

Investigating the Feasibility of a WPI Project Center in Iceland

An Interactive Qualifying Project Report, Submitted to the Faculty of WORCESTER POLYTECHNIC INSTITUTE in partial fulfillment of the requirements for the Degree of Bachelor of Science.



WPI

*Reykjavik, Iceland
A Term, 2018-19*

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This report represents the work of [four] WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see: <http://www.wpi.edu/Academics/Projects>.

Abstract

To provide global education to more undergraduates, Worcester Polytechnic Institute has been expanding the Global Projects Program by opening project centers in new locations. The goal of our project was to investigate the feasibility of establishing a WPI project center in Iceland. Through interviews with WPI faculty, we outlined the characteristics of a successful project center. This information guided our work as we interacted with potential project partners and evaluated housing, transportation, and living expenses as WPI students in Iceland. We met with ten organizations interested in student projects and gave recommendations for future logistic arrangements, providing a foundation for establishing the Iceland Project Center.



Executive Summary

Introduction

Worcester Polytechnic Institute established its project-based curriculum in 1972 based on the idea of “theory and practice”. Since then, all undergraduates have to complete two major projects, the interdisciplinary Interactive Qualifying Project and the capstone Major Qualifying Project. These projects challenge student teams to creatively approach real-world questions, building their technical and social skills. Although students can complete these projects on campus, the projects “lend themselves readily to working with external organizations” (Vaz from Downey and Beddoes, 2011). Recognizing the value of global education, WPI enables students to complete projects at one of over 40 project centers around the world. At these centers, students work closely with organizations and communities in a new, “authentic” environment, developing logistical and professional integration skills through their project experiences (Sakulich & Elgert, 2017).

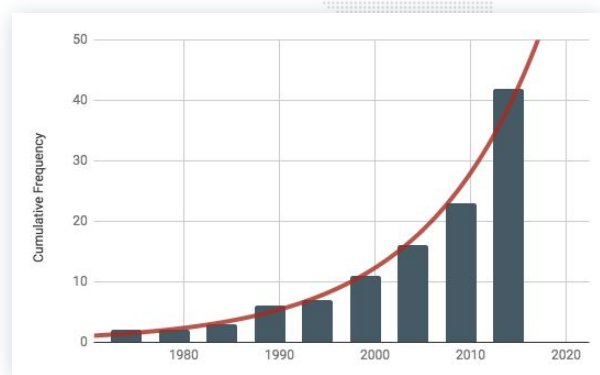


Fig 1. Cumulative number of active project sites vs time

WPI aims to open “more than 400 new seats for IQPs, and 12 new project centers by the 2018-2019 academic year” to expand program capacity (“Strategic Plan”, 2016). Given its active efforts in environmental conservation, its booming tourism industry, and its commitment to cultural preservation, Iceland is a potential location for a new project center, offering IQP opportunities related to Technology and Environment, Energy and Resources, and Historic and Artistic Preservation Technology.

Iceland has many organizations involved in addressing a range of environmental concerns, including soil quality and erosion, plastic pollution in the ocean, and glacial melting. Moreover, tourism is Iceland’s leading industry. Although tourism helps the Icelandic economy, it also presents challenges, such as mitigating tourism congestion, improving infrastructure, and encouraging tourism outside the capital and southern regions (Fox, 2018). Finally, Iceland is dedicated to preserving its rich history, art, and literature and making it accessible to the community and to tourists. Not only does Iceland present interesting project opportunities for WPI students, but it also has an active arts and music scene and offers many recreational activities. This allows students to immerse themselves in Icelandic culture and engage in an academically challenging project environment. Thus, Iceland is a compelling project center location to explore.

Project Goals and Objectives

The goal of our project was to investigate the potential of developing a project center in Iceland. Our work in assessing the “risks and rewards” of pursuing a project site in Iceland was critical for the university to make the final “Go/No Go” decision of establishing the center (Hofstrand, 2009). In our investigation, we considered the distinct needs of the primary stakeholder groups, namely the students and faculty of the WPI community. We also considered the learning outcomes for students and the benefit of student projects for potential partnering organizations in Iceland.



Methods

We structured the project goals around these stakeholder groups and achieved our goal through four main objectives.

Objective 1: Understand the Key Characteristics of a WPI Project Center.

We conducted interviews with project center directors to understand how a successful project center operates. These included logistical questions pertaining to student housing accommodations, transportation, and working conditions. Most importantly, we learned what to expect from sponsors for student projects and how to interview potential sponsors.

