Planning & Promoting a WPI Project Center in Montreal III

Worcester, MA
D-Term 2022-23

Submitted By: Frank Ford
                    Seton King

Faculty Advisor: Christopher A. Brown

Abstract

The purpose of this research project is to promote Montreal, Canada as a suitable area for a WPI (Worcester Polytechnic Institute) global project center and garner interest from both staff and students on the possibility of establishing such a center. Canada is one of the United States' largest trading partners, making it an ideal location for a WPI project center. Montreal, in particular, provides a foreign, multicultural, bilingual experience within driving distance of Worcester. Moreover, it has outstanding cultural, educational, and research institutions that could provide excellent opportunities for Interactive Qualifying Projects (IQPs) and Major Qualifying Projects (MQPs).

The project entails conducting interviews, research, and surveys to promote Montreal as an ideal location for a WPI project center. An objective of the research is to determine the level of interest among staff and students in establishing a project center in Montreal. Additionally, the project aims to identify the challenges associated with establishing a new project center and develop strategies to overcome them. The research also examines the process for establishing concurrent centers and how WPI can take advantage of these opportunities.

Executive Summary

The WPI Interactive Qualifying Project (IQP) program has many project center locations around the world for students to use, but there is none in the neighboring country of Canada. This is a missed opportunity therefore this project's goal is to get a project center established in Montreal, Canada because it has the necessary infrastructure, resources, and is close in proximity to WPI.

Achievement of this goal required an evaluation of the cost of an IQP in Montreal to a student, student interest and support in Montreal as an IQP location, a faculty member to lead the project center and a partnership with a local company or organization to provide students with project opportunities. All these components were pursued with the intent of presenting WPI with everything they needed to establish a project center in Montreal and the entire process was documented.

Montreal is an affordable location to any WPI student from any financial background given their project stipend. There are plenty of students interested in completing their projects in Montreal however, there were no faculty members that agreed to be the leader of a project center in Montreal, but there are multiple potential candidates who can be further looked into as well as other faculty members at WPI. Finally, the search for a company partnership was unsuccessful, but potential companies have been recorded and should be pursued more in the future to establish a connection.

Overall, the goal of establishing a project center in Montreal was not achieved, however, this project has provided all necessary information and research to achieve this goal in future projects.

Acknowledgments

Our team extends our deepest gratitude to our main advisor, Prof. Christopher A. Brown, for his relentless support and expert guidance throughout the course of our research. His insightful feedback and dedication were instrumental in our project's success.

We would like to acknowledge the invaluable contributions of Prof. Laura Roberts, who has been a consistent source of knowledge, encouragement, and wisdom. Her perspectives and critiques have significantly enriched our work.

Special thanks go to both Prof. Laura Roberts and Prof. Kent Rissmiller for their administrative roles and commitment in steering our research project in the right direction. Their experience and profound understanding of the field have been invaluable in overcoming the numerous challenges we faced along the way.

Our sincere appreciation goes to Worcester Polytechnic Institute (WPI), for providing us with the necessary facilities and resources that were vital for our research work. WPI's conducive environment and its emphasis on research and innovation have been central to our achievement.

Lastly, we would like to acknowledge all other members of the WPI community who contributed, in one way or another, to our project. Though you may not be mentioned here, please know that your input, support, and encouragement were vital to our project's completion and success.

Table of Contents

List of Figures & Tables

1. Introduction

1.1. Goal

The goal of this project is to have WPI establish a project center in Montreal, Canada. In order to achieve this we have organized our work into five objectives. The first objective was to gather information on the key components required for a WPI project center. Once we had the information from the first objective, we knew the components we needed to successfully establish a project center in Montreal. These components became clear and thus our four other objectives are as follows: contact companies in Montreal for potential partnerships, evaluate the cost for a student to complete their project in Montreal, assess student interest in a Montreal WPI project center and find a faculty member interested in becoming director of the project center. These objectives allowed us to organize our work towards our final goal of establishing a new project center in Montreal.

1.2. Rationale

This work is important because Montreal is a suitable global project center location not used by WPI. Although Canada is a neighbor to the United States, there is not yet a project center there even though it is the number one trading partner to the United States (Executive). Canada has many other major cities, but we believe that Montreal is the best fit. It is close enough for students to drive to, is a city rich in history and culture alike. It is one of the largest economic and cultural cities in Canada which would give students an experience unlike one they would find locally (Linteau 2021). Montreal is also a leading research and development center, with its four universities boasting numerous research institutes in areas such as telecommunications, pulp and paper, aerospace, software and pharmaceuticals which could prove useful to WPI projects (Linteau 2021).

In order to achieve the goal of establishing a project center in Montreal to use the project opportunities that the city has to offer, we had to accomplish our objectives. A partnership with a local company is necessary because it provides students with more project opportunities and real world experience with companies (Roberts 2023). An estimated evaluation of the cost to the student is necessary because it provides the school with the information to see if Montreal is an affordable location for students. Many students come from different financial backgrounds so it is important to ensure that each student has an equal opportunity of experience when completing their projects

(Rissmiller 2023). Student interest is additionally important because in order to have a project center, there must be students interested in traveling to the location (Rissmiller 2023). Finally, a faculty leader is necessary because a project center director is essential to travel with the students, organize connections with companies, and advise on projects (Rissmiller 2023). All of these components are necessary for establishing a project center and are important to the success of our goal.

1.3.   State of the Art

There have been multiple previous IQPs with the goal of creating new project centers around the world including Montreal. These new projects have been able to succeed in other locations around the world, but establishing one in Montreal has been unsuccessful. Therefore, our team looked into the defining factors that separates the other successful IQP groups from those trying to get one in Montreal.

One IQP researched Iceland as a new potential location for a project center (Dupuis, et al. 2018). For their project they traveled to Iceland with an advisor to research if Iceland had potential to have a project center. Their advisor took the lead for them on this project and was the reason they got approval from the school to travel to Iceland for this IQP. One of their main focuses was the culture and background of Iceland as well as what it had to offer to a WPI student. Another focal point of their research was reaching out to and interviewing potential partnership companies. They were able to interview with 10 different companies across multiple disciplines. This set them up for success and with the help of their advisor, the project center in Reykjavik, Iceland is still used today.

In the IQPs researching Montreal, both focused on researching the area, then trying to find partnerships or sponsors (Desjardins, Barry 2022) (Jacobs 2021). Both projects gathered that Montreal is a great fit for an IQP center due to the infrastructure and culture. Next they both researched the Universities in Montreal trying to find a good fit to work with WPI, but both do not establish a connection with any of them unlike the Iceland IQP. Also, they both did not have a leader or advisor to guide them and push the school for the need for a Montreal IQP. The voice of a faculty advisor supporting a new project center that is willing to oversee it at the new location is a necessity because it gives the project center a leader to show the school.

Although it is a big part in having a project center, none of these previous IQPs address the need for student support as well. The Global Project Center has made it clear that in their selection process for IQP locations, there needs to be enough students willing to travel there (Rissmiller 2023).

1.4. Approach

Our research into this topic produced similar objectives to the previous IQPs as well as new ones. After looking over the work of previous IQP projects with similarities to ours, we began the same way, by first conducting research and interviews into the requirements of a project center. Once we knew the requirements, we moved on to developing our next objectives based on these requirements.

