of promoting sustainability initiatives and effectively disseminating information about sustainability. The purpose of the document is also to encourage the SO to broaden its reach and drive a cultural shift towards sustainability at the University of Toronto - St. George Campus (UofT).

A number of barriers for effective engagement were identified during the development of this toolkit, which provided a direction for the recommendations made in this document. Barriers, that were identified primarily through conversations with the SO, include scalability, reach, the decentralized nature of University of Toronto (UofT), and lack of resources (financial and human).

Part A: Communications/Engagement Plan

This Communications and Engagement Plan should be used by the Sustainability Office once they begin promoting a new sustainability initiative. This plan can be applied to an initiative or event run by the SO or one they are promoting. This plan recommends ways to best disseminate sustainability information on campus. This can be used for an existing initiative, a new initiative, or an upcoming event.

A.1 - Setting Goals And Intention

Once the Sustainability Office decides to promote an initiative or event, set goals for the reach of messages, identify the target audience, and shape the messages accordingly.

▪ Set Goals:

—> What is the intended impact of the initiative or event?

—> How many people the Sustainability Office intends to reach with the messaging

—> Where the Sustainability Office intends to reach them (this includes online platforms, in-person, through events, or i.e. in classrooms).

—> What time frame the Sustainability Office intends to reach them in (i.e. weeks, months)

This goal-setting process will help direct the campaign and contribute to measuring progress and making any necessary adjustments.

A.2 - Initial Awareness Campaign

▪ Online Channels - Social media, email, website, newsletter:

The first step when promoting a sustainability event/initiative should be to spread awareness via *online channels.* The Sustainability Office should post about the initiative on its *social media pages (Instagram, Twitter, Facebook)*, prior to the event to raise awareness about the initiative. If the initiative does not have an event attached to it - for example, if the SO wishes to raise awareness on the work of the GRIT Lab, we still recommend they post engaging infographics, photos with brief, concise captions, or links to longer articles on their social media accounts. Moreover, it is important to

ensure the initiative/event is incorporated into the monthly *newsletters*, and we recommend the Sustainability Office to share the newsletter with other departments' communication representatives to expand the reach of the newsletter. For example, if the newsletter is shared with David Powell, the Undergraduate Advisor of the School of the Environment, he could forward it to his lists of students in his programs. That way, the Sustainability Office would extend its reach to students in various programs. Lastly, the Sustainability Office should post details about the initiative on the sustainability office website as well. Online awareness is important because research shows a lot of students prefer online modes of communication in order to get access to information wherever and whenever.

- **Posters:**

Posters are another option for the SO to spread and increase awareness about an upcoming initiative (Refer to point 5 of the gap analysis in Appendix B). In order to stay "sustainable," it is recommended that posters should be posted electronically (e.g. on the screens in Sid Smith common room). Some printed posters can also be posted at a few places (e.g. Robarts, Common rooms, the Buttery at Trinity College, the Junior Common Room at University College) since a good part of the audience still prefers print publication over online and on screen.

Important things to consider when framing messaging:
—> Coherent, precise, clear, and tailored to varying contexts
—> Communications should promote and highlighting positive actions and include positive language rather than restricting behavior, because the audience is more likely to be receptive to positive prompting.
> For example, instead of telling people not to use paper coffee cups, encourage them to use reusable mugs.
—> Include understanding of scientific knowledge when applicable
—> Including information about the benefits of the initiatives
—> Message should target the social and economic pillars of sustainability as well as the environmental ones

A.3 - Campus Engagement

▪ Tabling/ Campus Presence:

Based on our research, one-on-one engagement is the most effective way to disseminate information, so we recommend that the Sustainability Office increase its tabling initiatives and campus presence. The Sustainability Office has hosted booths at major events like the UTSU Clubs Fair and Street Fest in September as well as tabling at Sid Smith and the Medical Sciences building, but we recommend tabling in more common spaces. For example, common rooms or student lounges like the Junior Common Room at University College or The Buttery at Trinity College, as well as the Earth Sciences lobby. Representatives of the Sustainability Office should engage students in conversation about the topic at hand, and can provide handouts or other material with further information, including information on how students can become more involved with sustainability on campus.

▪ Classroom Engagement:

The University of Toronto is notoriously large and decentralized. Research shows that one way to engage students in this type of environment is by attending lectures and tutorial halls to present information about sustainability to them in a easy, simple, and enthusiastic manner. This is an effective way for the Sustainability Office to communicate with students because most students attend class and are likely to be engaged in the few minutes before their class begins. This is also an effective way to target students that may not be reached during the Initial Awareness Campaign, and is a way for the Sustainability Office to reach students at scale. The Sustainability Office would benefit from this efficient method of engaging with over 100 students at once in a location where their attention is almost guaranteed.

▪ Provide Incentives:

Literature and the academic community has discussed the importance of incentivizing to increase engagement.[30] Thus in addition to engagement strategies to increase awareness, it is important to incentivize students. In this section we recommend and

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[30] Lozano, R. (2006). Incorporation and institutionalization of SD into universities: breaking through barriers to change. Journal of cleaner production, 14(9-11), 787-796

highlight he importance of providing a tangible reward for students who attend the events. For example, during events (tabeling) it is important to provide incentives such as reusable water bottles and mugs, and free snacks to draw attention and compel students to engage in the specific event. Additionally, during tabeling events students can submit their name into a draw, which will result in a prize (free lunch/dinner, or a electronic equipment) if they engage in the tabeling activity. Lastly it always important to consider the option of bringing treats and snacks to these events. Student are strongly incentivized with "free food" marketing tactic when promoting an event.