Objective 2: Create and document a network of potential sponsors for student projects.

We researched organizations that could benefit from project partnering and compiled them into a list. We contacted over 67 organizations in the Greater Reykjavik area. Ten of them agreed to meet for interviews. We presented the educational mission of an IQP, provided examples of past IQP reports, and learned more about the organizations.

Objective 3: Evaluate available resources for housing, food, and transport in Iceland to meet student needs.

We documented our experiences in addition to those of the student groups working alongside us in Iceland. We investigated expenses, student life, and project experience in Iceland. We collected survey and interview data to support our claims. Experiences with transportation were the largest focus of this objective. Based on our student experience evaluations, we investigated the municipalities of Greater Reykjavik for alternative housing locations.

Objective 4: Produce materials to promote and support an Iceland Project Center to WPI students and sponsors.

We produced media materials to showcase the Iceland Project Center to WPI students and potential sponsors. These materials included promotional videos, student handbook revisions, presentations, and a project center logo. Additionally, we produced a website to compile all the different digital media resources we produced.

Results

Through our first hand experiences in Iceland we were able to evaluate the feasibility of the Iceland Project Center. The following points are findings from our methods. Interviews with IGSD faculty highlighted successful project center characteristics. A successful project center needs invested center directors and faculty advisors as well as a strong sponsor network. We put most of our effort into developing the sponsor network during the project term. Our faculty interviews revealed that certain sponsor sectors are more suitable than others for coordinating interdisciplinary projects. Students tend to work with smaller, non-profit organizations, government agencies, and museums, because these organizations often lack resources to work on projects full-time and are more open to student creativity. We focused on these sectors when finding and contacting potential sponsoring organizations.

We emailed 67 potential sponsors and met with ten organizations who were interested in working with WPI students. Figure 1 indicates the various sectors that these sponsors are a part of. By the end of the term, our sponsor network consisted of four 'definite yes', two 'very interested', and four 'maybe' organizations.

Establishing a point of contact and arranging meetings proved to be the most difficult aspect of creating the sponsor network.

The Icelandic community is very close knit, making it difficult to establish initial communication with organizations. As outsiders, we primarily relied on our emails to present ourselves professionally and to relay key information about the program in a condensed way. Transportation from Akranes to Reykjavik was inconvenient. Additionally, travel to other parts of Iceland proved to be nearly impossible without a car. Moreover, the buses outside the city are considerably expensive. The best, yet most expensive, way for students to see the natural wonders of Iceland is to book a private tour. Student feedback played an important role in evaluating housing, transportation and student life options. We used feedback from other IQP teams to assess Akranes as a housing location and to investigate the municipalities within Greater Reykjavik. In our investigation we found four municipalities that could provide housing options closer to sponsors than Akranes.

Recommendations:

IQP Term

Many international project opportunities are offered in B term, C term, and D term. There are fewer opportunities offered in A term and E term. Figure 2 shows the number of international project centers active per term. New international project centers active during A or E term provide students with more flexibility when scheduling their projects.

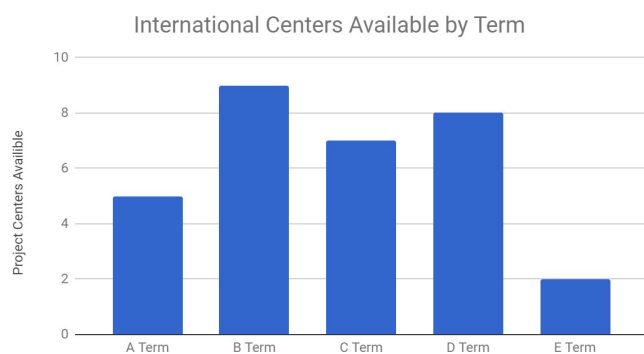


Fig 2. Interested Sponsor Categories (n = 10)

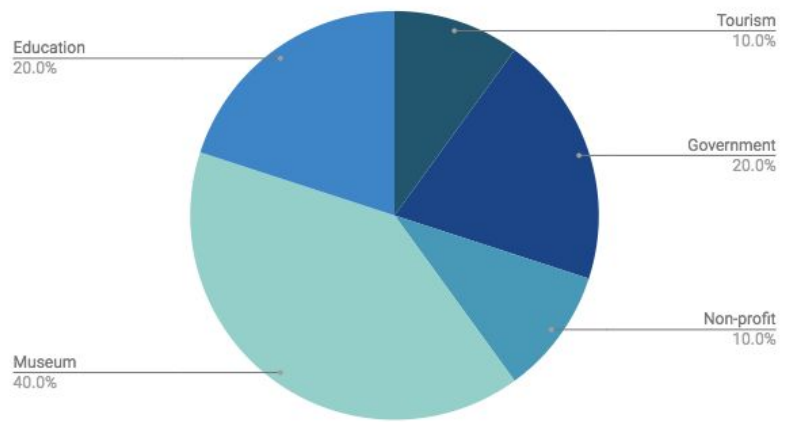


Fig 1. Interested Sponsor Categories (n = 10)