It was learned that partnerships with local companies or universities make establishing a project center easier. This is true because it establishes connections for students to work on their project while getting real world experience (Roberts 2023). If a sponsor company is presented with relevant project ideas that are mutually beneficial to them and WPI, they are more likely to establish a connection with WPI therefore creating an environment for students to complete their projects (Dupuis, et al. 2018). As a result, like the IQP in Iceland, we researched what companies in Montreal fit WPI and contacted them each trying to establish a connection for future projects.

In a previous IQP, Jacobs researched the feasibility of having Montreal as a new project center (Jacobs 2021). Similarly, we did our own research about Montreal as a city itself, but we differed by focusing on the evaluation of cost to a student living in downtown Montreal for a term out of the school year. This was to assure that Montreal is an affordable city to have a student stay in for 7 weeks.

It is important that a project center location has students interested in traveling to these locations. As a result, we were tasked with finding students willing to participate in projects located in Montreal as well as the entertainment attractions that it has to offer to young college students. Unlike other IQPs, we assessed overall student interest with a quick and simple survey to provide us with usable data.

We also learned that in order to establish a project center, the center needs a leader to push for the new location like the advisor for the Iceland IQP. It is most helpful if this leader is a faculty or alumni who has strong interest in the project, is familiar with the area, has connections and contacts in the area to help guide students, and is willing to take on the responsibility. This lowers the risk for the school and shows that there is heightened interest in the location (Rissmiller 2023). Therefore we needed our own leader for Montreal.

2. Methods

The goal of this project is to present strong evidence to the Global School that would suggest a project center in Montreal, Canada would be beneficial to both sponsors from the area and students at Worcester Polytechnic Institute. Our research began with investigating previous projects with similar goals in order to continue to advance their work. We used this work as the building blocks of our research and were able to build off of the work. Using this we were able to identify five objectives that would present a strong case for the establishment of a project center in Montreal:

1. Understand the key components of how a WPI project center is created
2. Researching and documenting potential partnerships in Montreal
3. Evaluate housing, food, transportation and logistical needs for students in Montreal
4. Assessing and documenting student interest in a Montreal WPI Project Center
5. Finding a leader for the new project center

In the following sections we discuss our methods for addressing each of these objectives.

2.1. Objective 1: Understand the key components of how a WPI project center is created

To create a baseline for our research we first used past IQP reports pertaining to the creation of new project centers. This involved analyzing completed reports for new project centers in Iceland, Prague, Czech Republic, Kyoto, Japan and Cuenca, Ecuador. Using these reports we were able to learn the various techniques that other groups have used to promote and implement a new global project center. We took special note of their techniques in reaching out to sponsors, creating baselines for term recommendations and gathering student interest in their proposed new project center location.

After understanding how past IQP reports have addressed the goal we began conducting interviews with staff from the global project center and with a project center director. An interview with Kent Rismiller, the associate dean of the global school was critical to understanding how to create new global project centers from the perspective of the school. He was able to guide us in what WPI is currently looking for in a global project center and what the goals of the global project center are in the coming years. Additionally he allowed us to gain an in-depth understanding of what a strong project

sponsor is, what the management of successful sites looks like and how to promote a suitable center to WPI.

The next interview conducted was with Laura Roberts, director of the Worcester project center. This interview allowed us to better understand what is needed out of project directors and faculty advisors for successful long lasting partnerships. Both prior research and the utilization of interviews with those involved in successful project centers was a critical step in understanding how to implement and promote a new global project center in Montreal, Canada. This information was used in developing the four objectives that follow and guide our project every step along the way.

2.2. Objective 2: Researching and documenting potential partnerships in Montreal

From objective 1 we learned that in order to create a new global project center there must be strong sponsors in the host city that are both passionate about the projects and understand the role of students in said project. In order to successfully make connections with these potential sponsors in Montreal we first began researching the main industries of the area to see if any would fit WPI students or could provide potential projects. After initial research, the main industries were determined so we researched the major companies that fall under those industries. In addition to private companies we began researching nonprofit organizations such as museums and parks to see if any fit WPI or could provide potential projects.

Our next step in connecting with sponsors was to email all fitting companies with a background of our project, a partnership proposal, and ideas for projects that benefit both WPI and the company. We emailed a total of 20 companies with a majority of them being either within the aerospace industry or government sponsored. Our sub-objective of this was to interview any companies that respond and express interest. Once interest was established we hoped to be able to conduct a semi-structured interview with the company to further create connections. We finally compiled the list of companies contacted with an email template and projects sent to them as examples.

2.3. Objective 3: Evaluate housing, food, transportation and logistical needs for students in Montreal

From objective 1 we determined that budgeting the cost for a college student to attend a project center in Montreal is vital in creating a new project center. As Montreal is a large city with a lot to offer, especially to a young college student, it was important to

provide a thorough breakdown of each expense category, including housing, food, entertainment, and transportation.

To achieve this, we began by separating each category into specific expenses, such as buying groceries versus eating out. We then researched downtown Montreal for hotels, restaurants, clubs, and public transportation options to ensure our budget was as accurate as possible. Browsing online listings for short-term rentals, hotels, or other accommodations was used to determine average housing cost. Looking up local grocery stores and restaurants in the area created an accurate idea of food expenses. Estimating the cost of paid activities such as movies, concerts, festivals, or clubs then determining the average cost of shopping gives us an average cost of entertainment. Also researching local parks, museums, and other free activities that students could enjoy allowed us to better understand what students with financial stringency and those without could enjoy in Montreal. Finally, researching the cost of a round-trip flight from Boston to Montreal and discovering the cost of a metro/bus pass for 7 weeks in the city allowed us to determine average transportation cost

In order to avoid a large differentiation in values, we rounded up and averaged our values to provide an accurate estimation that was on the higher end of the spectrum. This allowed students who attend the IQP in Montreal to cut costs where they saw fit and do their own research into better deals. Our budget provides a comprehensive idea of what to expect for expenses when traveling to Montreal. The breakdown of each expense category shows where values are coming from and allows students to adjust their expenses according to their preferences.

Overall, our research and budgeting efforts provide both the student and the school with a clear idea of the feasibility of attending a project center in Montreal. With this information, students can make informed decisions about their travel expenses and plan accordingly.

2.4.   Objective 4: Assessing and documenting student interest in a Montreal WPI Project Center

From objective 1 our team determined that another essential aspect of a new global project center is student support. We used two main methods to record and assess student interest in a Montreal WPI global project center.

First, we created a survey specifically for members of the Ski and Snowboard club to gauge their level of interest in going to Montreal for their study abroad. We reached out to the club's president to have their members fill out the survey via email and their slack channels. This allowed us to target students who may have a particular interest in winter sports and could be more likely to choose Montreal as a preferred destination.

Secondly, we created a general survey for the WPI community to determine the level of interest an average student has in going to Montreal for their study abroad. To encourage participation, we set up a table in the Campus Center and outside of Morgan Dining Hall with the incentive of Montreal themed stickers for those that completed the survey. This allowed us to reach a broader range of students and get a more diverse set of responses.

Overall, the combination of targeted and general surveys allowed us to gather data from multiple sources and determine the level of interest in a Montreal project center among both winter sports enthusiasts and the general WPI population.

2.5. Objective 5: Finding a leader for the new project center

From objective 1 we determined that the pinnacle of creating a new global project center is by having a "champion." It was discovered that having somebody with connections in the area of interest is often one of the defining reasons a new project center is created. We began by researching potential alumni, faculty and staff that had connections to the Montreal area. We emailed different offices of WPI that we believed may have the ability to connect us to alumni and staff with connections to the area. This included the Career Center, the Alumni Relations Office and the student life International House.