■ **Visualization Aids: One to One iPad:**

We have found that in order to maximize engagement with students on campus, the use of visual aids must be employed. This could include having an iPad when speaking to students on campus to help students visualize information. All in all, visualization is an important method to disseminate sustainability to students as it makes complex information accessible to students lacking the educational background or interest.

Part B: Strategic Recommendations, Programming and Partnerships

We recommend that the Sustainability Office pursue the following programming and partnership opportunities to increase awareness and drive a cultural shift towards sustainability. We believe these opportunities would create far-reaching and fundamental change in the culture of the University of Toronto.

B.1 - Residence Programming

The literature review has indicated that implementing sustainability-themed living-learning communities is an effective way to drive a cultural shift towards sustainability on campus. This is because these communities emphasize collaborative and engaged learning and show that sustainability is not purely environmental - it has effects on personal and societal well being, as well. We recommend that the Sustainability Office pilot a sustainability-themed living-learning community with one of the colleges to begin with. It is likely easier to do so with a college that already has themed living-learning residences, like Victoria College, University College, or New College. Within these

communities, residence dons can initiate conversations on sustainability concepts and host workshops on encouraging a sustainable lifestyle - things like managing waste, single-use plastics, or plant-based diets. If the pilot program is successful, we recommend this be expanded to other college residences as well.

One challenge we foresee in this context is the colleges' openness to implementing this pilot project and having the funds to sponsor another living-learning community, and to address the SO can work with colleges it has already a strong relationship with first before moving onto other colleges.

B.2 - Faculty and Discipline Partnerships

Due to the decentralized nature of the university, we have found that students on campus tend to identify more with their professional faculty and what they are studying rather than the university as a whole. We would like to recommend that the SO create partnerships to develop events and workshops with different departmental disciplines, such as math, life science, engineering, law, and so on. Students are more likely to engage with the SO when the SO has a strong relationship their respective departments. Further, the partnerships between the SO and departments could result in staff and faculty involvement, which can further incentivize students to engage. Faculty can engage through involvement in projects with the SO, they can promote this partnership, and they may even feel inclined to incorporate sustainability into their courses due to the newly founded presence of the SO in their department. Because the faculty is most knowledgeable in their respective fields and departments, they are the best sources with whom the SO can create workshops and events that are academically relevant.

A challenge we foresee here is that some disciplines may have a stronger evident connection to sustainability, like architecture in comparison to other disciplines, such as physics. Therefore, each partner may not be as involved in the partnership. This can be mitigated by identifying groups that are already interested in sustainability, like the

Green Chemistry Initiative as well as researching into the linkages between sustainability and the less-evident disciplines.

■ **Program Ambassadors:**

We recommend that the SO use their future departmental partnerships to create relationships and volunteer opportunities with students. Initiating a new volunteer program, where students from various departments can represent their interests when the SO and departments create initiatives, create volunteer positions known as Program Ambassadors. As previously mentioned, we found that students identify more with their departmental discipline than the university as a whole. These Program Ambassadors would enable students to represent their program while harnessing their interest in sustainability, even if they are not in explicitly sustainability-oriented programs. Further, this would enable the SO to increase its reach across programs and departments, as we recommend recruiting volunteers from disciplines like math, law, life sciences, political science, and so on.

The role and tasks of the Program Ambassadors that would be as follows:

—> The Program Ambassadors would promote sustainability events and initiatives, offered by the SO, to their program.

—> They would represent the students in their program and act as a key student spokesperson during partnership discussions between their respective department and the SO. For example, they may suggest feedback on what types of events and workshops the students of their program would or would not like from the SO and discipline partnership.

These opportunities can be advertised as volunteer opportunities and have a contract associated with them. We have found through experience and observation that volunteer ambassador opportunities on campus are widely popular.

On a similar note, seeing as many course unions have a Sustainability Officer on the executive team, the Sustainability Office should coordinate with said officers to ensure they have the resources to contribute to the sustainability efforts of their respective course union.

An issue that we foresee in applying this is maintaining engagement between the SO and the Program Ambassadors as well as engagement between the Program Ambassadors and students throughout the academic year. To mitigate this, the SO could include monthly meetings with the Program Ambassadors to maintain a relationship as well as ensuring the the Program Ambassadors have easy access to all necessary resources. The SO may also create contracts with these Program Ambassadors to ensure commitment and accountability.