Due to the vast number of tourists visiting Iceland during the summer, housing is expensive and in high demand. Thus, it would be difficult to coordinate affordable housing for 24 students during E term. During B and C term, daylight hours are limited and winter weather conditions are harsh, making project work and travel difficult. Therefore, we recommend that a project center should be opened in Iceland during A Term.

Language Preparation

Based on potential student project complications, we recommend that students learn the fundamentals of the Icelandic language during PQP/ID2050 through the online language learning platform that WPI offers. Exposure to the language would benefit both sponsors and students for several potential projects and enhance student life while in Iceland.

Moreover, we recommend finding a local liaison. This would be helpful for translating any surveys that students produce and in assisting students with their Icelandic during the project term.

Transport

We recommend that IGSD include the price for a two month bus pass within the program costs. Without a bus pass, student spending will greatly increase at the expense of a quality student experience. If housing is in Akranes, the country bus pass costs ~\$354 (39,360 ISK). If housing is in Reykjavik, the city bus pass costs ~\$177 (19,680 ISK). Cards can be purchased ahead of time via the Strætó website and available for students to pick up when they arrive in country.

Group Tour Experience

A group tour would be a great way to introduce students to the natural wonders of Iceland. We recommend reserving a group Golden Circle Complete tour through Arctic Adventures. This tour was very informative and a great introduction to Icelandic history and geology. The tour provided a large variety of sights for the day-long timeframe. We found that the tour was worth the \$108 cost per person, as other tours offer fewer opportunities, for a higher cost.

Housing in Greater Reykjavik

Although Akranes was a suitable housing location, many potential sponsoring organizations and cultural activities were located in the Reykjavik area. Thus, we recommend finding student housing accommodations in the greater Reykjavik municipalities. IGSD should prioritize housing locations in the Kópavogur, Mosfellsbær, Hafnarfjörður, and Garðabær municipalities because they offer many resources for students and provide easy access to Reykjavík center.

Conclusion

The research, results, recommendations, and deliverables we provided serve as a foundation for establishing the Iceland Project Center. As a result of our efforts, the Iceland Project Center has the potential to provide future students with immersive experiences, both recreationally and academically. At the conclusion of this feasibility study, we have determined that Iceland is a fantastic location for expanding the Global Projects Program.



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Lastly, we would like to thank the other eight students who traveled to Iceland to complete their IQPs alongside us. Their feedback was imperative in helping us complete our project.

Authorship

Jacob Dupuis, Austin Hartshorn, Alissa Ostapenko and Karitta Zellerbach all contributed in writing this report. Every team member contributed in editing the report. Some of the more significant contributions by team members include:

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The Need for More Global Project Centers	Karitta Zellerbach
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Objective 2: A network of potential sponsors for student projects	Austin Hartshorn
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4. Recommendations	All
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Deliverable: Student Handbook	All

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Glossary of Definitions

WPI Plan – Undergraduate project-based curriculum implemented in 1970.

Major Qualifying Project (MQP) - Capstone project typically completed by final-year undergraduate students at WPI.

Interactive Qualifying Project (IQP) - Interdisciplinary project typically completed by third-year undergraduate students at WPI.

Humanities and Arts Requirement (HUA) - Required coursework for undergraduate students to enrich their learning in traditional arts, history, language, literature, philosophy and, religion.

Interdisciplinary and Global Studies Division (IGSD) - Department at WPI that oversees the operation of off-campus project centers.

Global Project Center (GPC) - Locations in different countries at which students complete projects, immersing themselves in a new environment and solving real problems.

Global Projects Program (GPP) - a program run by the IGSD offering Global Project Centers around the world at which undergraduate students can complete WPI projects.

Global Projects Lab (Global Lab) - A new initiative within IGSD to incorporate multimedia technologies into WPI projects in order to share findings and ideas within the community. Hosted a workshop during our project experience in Iceland on incorporating media into our project.