Once individuals were found to have connections to the area of Montreal we began reaching out to conduct an interview about their opinions on a project center in Montreal. After interviewing we began compiling the individuals opinions and information on a project center in Montreal to determine the level of interest by "champions" in a Montreal project center.

3. Results

3.1. Objective 1: Understand the key components of how a WPI project center is created

To establish a successful project center at WPI, several key components need to be taken into consideration. According to the Associate Dean of the Global School, Kent Rissmiller, a local company or nonprofit organization in the area can provide project opportunities or financial support, and a "champion" or pioneer who is well-versed in the area should be appointed as the director of the project center. Faculty backing and support are crucial to drive and volunteer for the project, and an individual with local contacts must be present on the ground to ensure the smooth functioning of the center. Financial support and alumni support to draw sponsors are also crucial, and sponsors must be sold on student projects.

Partnering with a local university, such as the École de technologie supérieure in the case of Montreal, can help lower costs and risks (Desjardens et al. 2022). As for student support, at least 24 highly interested students are required. The program must gain their interest by offering various options and must also consider personal expenses, including airfare, housing, and public transit (Roberts 2023).

Project opportunities are offered throughout the academic year to accommodate student scheduling, and most opportunities are offered in B, C, and D terms (Dupuis et al. 2018). Sponsors should be willing to mentor students, devote time to meet with them, and provide open-ended problems to solve. Engaging closely with sponsors helps students build "global competence" by learning how to work on diverse teams with partners who hold differing perspectives, speak different languages, have different social norms or values, and approach research problems and tasks in different ways (Dupuis et al. 2018).

A strong network of invested, relevant sponsors is crucial for a resilient and productive project center (Kobsa et al. 2020). Students work with large and small organizations from government and quasi-government agencies, non-profits, businesses, museums, and universities. Certain sectors, such as smaller non-profit organizations, government agencies, and museums, are more suitable than others for coordinating interdisciplinary projects (Dupuis et al. 2018). Maintaining partnerships with sponsors in larger industries or universities may be more challenging (Roberts 2023).

A committed center director is important for maintaining a strong connection between WPI and the international sponsors and housing providers throughout the year (Sakac et al. 2021). Key factors for a successful project center include invested center

directors, hard-working faculty advisors, a strong sponsor network, and interested students. Communication and feedback from the director and faculty advisors are essential to keep sponsors engaged (Roberts 2023).

Challenges such as finding enough students, financial barriers, and unfavorable program timing may impact project center success. It is crucial to garner interest from freshmen and sophomore students and secure sponsors to keep students engaged. Laura Roberts relies on networking events and word of mouth to establish relationships with sponsors, and she believes that connections can be helpful but are not necessary (Roberts 2023). Successful project centers require a combination of factors, including invested center directors, hard-working faculty advisors, a strong sponsor network, and interested students. Communication and feedback are critical in sustaining relationships with sponsors.

3.2. Objective 2: Researching and documenting potential partnerships in Montreal

For our second objective we had to research and contact potential partnership companies that are a good fit for WPI. From research we found that Montreal is one of the leaders in industries such as aerospace, engineering, telecommunications, computer science and software production. These companies fit WPI academics and needs (Linteau 2021). From there we looked into the leading companies of these fields located in Montreal to see if they fit WPI culture. The following companies below are those we believe would create strong potential sponsorships for WPI.

Company	Type	About
Bombardier Aerospace	Aerospace	A global leader in aerospace and transportation, Bombardier is a large employer in Montreal and offers opportunities for students in engineering and related fields.
Pratt & Whitney Canada	Aerospace	A subsidiary of the larger aerospace company, Pratt & Whitney, Pratt & Whitney Canada has a major facility in Montreal and hires many engineers and technical professionals.
CAE	Aerospace	A leading provider of simulation and training solutions for the

Company	Type	About
		aerospace and defense industries, CAE has a large presence in Montreal and frequently hires WPI graduates.
BBA	Engineering	An engineering consulting firm specializing in energy, mining, and other industries, BBA has a strong presence in Montreal and often hires students and graduates from WPI in areas such as civil, mechanical, and electrical engineering.
Ericsson	Telecommunications	A multinational telecommunications company, Ericsson has a significant presence in Montreal and hires many engineering and technical professionals in areas
Bell Canada	Telecommunications	A major telecommunications provider in Canada, Bell has a large presence in Montreal and hires many engineering and technical professionals in areas such as network design, software development, and data analytics.
CGI	Computer science and software	A global IT and business consulting services firm, CGI has a strong presence in Montreal and frequently hires students and graduates from WPI in areas such as software development, data analytics, and project management.
Shopify	Computer science and software	A leading e-commerce platform provider, Shopify has a growing presence in Montreal and frequently hires software developers, designers, and other technical professionals.

Company	Type	About
MindGeek	Computer science and software	A technology company that owns several popular adult entertainment websites, MindGeek has a significant presence in Montreal and hires many employees in areas such as software development, data analysis, and marketing.
Ubisoft	Computer science and software	A video game developer and publisher, Ubisoft has a major studio in Montreal and hires many employees in the gaming industry, including game designers, programmers, and artists.

We also had an interview with Laura Roberts, Director of the Worcester Community Project Center. We asked her questions about what we should be looking for in partnership companies and what companies are best to work with. From her experiences of being a director, she stated that she found it easiest to work with nonprofit organizations because they have the most projects to offer students, involve the community, and care about helping students through their projects (Roberts 2023). As a result, we also looked up a list of Montreal nonprofit organizations and visited each of their websites to see which ones would be a good fit for WPI students. The following nonprofit organizations were found to be the best fits for WPI to work with.

Organization	About
Centraide of Greater Montreal	This organization focuses on reducing poverty and social exclusion in the Greater Montreal area by supporting a variety of community organizations.
Dans la Rue	This nonprofit helps youth who are homeless or at risk of homelessness by providing them with food, clothing, shelter, and support services.
Equitas	International Centre for Human Rights Education: Equitas is dedicated to promoting human rights education and advancing equality, social justice, and respect for human dignity.
The Tyndale	This community center offers a range of services to residents

Organization	About
St-Georges Community Centre	of the Little Burgundy neighborhood, including youth programs, food security initiatives, and employment services.
Leucan	Leucan is a nonprofit organization that provides support to children with cancer and their families, including financial assistance, emotional support, and access to specialized resources.
The Montreal Children's Hospital Foundation	This organization raises funds to support the Montreal Children's Hospital, which provides specialized care to children and adolescents.
The Welcome Hall Mission	This nonprofit provides a range of services to people experiencing homelessness or poverty, including food assistance, shelter, and support programs.
Sun Youth Organization	Sun Youth provides a range of services to vulnerable populations, including emergency assistance, school supplies, sports and recreation programs, and more.
Canadian Centre for Architecture	The Canadian Centre for Architecture is a research institution and museum dedicated to promoting understanding and appreciation of architecture and urbanism.
Fondation du Dr Julien	This organization provides support to children and families living in disadvantaged communities through a network of community-based organizations.

We emailed each of the 20 companies above using the email template provided in Appendix B. Our goal was to schedule meetings with each of them in order to gain their interest in becoming a WPI project sponsor and establish a connection, but we have not heard back from any of them. Although we did not hear back, this list of companies should be used as a starting point for future projects.