B.3 - Professional Incentive Program - Career Centre

A key finding of our research is that students in secondary institutions benefit from experiential learning through hands-on courses, such as the Living Labs concept.[31] Similarly, we know students benefit from experiential learning through volunteer and internship opportunities as well. As students, we are actively seeking professional incentives and information about future career and professional opportunities, and this involves networking. The Career Exploration and Education Centre at UofT serves this need by providing events and workshops to students related to networking in their field, resume and cover letter information and critiques, job shadowing opportunities, resources to find internships, and much more. Many of these opportunities are related to sustainability as well, and we believe if the Sustainability Office partnered with the Career Exploration and Education Centre, through networks and planning, the partnership could result in more opportunities for students being found and therefore promoted through each platform. These opportunities would be found by the Career Centre and simply supported by the SO through their networks and knowledge. This partnership idea is based on the idea that most students don't have an adequate understanding of how sustainability applies to their professional field. Providing students with a professional incentive, such as volunteer positions, internships, workshops, and networking opportunities, can help students learn how to apply sustainability in a practical way. This would provide students with work experience and networks for the

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[31] Brundiers, K., Wiek, A., & Redman, C. L. (2010). Real-world learning opportunities in sustainability: From classroom into the real world. International Journal of Sustainability in Higher Education, 11(4), 308-324. doi:10.1108/14676371011077540.

student, of sustainability in their field to be able to keep going down this path in their career.

One of our group members who is involved with the Career Centre has observed openness to this kind of opportunity on their end. The only minor issues we foresee are a lack of work opportunities and communication challenges between the SO and the Career Centre. These issues can be mitigated by planning bi-weekly updates between the SO and the Career Centre.

B.4 - Student Group Partnerships

With over 60 environmental clubs and student groups on campus, we recommend that the SO work in close collaboration with these groups. Students within these groups have displayed an interest in sustainability, and each group has access to a network, so creating partnerships with these groups would provide the Sustainability Office with access to a much larger network of students. The SO could create these strong partnerships through regular meetings with the executives of these student groups as well as being a space where leaders of environmental groups on campus can go for information on sustainability initiatives on campus. We recommend that the Sustainability Office work closely with UTERN to help make the Environmental Working Group more productive and beneficial to everyone involved. Further, the Sustainability Office can host a competition amongst these environmental groups and award a small financial or event-based award to the group that wins it. This competition can be based on the student groups running a zero-waste event, managing a zero-waste office, or creating innovative and new sustainability-related events. Further, the SO could create a calendar of all the upcoming sustainability-related events so students can easily access all those opportunities for engagement in one centralized location.

One challenge we foresee is a lack of engagement from some groups, but the SO can't do much to mitigate other than work with the groups that are willing to engage and continue to reach out to those who don't.

B.5 - College Partnerships

There was not enough hard evidence available on incorporating different colleges on campus in terms of sustainability initiatives, because there aren't many large institutions in the world with a similar college system. However, conversations with Harvard University regarding this displays that it is a challenge to ensure all colleges are informed about sustainability programs in decentralized institutions. Harvard manages this issue by hiring Sustainability Managers at every college who act as connectors between the SO and the college and therefore disseminate information more effectively. For colleges that do not have Sustainability Managers, the Sustainability Office at Harvard often reaches out to student groups and faculty who are working on sustainability-related research/courses as well as the "Green Team" (teams made up of staff solely responsible for sustainability projects) to get the w ord out.

An issue that we foresee is the lack of Sustainability Managers at colleges and so the SO could face difficulty coordinating sustainability initiatives between colleges, but it's not within the SO's purview to create Sustainability Managers.

B.6 - Volunteer Outreach Program

As concluded through interviews with the office's Project Coordinators at UofT's SO (refer to Gap Analysis), a primary barriers for the SO is a lack of human resources that are needed drive a sustainability culture on campus through the SO. As the SO presently has a volunteer program through the Green Ambassador Network, this has the potential to grow into a greater resource for the SO to reach their goals. This program recommendation incorporates findings from the Gap Analysis concerning volunteer program at McGill university. McGill has created a volunteer program that promotes the dissemination of sustainability through Sustainability Ambassadors by giving classroom presentations, being present at tabling and large events. McGill also have volunteers known as Sustainable Event Consultants, who are tasked with ensuring events held by the SO are certified as sustainable. The university has just recently launched a training program that equips students with the skills needed to be

sustainability leaders. Their projects often have students involved as leaders, team members, employees, or volunteers. They also work closely with the student societies and their environment committees, as well as other student groups across campus in order to disseminate sustainability information with the help of volunteers.

1. **Recruiting Volunteers:**

    There may be existing volunteers through the Green Ambassador program that are willing to spend more time and effort with the SO – start recruitment there. Moving forward, once a *Volunteer Coordinator* can be established, ensuring they are present at as many tabling events as possible - this is crucial for recruitment. Maintaining a consistent presence during engagement opportunities gives students a face and name to turn to in the event they eventually want to volunteer and displays confidence that the SO is prepared to offer assistance through the process, ultimately volunteers will feel supported. Sending out information concerning various project opportunities, small and long-term commitments, through newsletters and social media will also increase the odds of recruiting talent. Partnering with organizations on campus, designed specifically for volunteer outreach such as the University of Toronto Volunteer Society or University of Toronto Alumni network, will increase awareness of the SO volunteer opportunity to networks full of individuals ready to give their time and expertise. Additionally, there is an opportunity to engage students who apply to Work Study positions into volunteer opportunities. This is important because student have already expressed an interest.