ID 2050 – Mandatory preparation course for travel to an off-campus IQP center.

Pre-Qualifying Project (PQP) – Mandatory preparation course for students traveling off-campus for their IQP, teaching country specific culture and if necessary, language.

Site Director - Acts as the bridge between students/advisors, and sponsors. Responsible for coordinating housing and logistics as well as securing IQPs from sponsors.

Site Advisor - Travels with students to the project site. Give feedback to students during the project phase. Advisors also manage logistics and potential emergency situations while on site.

Project Sponsor - Organization (typically external to WPI) that provides students with topics and support related to their IQPs and/or MQPs.

ISK - Currency of Iceland, the Icelandic Krona. 1 Krona ≈ \$.01

1. Introduction and Background

Since Worcester Polytechnic Institute (WPI) established its project-based curriculum in 1972, it has enabled undergraduates to complete degree-required projects at off-campus project centers (Woods, 2004). At these centers, faculty-advised teams of students work with external sponsoring organizations to tackle open-ended challenges related to technology and society (WPI, 2017). Recognizing the ways off-campus learning benefits both students and sponsors, the university has offered project opportunities internationally since 1987. WPI continues to “re-engineer” global education (Davis & Mello, 2003) through its Global Projects Program (GPP). The program currently operates over 40 project centers across the globe (“Project Immersion”, 2018).

Despite the large number of centers, there are not enough to meet the increasing demand for completing projects off-campus. As a result, WPI is making a significant effort to increase program capacity by opening project sites in new locations where students can complete projects (“Strategic Plan”, 2016). Iceland is one possible location for a new project center. In addition to a rich history and unique natural landscapes, Iceland has numerous organizations and research groups offering opportunities for student projects. Our project investigates the possibility of establishing a new project center in Iceland by exploring potential partnerships with Icelandic organizations and evaluating the logistical needs of students.

In this chapter, we explain WPI’s project-based curriculum and discuss the student learning outcomes of completing major projects off-campus. To establish the need for our project, we discuss the increasing demand for new student project opportunities off campus and WPI’s resulting efforts to expand the Global Projects Program. Finally, we explore three major themes of student project opportunities in Iceland and introduce the goals of our work to assess the feasibility of establishing an Iceland Project Center.

1.1 The Project-Based Education of WPI

As an engineering school, WPI follows the standard engineering guidelines provided by the Accreditation Board for Engineering and Technology (ABET). ABET is a non-government organization providing standards of quality for college and university programs in science, computing, and engineering across the United States and internationally (“About ABET”, n.d.). WPI structures the ABET guidelines into a unique project-based curriculum recognized for over 40 years (“Elevate Impact”, 2015). The academic year is term-based and students must take three, seven-week-long courses per term. Taking fewer courses at a time enables students to intensely focus on project work or classwork for an extended period of time.

All WPI undergraduate students must complete two qualifying projects, the Major Qualifying Project and Interactive Qualifying Project, in addition to fulfilling a Humanities and Arts requirement. The Major Qualifying Project (MQP) is similar to the ABET capstone design experience “based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints” (“Criteria”, 2016). The MQP requires three courses of project work and culminates in a final presentation. MQPs challenge fourth-year students to creatively apply the “skills, methods, and knowledge” of their major areas of study to problems similar to those they will encounter in their careers. Students work in close collaboration with team members and faculty advisors to research and analyze a sub-area with their majors. By completing their MQPs, students develop a strong understanding of the current tools and techniques used in their areas of study and place themselves at “a level at least equivalent to that of an entry level professional or graduate student” (WPI, 2017).

ABET programs must also provide students with “the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context” (“Criteria”, 2016). In addition, schools should train students to “work on multidisciplinary teams” and give them “an understanding of professional and ethical responsibility” (“Criteria”, 2016). WPI centralizes the Interactive Qualifying Project (IQP) around these learning outcomes.

The Interactive Qualifying Project (IQP) is one of the outcomes of the curricular redesign brought about by *The WPI Plan* of 1970. The IQP, unique to the WPI curriculum, challenges small, faculty-advised teams of students to “identify, investigate, and report on open-ended [challenges] at the intersection of science and technology with society” (WPI, 2017). IQPs require three courses of project work and an additional course of preparatory work for all off-campus projects (WPI, 2017). Project topics range from environmental preservation to humanistic studies, not only increasing students’ awareness of interactions between society and technology but also pushing students to “question, criticize or reinforce prevailing ethics and value concepts” (Woods, 2004). Meshing scientific inquiry, policy studies, ethics, and technology, the IQP teaches students to realize “the societal implications of their professional work” (Woods, 2004) and to “form a deep appreciation of the interrelationships among basic knowledge, technological advance, and human need” (WPI, 2017).