3.3. Objective 3: Evaluate housing, food, transportation and logistical needs for students in Montreal

To accomplish this objective we broke the budget into categories of housing, food, entertainment and transportation. Using research resources we came away with

the following average costs assuming a 20-21 year old college student staying in Montreal for 7 weeks.

Category	Breakdown	Total
Housing	Rent for a shared BnB or hotel: ($100/night x 50 days)/2 people= $2,500	$2,500
Food	Groceries: $100/week x 7 weeks= $700 Eating out (assuming $15/meal, 1 meal/day): $15 x 1 x 7 x 7 = $735	$1,435
Entertainment	Free activities (e.g., parks, museums): $50 Paid activities (e.g., movies, concerts, festivals, clubs): $700 Shopping: $500	$1,250
Transportation	Flight: $200 round trip Metro/bus pass for 7 weeks: $86.50 x 2 = $173	$373
Overall Total	Housing + Food + Entertainment +Transportation	$5,558

Overall, the estimated total cost for a college student to stay in Montreal for 7 weeks would be around $5,558. Keep in mind that this is just a rough estimate and actual costs may vary depending on individual spending habits. It's always a good idea to keep track of expenses and adjust the budget accordingly. This budget is based on Montreal area averages. Also, in the interest of the project, values were rounded up to give the higher end of a possible spectrum. All that being said, this budget estimate is only $558 dollars over the $5,000 grant given to each student. This means that a student could make adjustments to arrive below $5,000 by cutting costs in less needed areas such as dining-out, entertainment and travel.

3.4. Objective 4: Assessing and documenting student interest in a Montreal WPI Project Center

To begin assessing student interest in Montreal as a WPI project center we looked to information provided by Kent Rismiller. In our interview he mentioned the potential interest that those in winter sports may have for a project center close to many winter sport resorts (Rismiller 2023). Using this information we recorded a number of Ski & Snowboard Club members' opinions on the likelihood of Montreal, Canada as being one of their top three choices for an IQP destination. The following results were obtained from this survey.

Likelyhood of Montreal as a Top Three Choice
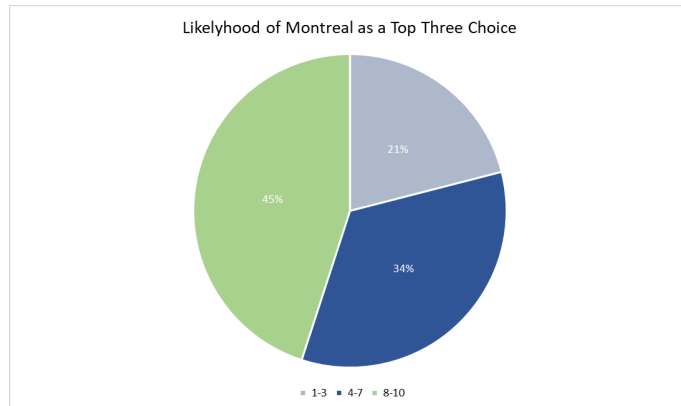
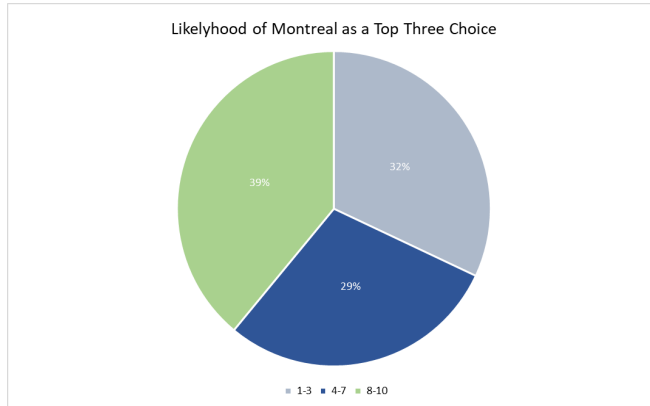As shown in the graph above, 45% of the Ski & Snowboard club's respondents rated Montreal as one of their top three choices for their IQP destination with a score of 8 or higher; however, 21% of respondents were not very likely to choose Montreal as one of their top three choices with a score of 3 or lower. The middle ground showed that 34% of the respondents were somewhat likely to choose Montreal as one of their top three choices with a score of 4-7 (Ford 2023).

Next to determine the likelihood of Montreal, Canada being one of the preferred next three choices for IQP destination, the following results were obtained:

Likelyhood of Montreal as a Preferred Top Three Choice
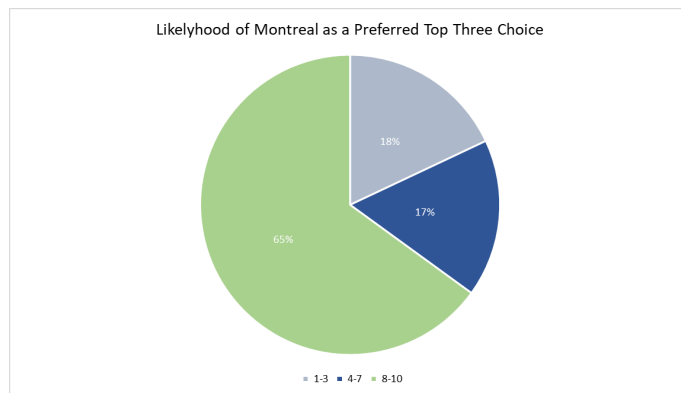
As shown in the graph above 65% of the Ski & Snowboard club's respondents rated Montreal as one of their top three preferred choices for their IQP destination with a score of 8 or higher while 18% of respondents rated Montreal as one of their top three preferred choices for their IQP destination with a score of 3 or lower. Finally only 17% of respondents were somewhat likely to choose Montreal as one of their top three choices with a score of 4-7 (Ford 2023). At a glance these results show promise that there is student interest in a Montreal project center, however, it is important to note that this data is based on a small sample size of 41 students and may not be representative of the entire student population.

Next the general student body was surveyed to gauge interest of the average WPI student in Montreal, Canada being one of the top three choices for an IQP destination. Surveys were set up at the locations discussed in the methods section and the following results were obtained:

As shown in the graph above 39% of respondents rated Montreal as one of their top three choices for their IQP destination with a score of 8 or higher while 32% of respondents were not very likely to choose Montreal as one of their top three choices with a score of 3 or lower. Finally, 29% of respondents were somewhat likely to choose Montreal as one of their top three choices with a score of 4-7.

The general student body was also asked to determine the likelihood of Montreal, Canada being one of the preferred next three choices for IQP destination from which the following results were obtained:
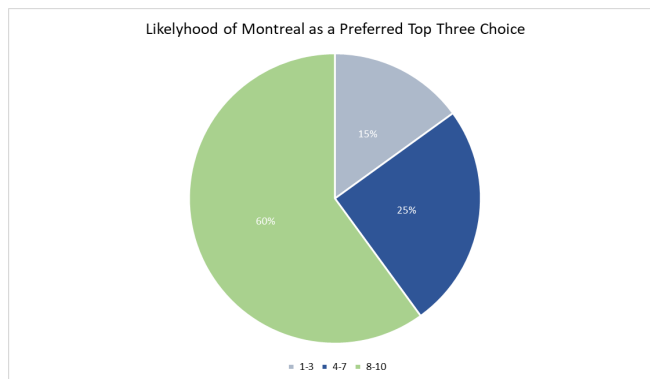
Using the graph above we can see that 60% of respondents rated Montreal as one of their top three preferred choices for their IQP destination with a score of 8 or higher and 15% of respondents rated Montreal as an unlikely choice for an IQP destination with a score of 3 or lower. Finally, 25% of respondents were somewhat likely to choose Montreal as one of their top three choices with a score of 4-7 (Ford 2023). It is once again important to note that this data is based on a small sample size of 44 students and may not be representative of the entire student population.