2. **Branching Out:**

    Sustainability volunteer opportunities should not only incorporate strong moral belief in equality (which will be discussed in the following section), but encourage individuals to volunteer who have no prior experience or knowledge concerning green initiatives. This means fostering connections with students who are not typically drawn to the idea of sustainability. Offering positions that reflect a wide variety of skills, not simply directly aimed at speaking positively about sustainability, is a way of creating a space for these students. Examples include: External Liaison/ Community Outreach, Internal Communications Coordinator, Social Media Planner,

Tabling Manager, Web Designer, Data Specialist, and Graphic Designer. Here are three examples of volunteer position advertisement descriptions:

- **Outreach Support:** The Sustainability Office is looking to growing its ties with students across St.George campus. Currently, the Sustainability Office is working with several campus departments to increase awareness of and participation in a variety of sustainability initiatives prepared in partnership between the department and the SO. Student volunteers, also known as Program Ambassadors, from several departments will need support building presentations and connections among peers. This position also will provide direct communication between the SO and Program Ambassadors. If you have strong communication skills, are a people person, and are an exceptional public speakers please contact the SO for an opportunity to give back to your University of Toronto community.

- **Web Designer:** The internet's carbon footprint is growing out of control: a whopping 830 million tons of CO2 is generated annually, which is bigger than that of the entire aviation industry, and it's set to double by 2020.[32] Right now, at least 332 million tons of CO2 (40 percent of the internet's total footprint) falls under the responsibility of those that are creating websites.[33] It's time for designers to join the cause in reducing carbon emissions and incorporating sustainability into their practices. Help the Sustainability Office contribute to reducing the University of Toronto's carbon footprint by designing university web pages in a sustainable manner. Tackling page bloating, adopting page size budgets, shrinking scripts, compressing downloads, setting appropriate caching times, and combining files can all help reduce data overhead and

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[32] American Chemical Society. (2013, January 2). Toward reducing the greenhouse gas emissions of the Internet and telecommunications. ScienceDaily. Retrieved December 10, 2018 from www.sciencedaily.com/releases/2013/01/130102140452.htm

[33] Christie, James. 2013. Sustainable Web Design.September 23. Accessed November 20, 2018. https://alistapart.com/article/sustainable-web-design.

HTTP requests.[34] Apply now to The Sustainability Office's volunteer recruitment website if you want to gain coding and web design experience, learn more about sustainability, join a community rooted in positive change, and give back your community using your expertise.

- **Graphic Designer:** The paper industry is the 4th largest carbon emission producer in the world and roughly 100 million trees are cut down just to produce junk mail every year.[35] This beautiful trash is contributing to the world's waste issue - the Sustainability Office needs your help. The University of Toronto is on a mission to reduce its waste and graphic designers can contribute to this mission by assisting in the design of more environmental friendly graphics. Printing methods, paper grade, press sheet size, and the use of post consumer waste are ways that the Sustainability Office is looking to reduce its carbon footprint.[36] Your expertise can contribute to modernizing the Sustainability Office's visual presence on campus while adding sustainable design to your portfolio.

3. **Managing Barriers:**

   A. **Accessibility:** All volunteer opportunities should be made physically accessible to all people, with special attention to individuals with disabilities. In the event a volunteer opportunity is inaccessible, accommodations should be offered. This could mean making the space wheelchair accessible, providing transportation, or having a sign language interpreter at the ready. This most importantly ensures the Sustainability Office is an open space for all individuals, but also that there is no lost talent.

   B. **Open & Safe Space:** When tabling, branding, and informing the community about a volunteer opportunity, and while volunteering is taking place, it is imperative to express that it is open to all students – regardless of gender,

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[34] Creative Bloq Staff. 2012. Save the planet through sustainable web design.August 17. Accessed November 13, 2018. https://www.creativebloq.com/inspiration/save-planet-through-sustainable-web-design-8126147.

[35] Benson, Eric. 2010. "Sustainable Graphic Design." TEDxUIUC.Illinois: Youtube, June 13.

[36] Renourish. 2018. Renourish. December 10. https://re-nourish.org.

race, sexual orientation, religion, class. Safe space training is an example of receiving formal recognition and a great way to show initiative to ensure that the work/volunteer space is safe for the LGBTQ+ community: find training at: https://egale.ca/workshops/.

C. **Organization:** It is crucial that when volunteers offer their time, they are kept busy, ensuring time is used efficiently for both the Sustainability Office and volunteer. Do not bring a volunteer in until the Sustainability Office has their role and responsibilities determined, such as the volunteer role description, estimation of time commitment, location and necessary equipment. This ensures that their time is not wasted, they feel valued, have an opportunity to learn new skills, and have something to reference when adding this opportunity to their resume. This also ensures that the time and effort put in by the Volunteer Coordinator is effective.

D. **Communication:** Regular communication is motivating for volunteers while the lack of it is one of the chief reasons volunteers become dissatisfied. Having an individual at the office, or a volunteer themselves, coordinating volunteers is crucial in order to prevent risk of losing a volunteer's interest and time. A forgotten volunteer won't return. Be ready to listen to volunteers and respond to concerns immediately. Telephone them, have meetings, invite them to stop by your office, send info via social media, or email them regular updates or a volunteer newsletter.

4. **Branding the Volunteer Program:**

A. **Growth:** It is important that the opportunity add value to a volunteers career skill set and provides them with information they would not else wise have if not volunteered with the Sustainability Office.