1.1.1 Learning Outcomes of Off-Campus Projects

Although WPI students can complete their project requirements on campus, WPI projects lend themselves readily to working with external organizations (Vaz & Pedersen, 2002). Through the WPI Global Projects Program, students can partner with a sponsor from “industry, non-profit, non-governmental, or governmental agencies” (WPI, 2017) at over 40 project centers across North and South America, Europe, Africa, Asia, and Australia (Project Immersion, 2018), completing their IQP or MQP projects in one seven-week term.

Richard Vaz and Paula Quinn of WPI surveyed WPI alumni who graduated between 1974 and 2011 to compare the learning outcomes of completing IQP and MQP projects off-campus versus on-campus. Out of 2,500 respondents, 42% completed at least one project off campus, while the other 58% completed both their MQPs and IQPs at WPI. Figure 1 outlines six different learning outcomes Vaz and Quinn used to assess and compare student learning outcomes. Alumni who studied off-campus reported that through their project experiences, they gained greater cultural awareness and self-efficacy and strengthened their skills in interpersonal communication, leadership, and project management. Furthermore, the study identified that 75% of the alumni who studied off-campus gained “enhanced ability to function effectively on a team”, 73% gained an “enhanced ability to effectively manage a project”, and 62% gained “enhanced ability to be an effective leader.” Additionally, 70% of WPI alumni reported that their off-campus project “enriched life in ways not necessarily academic or work-related”, as compared to the 28% who did not participate in an off-campus project. Finally, 44% of alumni who completed at least one off-campus project found an “expanded understanding of global issues” compared to only 24% of alumni who did not complete an off-campus project (Vaz & Quinn, 2014, p. 4-5).

The learning outcomes highlighted in Figure 1 indicate the quality of a student project experience. With the IQP and MQP, students have the opportunity to develop logistical, professional integration, and total integration skills in an “authentic” environment. “Immersive experiences off-campus, where formal instruction is supplemented with informal learning opportunities, are generally considered to be the best way to build global competencies” (Sakulich & Elgert, 2017, p. 5).

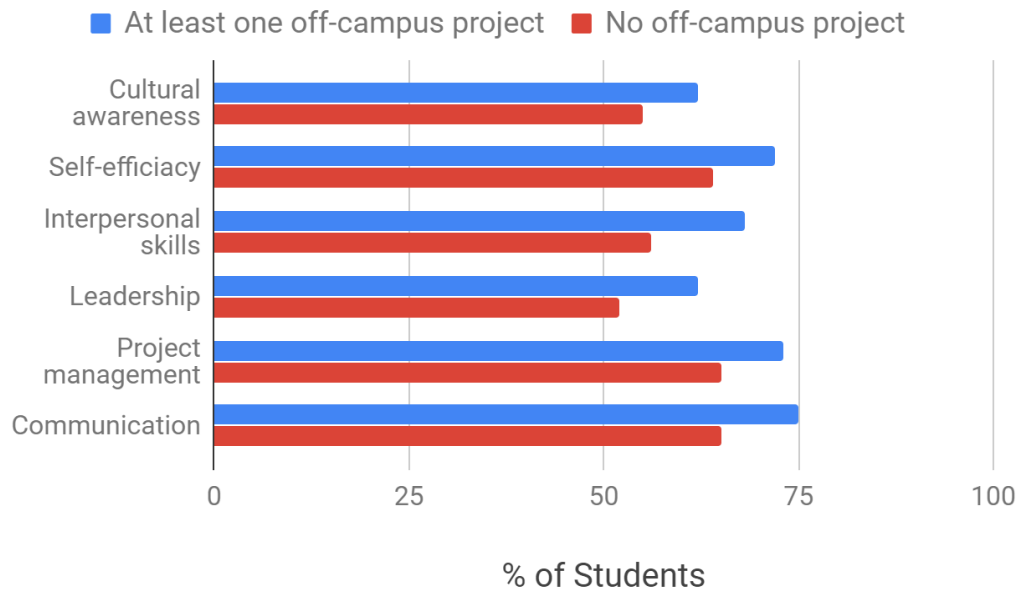


Figure 1: Reported project learning outcomes of students who completed projects on or off campus (Vaz & Quinn, 2014).