3.5. Objective 5: Finding a leader for the new project center

Through an interview with Laura Roberts we were able to determine that she has had experience being a director of a project center before as well as working with nonprofit sponsors. Additionally she has an interest in establishing a project center in Canada and has traveled to Montreal itself. We were unable to determine if she is interested in becoming a project director for the new center, but she did express interest in advising.

4. Discussion

Establishing a new project center is possible anywhere including Montreal; it just needs to be affordable for students and faculty, have enough students interested in the location, have a faculty member interested in being the director of projects in that location and have a company partnership to sponsor projects.

We were unsuccessful in getting a company to respond to our email about working with WPI. Since we were unsuccessful in forming any partnerships, the next step that WPI should do to gain a partnership is to look into other ways of contacting these companies. A possible new way to contact potential sponsor companies is looking into any alumni presence in the company or in the area of Montreal that can offer assistance. It is also possible to see if any faculty may have more success in contacting the companies we listed as a company may be more inclined to respond to a higher level faculty member rather than students. In the future, if this is pursued, it should be noted that nonprofit organizations are the easiest companies to work with because they have a lot of work to offer students, get a mutual benefit from the work of the students, and care more about helping students along the way during projects based on past experience (Roberts 2023).

The total estimated budget came out to $5,558. Given that WPI gives each student a $5,000 grant for completing IQPs, this should be affordable for WPI students to complete projects in Montreal. This cost estimate covers all of the students' needs of living in a good location, cooking their own meals as well as being able to dine out, entertaining themselves and being able to get around the city. This is the higher end of the spectrum in cost estimation, therefore a student of lower financial background should be able to lower their budget if they cut expenses in unnecessary categories such as entertainment and eating out. Based on the $5,000 grant from the school, Montreal is an affordable enough city for students to complete their projects.

Overall, the data suggests that Montreal has potential as a top choice for an IQP destination, especially among those interested in winter sports. Almost half of those that participated in the survey for Ski & Snowboard club showed a high interest in Montreal as a project center location. In addition the majority of those within that club who participated in the survey indicated that they would be very likely to list Montreal as a preferred next three choices when looking to go abroad for IQP. While this is positive, the fact that a significant number of students rated Montreal as "somewhat likely" indicates that there is still room to increase interest in the city for those involved in winter sports (Ford 2023). However, it is also important to note that the small sample size of the data means that further research may be needed to fully understand the level of interest in Montreal as a project center destination. This interest also sparks discussion into the ideal term for this project center. Through the student interest results

from the club and faculty input it seems C term is ideal because it is the most popular term for IQPs, offers the best weather for popular Montreal activities, and avoids many major holidays (Roberts 2023). The opinions of faculty combined with the seemingly positive interest from students show promise that a project center in Montreal would be beneficial for WPI.

This interest sparks conversation about what preparation from students may involve. We suggest learning about the culture of Montreal, the dominant French language, the rich history of the city and how it became an industrial center for Canada but further investigation may be necessary to create a strong PQP experience for students.

Finally, having a faculty member with experience and interest in the region can be beneficial in establishing a successful project center in Montreal, but there is yet a faculty member that shows a strong enough interest in becoming a director of the new project center. Laura Roberts is a potential candidate for becoming the director and leading the Montreal project center, given her previous experience as a project center director and work with nonprofit sponsors, as well as her interest in establishing a project center in Canada and familiarity with Montreal. This candidate, however, did not show strong enough initial interest to be considered a champion for the project. Further research will be needed to find an individual committed to becoming a director for the new project center.

5. Conclusion

In conclusion our goal was not achieved, but our team believes that establishing a new project center is possible anywhere including Montreal; it just requires a company partnership to sponsor projects, be affordable for students/faculty, have enough students interested in the location, and have a faculty member interested in leading projects in that location. We additionally believe that WPI should establish a relationship with one of the 20 mentioned companies in Montreal to create a partnership. An establishment of these relationships should be the finalization of project ideas. In terms of a cost the total estimated budget came out to $5,558. Given that WPI gives each student a $5,000 grant for completing IQPs, this should be affordable for WPI students to complete projects in Montreal. We believe that this should be highlighted as a strong benefit of the city and new project center location. Overall, the student interest data suggests that Montreal has potential as a top choice for an IQP destination, especially among those involved in winter sports. Finally, having a faculty member with experience and interest in the region can be beneficial in establishing a successful project center in Montreal, but there is yet a faculty member that shows a strong enough interest in becoming a director of the new project center. Although the goal was not achieved, this project has all the necessary information to achieve this goal in future projects.

References

BBA. "BBA". https://www.bba.ca/en. Accessed 1 May 2023.

Bell Canada. "Bell Canada". https://www.bell.ca/. Accessed 1 May 2023.

Bombardier Aerospace. "Bombardier Aerospace".
    https://www.bombardier.com/en/aerospace.html. Accessed 1 May 2023.

Burnett, Richard. "Best Museums in Montreal." Condé Nast Traveler, 14 Aug. 2018,
    https://www.cntraveler.com/gallery/best-museums-in-montreal. Accessed 1 May
    2023.

CAE. "CAE". https://www.cae.com/. Accessed 1 May 2023.

Canadian Centre for Architecture. "Home - Canadian Centre for Architecture." CCA,
    2023, www.cca.qc.ca/en.

Canada Mortgage and Housing Corporation. (n.d.). Rental Market Report - Greater
    Montreal Area.
    https://www03.cmhc-schl.gc.ca/hmip-pimh/en/TableMapChart/Table?TableId=5.2.
    2&GeographyId=24570&CategoryLevel1=rental&CategoryLevel2=rental-market-r
    eports

Centraide of Greater Montreal. "Centraide of Greater Montreal." Centraide of Greater
    Montreal, 2023, www.centraide-mtl.org/en/.

CGI. "CGI". https://www.cgi.com/en. Accessed 1 May 2023.

Dans la Rue. "Home - Dans la Rue." Dans la Rue, 2023, danslarue.org/en/.

Desjardins, Jeffrey, and Abdoul Barry. *Plan and Promote a WPI Project Center In
    Montreal II*. : Worcester Polytechnic Institute, 2022.

Dupuis, Jacob H, et al. *Investigating the Feasibility of a Project Center In Iceland*.
    Reykjavik: Worcester Polytechnic Institute, 2018.

Equitas - International Centre for Human Rights Education. "Equitas – International
    Centre for Human Rights Education." Equitas, 2023, equitas.org/.

Ericsson. "Ericsson Montreal".
https://www.ericsson.com/en/careers/locations/canada/montreal. Accessed 1
May 2023.

Executive Office of the President. "Countries & Regions." Office of the United States
Trade Representative, n.d., https://ustr.gov/countries-regions.

Fondation du Dr Julien. "Fondation du Dr Julien." Fondation du Dr Julien, 2023,
www.fondationdrjulien.org/.

Ford, Frank. "Ski and Snowboard Club Montreal Project Center Interest Form." 6 April
2023.

Ford, Frank. "Montreal Project Center Interest Form." 21 April 2023.