B. **Purpose:** The Sustainability Office must be able to show that the contributions of the volunteer(s) has helped achieve the overarching goal of a project. Share success stories about your clients and programs. Bring volunteers up-to-date on progress toward your organization's goals. Let them see the Sustainability Office's work in action through tours, presentations on the issues by your experts, and by inviting them to

provide suggestions about how your work can be done even better. Currently, the website offers a Facebook album (without location specifics, inconsistent and minimal project information and no links for additional information), and to a broken link on the "Join the Green Ambassadors" page supposed to offer inspirational initiatives current Ambassadors are taking a part of. Fixing these minor issues will put a better face on the volunteer program and encourage students to feel more inclined to volunteer. Demonstrating that current and past projects have successfully contributed to the program's purpose will help prospective volunteers imagine where they can fit into the process.

C. **Community:** Volunteers will want a sense of community once engaged with the projects. Hosting private events for the volunteers to interact with each other, gathering together for sustainability themed local events, or forming study groups, are ways of achieving a tightly woven community that will encourage stronger loyalty and potentially more time and better results for projects the volunteers are working on.

5. **Giving Thanks:**

Expressing your gratitude for a volunteers' commitments is important to retain volunteers, as well as reinforce positive results and behaviour. A simple handwritten note, setting up a 'volunteer hall of fame' board/social media page, or creating a scrapbook to bring to events and display at the office, are just a few ways to say thank you.

B.7 - Online Programming and Visualization

We recommend that the SO update their website in several ways. We believe the website should be more intuitive and modern. Students and other individuals accessing the website are more likely to engage with it if it is appealing and organized in a way that is intuitive and easy to navigate. Through our gap analysis, we found that the McGill Office of Sustainability Website was accessible and intuitive. Closely related to that, we recommend that the SO's website acts as a go-to source when information is needed to determine what UofT is doing around sustainability or what individuals/groups can do

contribute to that. Closely related to that, through conversation with the SO, we learned of many initiatives and opportunities that are either not on the website or weren't easily accessible on the website. We recommend that the SO upload all these initiatives onto the website and display them in a more accessible way. The following are examples of information we believe should be added to the website or elements that can be changed to make it more intuitive:

- Currently, some information about initiatives is found under "Green Resources," such as "Veggie Mondays". Which as an initiative rather than a resource.
- No information about UofT's LEED-certified buildings is on the website. It is important for the SO website to contain sustainability-related information, as recent studies of student information-seeking behaviour have found overwhelming preference for internet based searches of information seeking behaviours.
- Because the SO's aim is to "inspire and educate," the website should include information about UofT's sustainable progress, such as the President Advisory Committee on the Environment, Climate Change, and Sustainability.

Further, we recommend that the Sustainability Office initiates an interactive, highly accessible, and visually stimulating map of the University of Toronto on the Sustainability Office's website that engages students with information on different buildings' sustainability history and highlights hubs of sustainability-related research or work. It could also include links to further information and ways to access those carrying out the research or work. This helps students visualize all the sustainability initiatives and research on campus, and it personalizes this work if students become aware of the sustainability of buildings they study and learn in.

The only issue we foresee with this is that the SO would have to hire a work-study student or contract a volunteer that has experience with web and graphic design.

B.8 - Toolkit Program

Discussions with the SO indicated a recurring issue: various actors (dons, students, etc) reached out to the Sustainability Office every time they needed help organizing an event, and that Jennifer and Dione would have to go through the process of helping these individuals even if they had already done something similar in the past. Because the Sustainability Office wants to act as a resource for students and other actors on campus, we recommend that in order to alleviate the waste of resources associated with going through the same aforementioned process multiple times, the Sustainability Office should create toolkits. In more detail, these different toolkits should be targeted to dons, student leaders, sustainability officers in course unions, professors, and commuters, for example. These toolkits should be brief, accessible, and based on the information the Sustainability Office has already been providing these actors. This means that if dons want to host a sustainability-themed event, they can locate a toolkit on the website rather than contacting Jen and Dione and involving them in the process.

The only issue we foresee is the process of gathering all the information that was given to various individuals or groups into several comprehensive yet straightforward documents. The SO will also have to ensure these toolkits are visually understandable.

Part C: Measurement & Adjustment

Throughout any initiative, campaign, project, or social media post, the Sustainability Office must collect and file data to first and foremost measure engagement, and secondly to readjust tactics to better inform engagement initiatives. The Sustainability Office must define the scope of engagement within their unique context, select assessment metrics that align with the target definition, and choose an appropriate data collection method that reflects the context (See Table 1 & 2).[37]

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[37] Mandernach, J. (2015). Assessment of Student Engagement in Higher Education: A Synthesis of Literature and Assessment Tools. International Journal of Learning, Teaching and Educational Research, 1-14.