1.2 The Need for More Global Project Centers

Given the enhanced learning outcomes of off-campus projects, the university is making an active effort to provide global project experiences to more WPI students. Recognizing the value of a global experience, WPI aims to have 20% more undergraduate students complete at least one project off-campus. This would increase the current percentage from 70% to 90% ("Global Projects", 2017).

As part of the *Strategic Plan for 2015-2018*, "The Global Projects for All" initiative provides a \$5,000 global scholarship for all students starting with the Class of 2022. This helps combat the high program cost of completing a project off campus. Moreover, to increase program capacity, the university seeks to open more than 400 new seats for IQPs, and 12 new project centers by the 2018-2019 academic year ("Strategic Plan", 2016). With the launch of a number of student-led feasibility studies of new project center sites, 100 new seats have been opened already. Moreover, the emerging project centers are a part of the "Global Partnerships" initiative of the *Strategic Plan*. This aims to expand WPI's global project and research connections in China, Europe, and Latin America ("Strategic Plan", 2016).

Figure 2 illustrates the exponential growth of the number of active project sites since the introduction of the Global Projects Program in 1970. There are currently over 40 project centers offering students off-campus project experiences, and as indicated by the red trend line in the graph, more centers will be opened in the coming years.

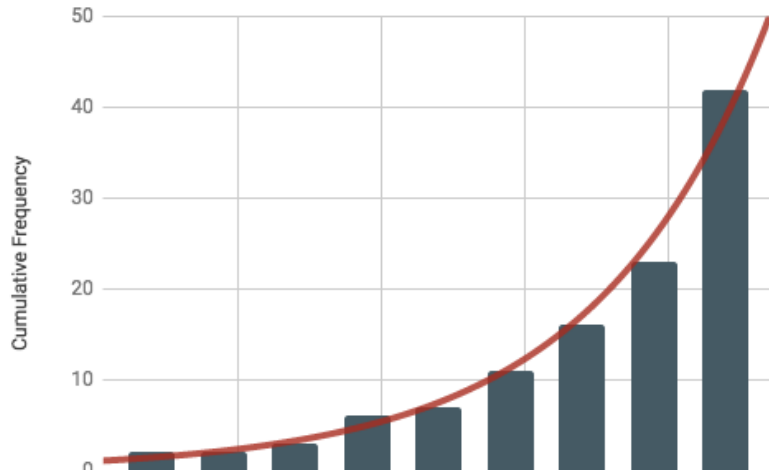


Figure 2: Cumulative number of active project sites vs time

1.3 Setting Up WPI Projects in Iceland

As mentioned previously, WPI is looking to provide global experiences to more undergraduates by expanding the Global Project Program. A potential project center location to explore is Iceland. Iceland is a peaceful, easily-accessible European country with a rich culture. Moreover, the country has active organizations related to several IQP divisions such as Technology and Environment, Energy and Resources, and Historic and Artistic Preservation Technology. Iceland has shown a great commitment to ecological restoration and conservation by increasing efforts in reforestation and eco-friendly farming. As a result of the great influx of tourists in recent years, there are organizations focused on developing environmentally and economically sustainable tourism models. Lastly, Iceland has a strong dedication to cultural preservation with its numerous museums and cultural centers, encouraging art of all types for younger generations and celebrating the folklore, anthropology, and geology that shaped the history of Iceland. We used these themes as focal points when exploring student opportunities for project partnerships in Iceland.

Environmental Conservation Efforts

Iceland has made strong efforts towards the conservation and protection of its environment. Because 42% of the land is classified as a desert with limited vegetation cover, volunteer groups and larger organizations are working to conserve soil and limit erosion. Moreover, as a result of deforestation, about 1% of the Icelandic forest is estimated to remain in Iceland, compared to the historical amounts (Shahin 2018). To combat this, groups such as the Soil Conservation Service of Iceland are currently involved in replanting the forests. Iceland has also been putting efforts in monitoring plastic quantities in the ocean. Businesses are moving away from using plastic and there are groups such as the Blue Army dedicated to combating plastic pollution in the ocean and beaches. Other environmental concerns include glacial melting and climate change. It is estimated that in the next two centuries, all Icelandic glaciers will be completely melted (Iceland Magazine, 2017). Iceland has been at the frontline of developing solutions and studies around these environmental concerns (Bragadottir & Cox, 2008). Given the wide range of environmental efforts in Iceland, WPI students have the opportunity to learn about environmental concerns and the community dynamics surrounding them. Similar to existing project center locations in Maine and Costa Rica, Iceland holds opportunities for WPI students to work on interdisciplinary environmental projects.