Jacobs, Mitchell. *Establishing a Project Center In Montreal, Canada*. : Worcester
Polytechnic Institute, 2021.

Kobsa, Alexander C, et al. *Developing a Design Center*. : Worcester Polytechnic
Institute, 2020.

Linteau, Paul-André. "Montreal". *The Canadian Encyclopedia*, 23 September 2021,
Historica Canada. www.thecanadianencyclopedia.ca/en/article/montreal.
Accessed 25 April 2023.

Leucan. "Leucan – Association pour les enfants atteints de cancer." Leucan, 2023,
www.leucan.qc.ca/.

MindGeek. "MindGeek". https://www.mindgeek.com/. Accessed 1 May 2023.

Montreal Children's Hospital Foundation. "Home - Montreal Children's Hospital
Foundation." Montreal Children's Hospital Foundation, 2023,
www.childrenfoundation.com/.

Numbeo. (2022). Cost of Living in Montreal.
https://www.numbeo.com/cost-of-living/in/Montreal

Pratt & Whitney Canada. "Pratt & Whitney Canada". https://www.pwc.ca/en/home.
Accessed 1 May 2023.

Rissmiller, Kent. Personal interview. 31 March 2023. Global School Office.

Roberts, Laura. Personal interview. 25 April 2023. Global Project Center.

Sakac, Benjamin, et al. *Establishing Iqp Partner Relationships In Prague*. : Worcester
        Polytechnic Institute, 2021.

San Andres, Marissa Elizabeth, et al. *Investigating a New Project Center: Cuenca,
        Ecuador.* Cuenca: Worcester Polytechnic Institute, 2015.

Shopify. "Shopify". https://www.shopify.com/. Accessed 1 May 2023.

Société de transport de Montréal. (n.d.). Fares. https://www.stm.info/en/info/fares

Shopify. "Shopify". https://www.shopify.com/. Accessed 1 May 2023.

Sun Youth Organization. "Sun Youth Organization - Montreal Non-Profit Organization."
        Sun Youth Organization, 2023, sunyouthorg.com/en/.

The Tyndale St-Georges Community Centre. "Tyndale St-Georges." Tyndale
        St-Georges Community Centre, 2023, tyndalestgeorges.com/en/.

The Welcome Hall Mission. "Home - Welcome Hall Mission." Welcome Hall Mission,
        2023, www.welcomehallmission.com/en/home.

Ubisoft. "Ubisoft Montreal". https://montreal.ubisoft.com/en/. Accessed 1 May 2023.

Appendices

Appendix A: WPI Faculty Interview Questions

Introduction:

Our team is a group of IQP students investigating the possibility of establishing a new project center in Montreal, Canada. To gain a better understanding of the requirements and logistics needed to establish a new center, we conducted expert interviews with WPI faculty involved in the Global Projects Program. Our objective was to gather insights into the key characteristics of suitable sponsors and projects, as well as the important considerations needed when setting up a new center.

During the interview, which will last approximately 45-60 minutes, we will ask for your opinions and advice on establishing a new project center in Montreal. Participating in this interview is completely voluntary and you have the option to withdraw at any point. If you decide to participate, please inform us whether it's acceptable to record the interview and take notes. Additionally, we would like to confirm if we have your permission to use any of your statements as quotes or if you would prefer to remain anonymous.

As we explore the possibility of establishing a new project center in Montreal, your valuable insights and expertise will greatly aid our research. We hope that by gathering data through expert interviews and other research, we can provide recommendations to the GPC on the feasibility of running a new project center in Montreal.

Questions:

Kent Rismiller

1. What is involved in establishing a new project center?
2. There must have been a process for establishing concurrent centers and what did that involve?
3. Here at WPI we have tracked an increasing class size, does that result in more project centers?
4. We have a partner university in mind (École de Technologie Supérieure). How does that help us and what would we need from them?
5. If we were to look for sponsors for funding what would we look for?

6. We know student support is essential in promoting a new project center, what are the steps involved in gaining that?
7. Promoting a global project center in Montreal has been in progress for years, how do we further push it to the selection board and officially establish it?
8. What are the financial obligations a student needs to think about before going abroad to a global project center?
9. Other comments?

Laura Roberts

1. What is your role as the director of the Worcester Community Project center?
2. What do you enjoy about your role as a director of this project center?
3. What do you see as challenges to being a director of a project center?
4. What sector of sponsors do you find are easiest to work with/do WPI students work best with?
    a. Government
    b. Non-Profit
    c. Business
    d. Other
5. How do you go about meeting new sponsors and establishing relationships with them?
6. How do you sustain relations with sponsors to be able to meet their needs but also meet the needs of WPI students?
7. Montreal is known for skiing and winter sports so with your experience as a skier do you believe that this would be a possible approach to not only garner student interest but also garner sponsors interest?
8. What are the three most important aspects of a successful project center?
9. The "Investigating the Feasibility of a Project Center in Iceland" of 2018 identified three key characteristics of a good Project Center: invested center directors, hard working faculty advisors and a strong sponsor network. Do you believe that there is anything else you would add to this?
10. Other Comments?

Appendix B: List of Potential Company Partnerships

General Companies

Company	Type	About
Bombardier Aerospace	Aerospace	A global leader in aerospace and transportation, Bombardier is a large employer in Montreal and offers opportunities for students in engineering and related fields.
Pratt & Whitney Canada	Aerospace	A subsidiary of the larger aerospace company, Pratt & Whitney, Pratt & Whitney Canada has a major facility in Montreal and hires many engineers and technical professionals.
CAE	Aerospace	A leading provider of simulation and training solutions for the aerospace and defense industries, CAE has a large presence in Montreal and frequently hires WPI graduates.
BBA	Engineering	An engineering consulting firm specializing in energy, mining, and other industries, BBA has a strong presence in Montreal and often hires students and graduates from WPI in areas such as civil, mechanical, and electrical engineering.
Ericsson	Telecommunications	A multinational telecommunications company, Ericsson has a significant presence in Montreal and hires many engineering and technical professionals in areas
Bell Canada	Telecommunications	A major telecommunications provider in Canada, Bell has a large presence in Montreal and hires many engineering and

		technical professionals in areas such as network design, software development, and data analytics.
CGI	Computer science and software	A global IT and business consulting services firm, CGI has a strong presence in Montreal and frequently hires students and graduates from WPI in areas such as software development, data analytics, and project management.
Shopify	Computer science and software	A leading e-commerce platform provider, Shopify has a growing presence in Montreal and frequently hires software developers, designers, and other technical professionals.
MindGeek	Computer science and software	A technology company that owns several popular adult entertainment websites, MindGeek has a significant presence in Montreal and hires many employees in areas such as software development, data analysis, and marketing.
Ubisoft	Computer science and software	A video game developer and publisher, Ubisoft has a major studio in Montreal and hires many employees in the gaming industry, including game designers, programmers, and artists.

Nonprofit Organizations

Company	About
Centraide of Greater Montreal	This organization focuses on reducing poverty and social exclusion in the Greater Montreal area by supporting a variety of community organizations.