Table 1: Examples of Assessment Items to Gauge Types of Engagement

Behavioural: the extent to which students are making active responses to the learning opportunities presented	Affective: the level of students' investment in, and their emotional reactions to, the information/engagement.
Frequency of asking questions & comments	How much effort is put in to living sustainably
Frequency of engaging in survey's	How much investment put in to better understand sustainability
Frequency of sharing content with others	Reaction to sustainable information
Frequency of attending events Sus. Office holds and other events in the community related to topic	Reaction to sustainable information
Frequency of attending events Sus. Office holds and other events in the community related to topic	Tendency to already know about sustainability
	Frequency of discussing sustainability outside of engagement events held by the Sus. Office

Table 2: Data Collection Methods to Measure Student Engagement

Data Collection Method	Description	Strengths	Challenges
Student Self-report	Students indicate their engagement (as a function of level, agreement or perception) in response to specific experiences.	Practical, cost-efficient approach for group and/or large-scale administration; provides a means of measuring non-observable, perceptual or subjective indicators of engagement.	Concerns with honesty and/or accuracy of responses; generalized nature of items may limit the value of responses.
Interviews	Students are asked to discuss their engagement in an open-ended manner.	Elicits a more detailed, individualized, contextualized understanding of student engagement.	Concerns with interviewer bias and social desirability factors may influence accuracy of findings.
Direct observations	Structured technique for monitoring and recording students behavior along a predefined indicators of engagement.	Provides detailed, descriptive accounts of momentary time sampling of student engagement.	Reliability may be impacted by observer bias; techniques may be time consuming; measurements limited to observable behaviour.
Checklists & Rating Scales	Provides the frequency and investment of specific target behaviours; may be a self-rating or observer-rating	Provides data on behavioural indicators of engagement	Lacks information to explain the reasoning behind behavioural indicators
Focused Case Studies	Large amounts of detailed data are collected in relation to a small, select sample of students	Rich data highlighting behaviors, interactions and contextual factors	May have limited generalizability to other student populations

Surveys

Based on interviews conducted with other universities via email, a popular approach was identified - measuring student engagement via surveys through online networks such as Survey Monkey. A survey can be sent to event attendees to allow them to rate their satisfaction on effectiveness of the event, whether it was a good learning experience, and the value of the knowledge acquired through the event . Additionally, pre and post meetings can be held to discuss among volunteers and workers whether or not, based on their perspective, the initiative or event had the intended impact.

To further strengthen the SO initiatives, broaden its reach, and promote a culture of sustainability on campus, as seen implemented at other universities such as at the University of Stanford and Thompson Rivers University (both ranked platinum on STARS), culture assessments can be applied. Surveys can be deployed to gauge an individual's sustainability attitude and behaviours, gathering evidence from both students and faculty members of the university. Based on the survey responses, a personalized list of actions will be presented as recommendations for individuals in order to encourage sustainability actions that are most relevant for their lifestyle on campus. Moreover, students can be prompted to take the survey again after one year to track progress and continue to improve. This survey is not only an engagement and education tool for the individual taking the survey, but also provided the SO with data about campus-wide sustainability attitudes and behaviours and how they change over time. This can inform sustainability office programming and development of engagement events. When implementing this initiative it is important to note that individual may need to incentivized to encourage participation in the event. Additionally information about time needed to complete the survey, and benefits to the individual for completing the survey should be highlighted.

APPENDIX E: UC3 CASE STUDY

Introduction

The *purpose* of this case study is to provide an example of how the communications and engagement plan toolkit can be applied to a specific sustainability initiative; the University Climate Change Coalition (UC3). The hope is that this application clarifies how the Toolkit can be applied. The Strategic Recommendations are not included as part of this case study, and please note that some of the specific numbers and figures used are arbitrary. Evidently, various aspects of the toolkit will be more or less applicable to differing events or initiatives.

Goals and Intention:

✳ How many people the Sustainability Office intends to reach with the messaging:

—> The Sustainability Office aims to inform 5,000 students about the UC3 initiative.

✳ Where the Sustainability Office intends to reach them:

—> The Sustainability Office tends to inform these students through printed platforms as well as common rooms and online messaging.

✳ What time frame the Sustainability Office intends to reach them in:

—> The Sustainability Office intends to reach these 5,000 students within the next 5 months.

Initial Awareness Campaign:

Social Media Posts:

✳ **Facebook:**

EXCITING NEWS!!! The University of Toronto is getting involved with 12 other research universities in North America in a coalition to reduce its greenhouse gas (GHG) emissions by decreasing its carbon footprint. Don't know what a carbon footprint is? Click the **link** to find out!

Let us know how you plan on reducing your carbon footprint in the comments section below!! If you want to get involved with the SO, drop us a message. We'd love that! :D

✳ Twitter:

—> UC3 - a bold new coalition designed to help local communities achieve their climate goals and accelerate that transition to a low-carbon future. Check out more info here!

—> UofT has pledged to reduce their carbon footprint! What can you do to help? We'd love to hear!

—> See what UofT is doing to reduce GHG emissions!

—> UofT is committed to reducing 37% of its GHG emissions from 1990 level by 2030! See how now!

—> See what the Presidential Advisory Committee on the Environment, Climate Change and Sustainability at UofT is up to. Click here!

✳ Instagram:

Caption:

UofT is one amongst 17 research universities that have committed to the University Climate Change Coalition, which means UofT will strive to reduce greenhouse gas emissions by 37% from 1990 levels by 2030.

If you're interested in learning about how your individual changes can contribute to this, join the Sustainability Office at a DIY workshop on December 15th from 3-5 PM at UC254.

Newsletter:

The following are examples of how information about the UC3 commitment can be presented in the monthly newsletters and sent to other members of the university to share with their respective networks.

Ex. 1

UofT has joined the The University Climate Change Coalition (UC3)

UofT has committed to leveraging their research and resources to help communities accelerate local climate action. This involves reducing our university's carbon footprint and we are committed to making more climate friendly investments to become operationally carbon neutral. UofT will strive to reduce greenhouse gas emissions (GHG) **by 37% from 1990 levels by 2030**!