Tourism Industry

Following the 2008 global economic collapse and collapse of the Icelandic banking system, unemployment rates skyrocketed, reaching a high of 7.6% in 2010 compared to 2.4% before the crash (Visir, 2011). To rebuild the economy, the government marketed Iceland's natural scenery in hopes of expanding tourism (Adam, 2018). As of 2018, Iceland receives around 2.2 million tourists annually. In 2010, tourism made up only a small part of the Icelandic economy, with 500,000 visitors per year (Icelandic Tourist Board, 2010). However, tourism is now Iceland's leading industry, overtaking the historically-dominant fishing industry. The massive increase in tourism has brought opportunities to Iceland but has also resulted in difficulties. Challenges include mitigating tourism congestion, improving infrastructure, and encouraging tourism outside the capital and southern regions (Fox, 2018). According to the Icelandic tourist board, about 50% of all summer guests stayed in the capital and southern regions (Ferdamalastofa, 2015). This presents an interesting dilemma in the Icelandic tourism social structure. Some argue that the presence of fewer tourists in other regions offers a more authentic experience there. Others say that the smaller, less accessible regions are missing out on the economic benefits that big tourism brings (Snitkjær, 2018). With tourism, an increased outside influence is brought into the country, which leads to increased efforts to bolster cultural preservation. Several current and past WPI project groups have addressed challenges arising from a booming tourism industry in national parks such as Acadia and Glacier National Parks, as well as large European cities such as Venice.

Cultural Preservation

Iceland is committed to preserving local heritage. For example, Icelandic literature and language are highly preserved within the culture. For over a millennium, contemporary writers have produced original sagas. These can still be read today due to the preservation of the Icelandic language (Chartier 43, 2010). In addition to literature, Iceland also encourages art through other mediums. For example, there are 87 music schools and over 30 museums in Iceland (Iceland Saga & Heritage, 2016). These museums range in disciplines from the Reykjavík Museum of Photography to the Icelandic Museum of Rock and Roll. Iceland is also home to numerous cultural events such as film and literary festivals. Iceland has a rich history and a strong dedication to cultural preservation with which students can assist through museum and culture house partnering. Historically, museums and cultural centers have been an important area for IQP work.

Students working in this area could have a direct impact on cultural preservation in Iceland and the opportunity to learn about the process. There are several large institutions such as the National Museum of Iceland and Government Tourism Board. However, there are many small organizations with a staff of fewer than ten people. Because they are often understaffed and limited in resources, these smaller organizations benefit the most from the "pro bono" work that students do (Jiusto & Vaz, 2016). Moreover, smaller organizations provide more freedom for student creativity in solving open-ended challenges.

Our Project

Given the need for new project centers, our project explored the opportunities for establishing a project center in Iceland, where numerous organizations provide unique opportunities for partnerships with WPI students. Moreover, the developed infrastructure, rich culture, and beautiful landscapes of Iceland make it an attractive location for students to engage in projects. We documented our interactions with potential partnering organizations, produced a sponsor catalog, provided recommendations for future students living and working in Iceland, and prepared various materials to showcase the Iceland Project Center to future students and potential sponsoring organizations.

2. Methodology

The goal of our project was to investigate the potential of developing a project center in Iceland. Our work in assessing the “risks and rewards” of pursuing a project site in Iceland is critical for the university to make the final “Go/No Go” decision of establishing the center (Hofstrand, 2009). In our investigation, we considered the distinct needs of the primary stakeholder groups, namely the students and faculty of the WPI community. We also considered the learning outcomes for students and the benefit of student projects for potential partnering organizations in Iceland. Structuring our project work around these stakeholder groups, we achieved our goal through four main objectives:

1. Understand the key characteristics of a WPI Project Center
2. Create and document a network of potential sponsors for student projects
3. Evaluate available resources for housing, food, and transport in Iceland to meet student and faculty needs
4. Produce materials to promote and support an Iceland Project Center for WPI students

In the following sections, we explain how each objective contributes to our overarching goal of investigating the feasibility of an Iceland Project Center. For each objective, we detail our techniques for data collection and analysis and justify our approaches by explaining the importance of the information we gathered.