Dans la Rue	This nonprofit helps youth who are homeless or at risk of homelessness by providing them with food, clothing, shelter, and support services.
Equitas - International Centre for Human Rights Education	Equitas is dedicated to promoting human rights education and advancing equality, social justice, and respect for human dignity.
The Tyndale St-Georges Community Centre	This community center offers a range of services to residents of the Little Burgundy neighborhood, including youth programs, food security initiatives, and employment services.
Leucan	Leucan is a nonprofit organization that provides support to children with cancer and their families, including financial assistance, emotional support, and access to specialized resources.
The Montreal Children's Hospital Foundation	This organization raises funds to support the Montreal Children's Hospital, which provides specialized care to children and adolescents.
The Welcome Hall Mission	This nonprofit provides a range of services to people experiencing homelessness or poverty, including food assistance, shelter, and support programs.
Sun Youth Organization	Sun Youth provides a range of services to vulnerable populations, including emergency assistance, school supplies, sports and recreation programs, and more.
Canadian Centre for Architecture	The Canadian Centre for Architecture is a research institution and museum dedicated to promoting understanding and appreciation of architecture and urbanism.
Fondation du Dr Julien	This organization provides support to children and families living in

	disadvantaged communities through a network of community-based organizations.

Appendix C: Sponsor Outreach Template

Email:
Subject: Sponsorship Proposal for Interactive Qualifying Project (IQP) from Worcester Polytechnic Institute

Dear [Company Representative Name],

I am writing to propose a potential sponsorship opportunity for an Interactive Qualifying Project (IQP) from Worcester Polytechnic Institute (WPI). As you may know, WPI is a leading institution in project-based learning, with a focus on applying interdisciplinary technical knowledge to real-world problems. Our students work in teams to complete projects that benefit communities, organizations, and companies worldwide.

We are currently seeking a company to sponsor an IQP team for the upcoming academic year. The IQP is a unique opportunity for our students to collaborate with companies and organizations to address real-world problems while gaining valuable experience and skills.This is not an internship. It is project based research and problem-solving in which your company gets to guide our students' projects to your needs. The project would involve a team of WPI students working on a project identified by your organization, with guidance and supervision from WPI faculty members.

Sponsoring an IQP project would be a great opportunity for your company to engage with a talented group of students and to contribute to the education of the next generation of leaders in science, engineering, and technology. The project could also provide your organization with innovative solutions to a problem you may be facing or support your corporate social responsibility initiatives.

If you are interested in learning more about sponsoring an IQP project, please let me know. I would be happy to schedule a call or meeting with you to discuss the details of the project and the potential benefits for your organization.

Thank you for your time and consideration. We look forward to the opportunity to work together and create a positive impact.

Best regards,

Seton King and Frank Ford
Student, Worcester Polytechnic Institute
sking3@wpi.edu
fcford@wpi.edu

Appendix D: Project Center Student Interest Template

General Montreal IQP Interest Form

Hi everybody! Canada seems an excellent choice for a WPI global project center location as it is one of our biggest trading partners and close to home. Montreal for example provides a foreign, multicultural, bilingual experience within driving distance of Worcester. It has outstanding cultural, educational and research institutions, which could have excellent IQPs and MQPs.

We believe that there is an opportunity to establish a project center in Montreal that could be low-cost, educational and fun for WPI students. Montreal offers great nightlife, many activities to do and many places to see. Please fill out the form below to help our project garner interest in the potential of a new global project center.

How likely would you be to put Montreal, Canada as one of your top three choices * for your IQP destination?

	1	2	3	4	5	6	7	8	9	10	
Very Low	○	○	○	○	○	○	○	○	○	○	Very High

How likely would you be to put Montreal, Canada as one of your preferred next * three choices for your IQP destination?

	1	2	3	4	5	6	7	8	9	10	
Very Low	○	○	○	○	○	○	○	○	○	○	Very High

Questions and/or recommendations?

Your answer

Ski & Snowboard Club Montreal IQP Interest Form

Hi everybody! Canada seems an excellent choice for a WPI global project center location as it is one of our biggest trading partners and close to home. Montreal for example provides a foreign, multicultural, bilingual experience within driving distance of Worcester. It has outstanding cultural, educational and research institutions, which could have excellent IQPs and MQPs.

We believe that there is an opportunity to establish a project center in Montreal that could be low-cost, educational and fun for WPI students, specifically those involved in winter sports. Since many mountains are within 2.5 hours of Montreal, some of them including Tremblant (IKON), Killington (IKON), Sugarbush (IKON) and Stowe (EPIC), the potential to center your IQP/MQP around your interests in winter sports is high. In addition, Montreal offers great nightlife, many activities to do and many places to see. Please fill out the form below to help our project garner interest in the potential of a new global project center.

How likely would you be to put Montreal, Canada as one of your top three choices * for your IQP destination?

	1	2	3	4	5	6	7	8	9	10	
Very Low	○	○	○	○	○	○	○	○	○	○	Very High

How likely would you be to put Montreal, Canada as one of your preferred next * three choices for your IQP destination?
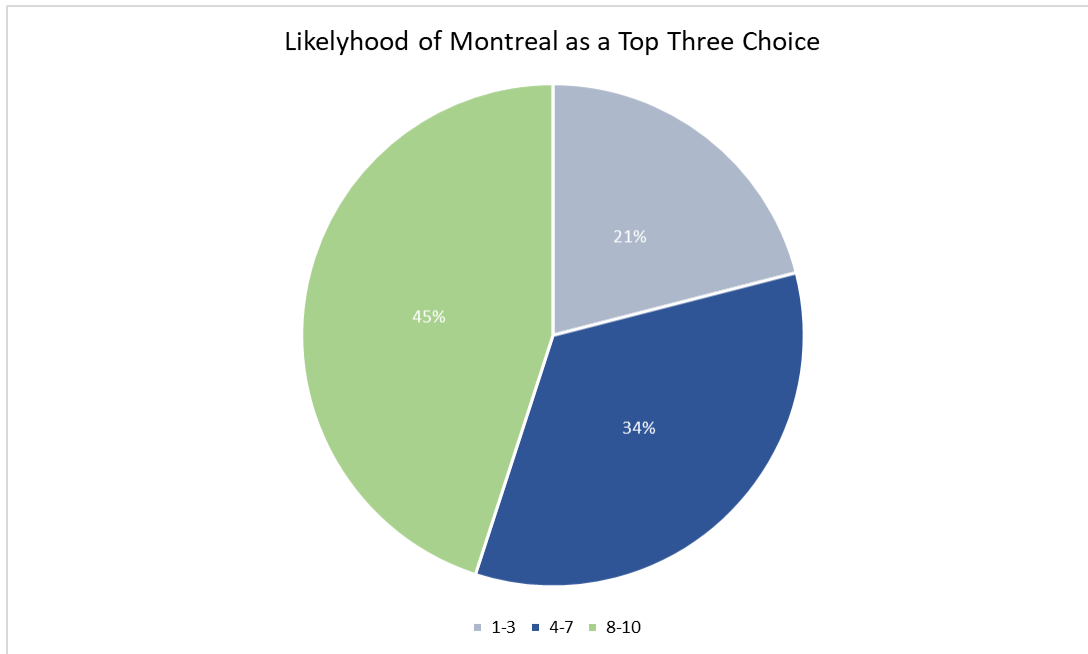
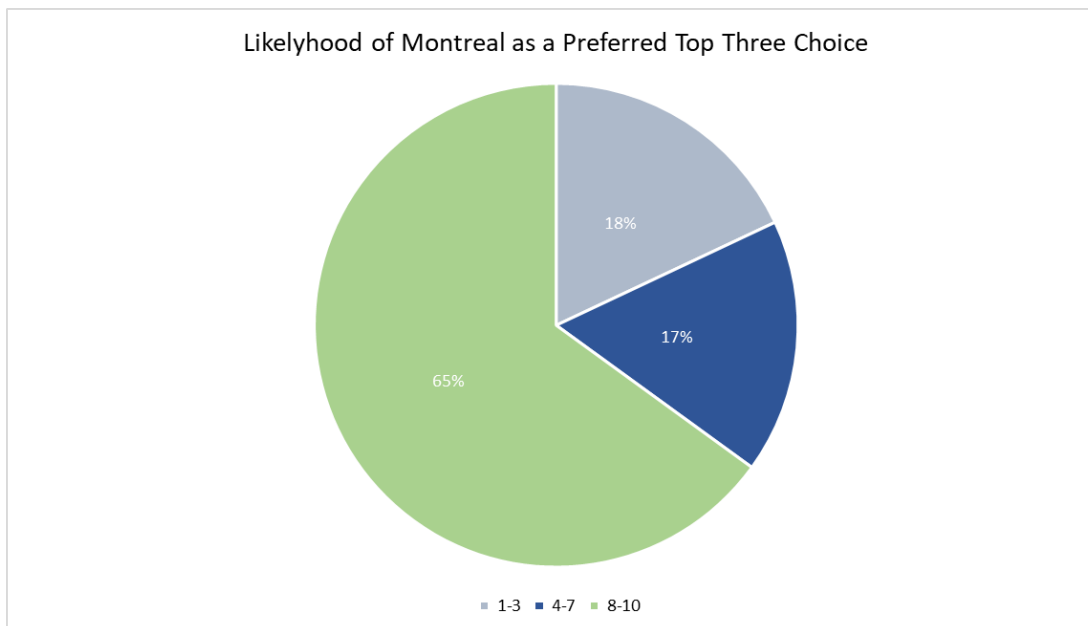|	1	2	3	4	5	6	7	8	9	10	
Very Low	○	○	○	○	○	○	○	○	○	○	Very High