Read more [here](#).

Ex. 2

How to Reduce your Energy Consumption and GHG Emissions

Did you know UofT has committed to reducing its greenhouse gas emissions (GHG) **by 37% from 1990 levels by 2030!**

We need your help, see how below:

- ☑ Take advantage of natural light when possible
- ☑ Turn off the lights if you're the last to leave the classroom
- ☑ Unplug electronics when not in use (laptop and phone chargers)
- ☑ Turn off computer monitor when it's not being used
- ☑ Only push automatic door openers when you really need to, otherwise you are wasting energy. Using them unnecessarily causes hot air to escape outside during colder months, and air conditioning in the warmer months

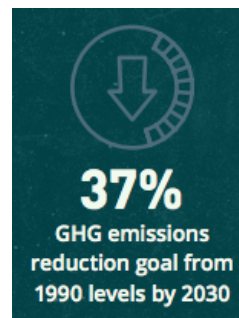The following message provides more scientific information, along with information about the UC3 commitment.

The University Climate Change Coalition (UC3)

Under the UC3 climate commitment, the university plans to organize activities around climate change initiatives and has set a target of 37% reduction (about 38,000 tonnes) in greenhouse gas (GHG) emissions from 1990 levels by 2030.

Wait, but what are GHG emissions?

GHG are naturally occuring in the atmosphere, such as water vapour and carbon dioxide, which trap heat and keep our planet warm. Human activity, such as burning fossil fuels and transportation have increased the concentration of GHGs , thereby trapping and holding more heat in the atmosphere. This consequently impacts the planet's natural systems.

However, UofT is making important strides to reduce their impact on the environment:

45,000 TONNES
GHG emissions reduction from 2008 - 2016

37%
GHG emissions reduction goal from 1990 levels by 2030

The following message provides a social lens, which can also be used to increase awareness about GHG:

> *According to the Global Climate Risk Index (CRI), less developed countries are generally more affected by climate change and more vulnerable to climate change than industrialized countries. Help do your part by being part of the UC3 Climate commitment. UofT has committed to reducing its greenhouse gas emissions (GHG) by 37% from 1990 levels by 2030!*

The newsletter can increase awareness about the UC3 commitment, by strategically developing message that targets different groups, for example as seen above, those that relate more to the environmental vs. social pillars of sustainability.

* Posters:

Posters informing students of the UC3 initiative and individual behaviours they can adopt should be displayed online in the Sidney Smith common room. Sample poster for the SO to use:
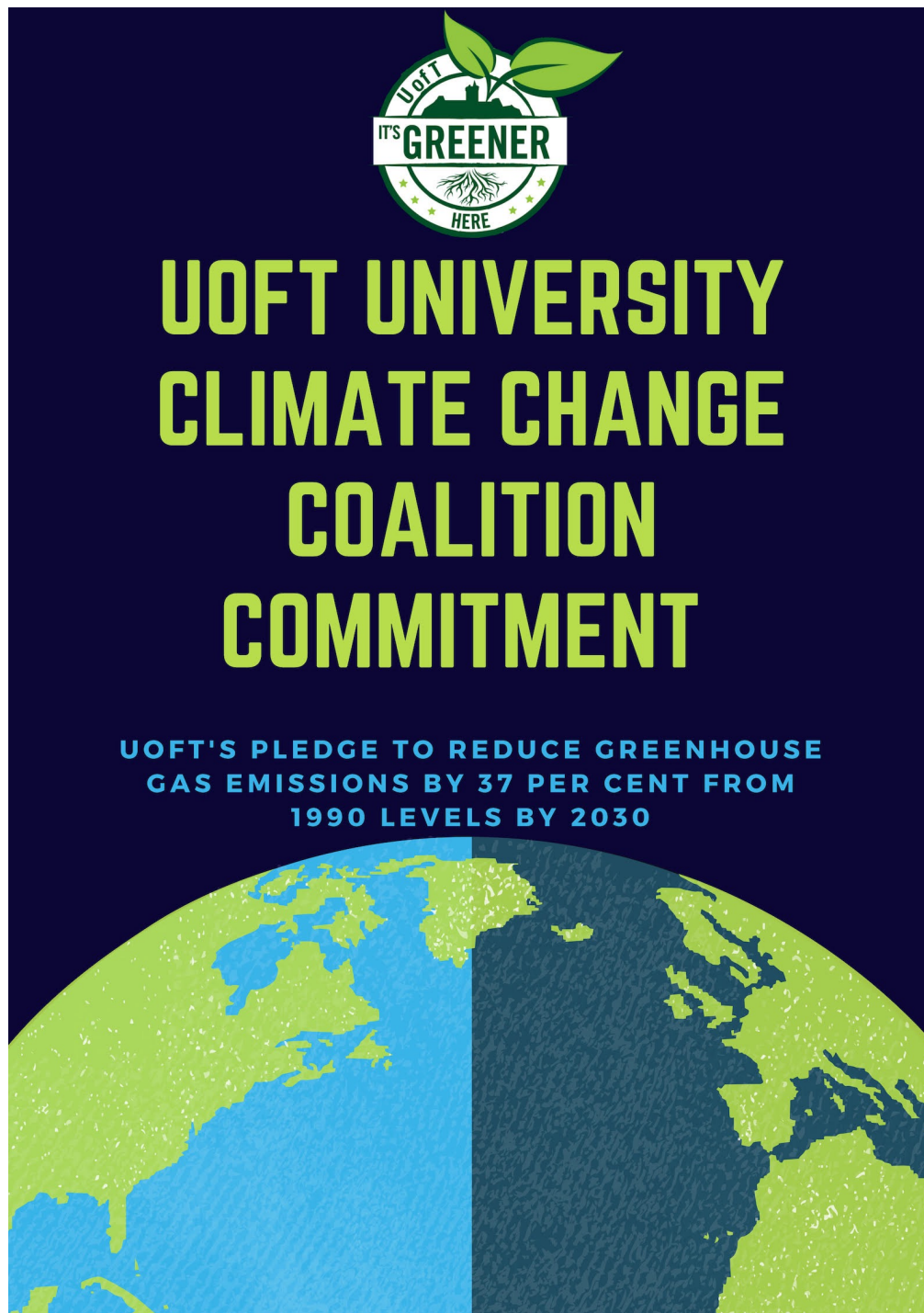
Campus Engagement:

✱ Tabling:

To further strengthen increasing awareness about the UC3 commitment, along with the approaches discussed above, tabling events can be used to directly engage with students and to inform them of the UC3 Commitment, and what this means for UofT and the student body moving forward. Tabling events are more likely to be effective and productive if they consist of something other than one-way informative communication. Rather, information should be provided in an engaging way (visuals/posters, iPad use, infographic), and then information should be tied to the individual the SO is speaking to - what can they do? How can they get involved with the SO? How can they access further information? Having a newsletter sign-up sheet and the SO's social media information clearly displayed provides students the opportunity to further engage if they choose to. Further, the SO could have small giveaways like buttons or BYO Mug Coffee during these events, as well as promoting other upcoming events or initiatives run by the SO or other clubs.

✱ Classroom Engagement:

Through experience, classroom engagement is a highly effective way to engage with students. This is because in classrooms, students are already in a mode of attentive listening. The SO can go to classrooms and talk about the UC3 Commitment in the first 3 minutes of class. Further, they can have a visual aid such as a poster or infographic about UC3 on the lecture slide to support their presentation and obtain full attention. As there is not a lot of time to go into detail about the UC3 Commitment in the beginning of class, the SO can briefly mention 3 key points about it. These are: What is the UC3 Commitment? What students can do regarding the commitment?, and How to find further information and get in contact with the SO?

Visualization Aids: One to One iPad & Physical Visual Spaces on Campus

When implementing events related to the UC3 commitment, incorporating visual aids can strengthen the information being communicated. For example, if communicating

information about reducing GHG, it would be first important to create awareness about what GHG are, this can be presented using informative and visually stimulating diagrams. Additionally, an IPad can be used to display technical information, such as information about LEED buildings, their operational performance, and providing quantitative information such as reduction in GHG and water efficiency.

Potential Events:

* **Calculate your Personal Carbon Footprint:**

   As UofT strives to decrease its GHG emissions, come learn about your own personal carbon footprint, and what you can do to decrease it!

* **DIY Workshops or Events:**

   These can include designing your own cutlery case, making your own beeswax wrap, planting your own herb garden.

* **Clothing Swap:**

   Particularly a winter clothes clothing swap to encourage using less heat.

* **Tree-planting** event in the spring or summer.

* **Sustainable cooking event:**

   Sharing tips on how to eat sustainably like buying local, reducing meat and dairy consumption, etc then cook a meal together.

Measurement:

In order to assess whether or not the above recommendations have successfully engaged 5,000 students, from various disciplines and locations on campus, there are a variety of tools to assess this engagement.

* **Measuring Initial Awareness:**

Social media platforms typically offer metrics to users in order to assess the engagement a post receives. Collecting this data and highlighting the nature of the message will help, overtime, discover any potential causation. Consider posing a research question like: do messages with positive feedback receive more engagement in comparison to negative messaging? When conducting this kind of measurement

research, it is imperative to keep other elements of the message consistent - isolating the variable, in order to prove causation rather than correlation. To assess whether or not the message has had levels of behavioural or affective engagement noting things like: amount of direct messages received in relation to a post, amount of comments on a post, frequency of engaging with links on the post, reaction to the post, and if the post led to any UC3 related commitments (reducing personal greenhouse gas footprint), are ways to measure engagement.

* **Measuring Engagement at Tabling Events:**

Measuring engagement at tabling events can offer richer insights than measuring initial awareness through social media channels, because the data collected is typically more informed and robust. Face to face engagement, as researched, is not only a better way of communication, but a more effective way to collect data. Directing members of your team to monitor and record student behaviour by engaging in open ended questions, in an informal manner, concerning the information being presented provides detailed and descriptive accounts of student engagement. Collecting data throughout the tabling event by student self-reporting is a way to measure any behaviour or thoughts that were missed/non-observable during the event. Adding rating scales and yes or no questions may lack detail, but will provide the Sustainability Office with clear quantitative data. Consider asking questions in the survey that could not be answered simply by members observations, such as: do you understand what the UC3 commitment entails? how convinced are you that the UC3 commitment is worth UofT's time and effort (scale of 1-10), and do you feel a part of the UC3 commitment?