Questions and/or recommendations?

Your answer
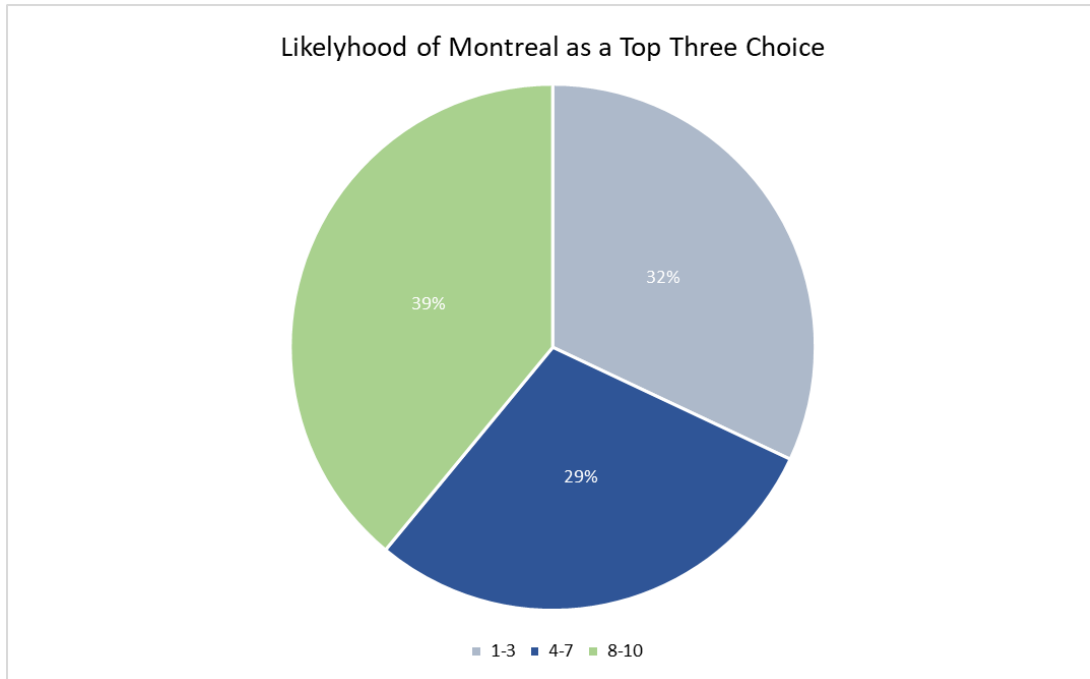
Appendix E: Survey Data

Ski & Snowboard Club

Note: The data represents a small sample size of 41 students and may not be representative of the entire student population. 1=unlikely, 10=most likely

Note: The data represents a small sample size of 41 students and may not be representative of the entire student population. 1=unlikely, 10=most likely

General Student Body Interest

Likelyhood of Montreal as a Top Three Choice
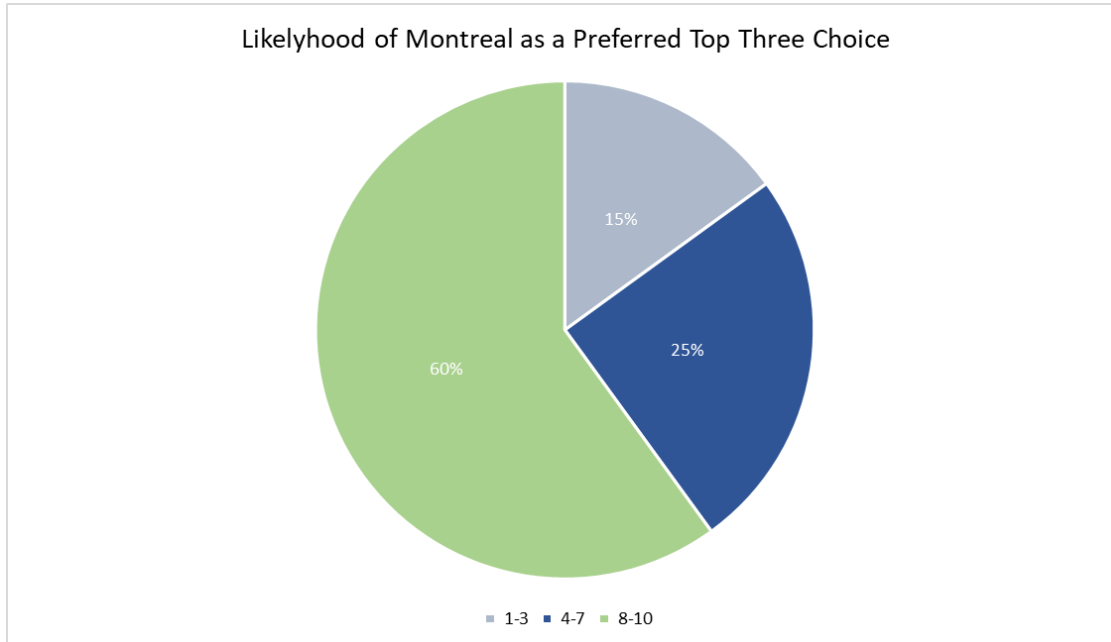
1-3: 32% 4-7: 29% 8-10: 39%

Note: The data represents a small sample size of 44 students and may not be representative of the entire student population. 1=unlikely, 10=most likely

Likelyhood of Montreal as a Preferred Top Three Choice

1-3: 15% 4-7: 25% 8-10: 60%

Note: The data represents a small sample size of 44 students and may not be representative of the entire student population. 1=unlikely, 10=most likely