Objective 1: Understand the key characteristics of a WPI Project Center

To establish a baseline for our research, we studied past IQP reports pertaining to project center development and success. We read and analyzed reports for feasibility studies completed for project centers in Zurich, Switzerland; Wellington, New Zealand; Bar Harbor, Maine; and Tokyo, Japan. In these reports, we highlighted the various techniques past student teams used to assess sponsor opportunities and student logistics. We also studied IQP reports promoting projects in long-established sites such as the Venice, Italy Project Center and Melbourne, Australia Project Center. We noted the number of projects offered year-to-year at each site as well as the various types of sponsors at seven different project centers. This helped inform our decision about what type of organizations to look for in Iceland.

After we developed a baseline understanding of the key components of a project center, we conducted interviews with IGSD faculty who have had experience as Center Directors or IQP advisors. Through these interviews, we gained an in-depth understanding of project, sponsor, and management requirements of successful sites, and learned about challenges project centers have overcome. We conducted 45 minute semi-structured expert interviews based on a convenience sampling of IGSD faculty. Our interviewees included Dr. Richard F. Vaz, Director for the Center of Project Based Learning and Co-Director of the Bangkok Project Center; Dr. Stephen McCauley, Co-Director of the Melbourne Project Center; Dr. Dominic Golding, Director of the London and Nantucket Project Centers; and Dr. R. Creighton Peet, Director of the Namibia and Hong Kong Project Centers. Refer to Appendix A for the interview questions. We also recorded each response, with permission, to recall any information. Our recordings will be destroyed upon the completion of the project.

After conducting the interviews, we compiled all notes and coded the responses by thematic content. We developed a comparative matrix of project center requirements pertaining to sponsors, logistics, and student projects and organized responses based on each interviewee. This allowed us to highlight similar and unique responses from our experts.

We sent surveys to students who completed or were in progress of completing IQP in Denmark and Costa Rica, because both these sites require some form of language preparation.

This information was used as a relevant model to help investigate the need for students to learn basic Icelandic.

Overall, the research we conducted in Objective 1 was a critical step towards investigating the feasibility of an Iceland project center. It provided an important baseline for our knowledge and guided our work when engaging with potential sponsoring organizations and assessing whether an Iceland Project Center could meet WPI student needs.

Objective 2: Create and document a network of potential sponsors for student projects

As mentioned previously, the work Objective 1 guided our interactions with the potential partnering organizations with whom we met. It allowed us to effectively document and assess the landscape of future student projects in Iceland.

To evaluate the landscape of potential sponsors and projects in Iceland, we started by developing a sponsor checklist with characteristics based on criteria from our interviews and research of past project center feasibility studies. As a result of this, when we met with organizations in Iceland, we were able to communicate the goals of student projects.

These organizations mainly consisted of, governmental agencies, and smaller nonprofits focusing on tourism, ecology, historical preservation, and education. This initial round of contacts was compiled through internet research. We also spoke with Donal Boyd, a WPI alumnus who is currently living in Iceland, and asked him about student project opportunities in the country.

We emailed a total of 67 potential sponsoring organizations based in Greater Reykjavík and Akranes. We also considered Akureyri as a potential project center. However, we did not pursue project opportunities in Akureyri due to its remote location. Of the organizations contacted, we scheduled interviews with 10 that expressed interest in the program. These organizations were:

1. Visit Reykjavík
2. Ministry of Education, Science and Culture
3. Strætó Bus Company
4. The Culture Houses of Kópavogur (Umbrella Organization)
 - a. Natural History Museum of Kópavogur
 - b. Gerðarsafn Kópavogur Art Museum
5. University of Iceland
6. Citizens Foundation
7. Akranes Education Board
8. Akranes Folk Museum
9. Museum of Applied Design and Art

Next, we planned our approaches and questions for the semi-structured, informational sponsor interviews. Meeting in-person with sponsors allowed us to establish important connections with organizations in Iceland as a foundation to the sponsor network. Prior to each interview, we researched each organization and prepared a set of past IQP reports that would be of interest to each of the specific organizations with whom we met.

When we met with each organization, we started by introducing ourselves, and then asked about the work our interviewee engaged in. By learning about the organization, we hypothesized where a student team's work could be useful to the interviewee and subsequently introduced the WPI project model. When explaining the IQP, we emphasized the open-ended nature of student projects, as well as the program's position at the intersection of science and

technology in society. Lastly, we asked our interviewee about additional contacts that may be interested in working with students. Please refer to Appendix C for interview questions.

After each interview, one student sent a follow up “thank you” email to the interviewee, along with relevant IQP reports for the organization to look at. These IQP reports gave interested sponsors a clear idea of the IQP report format, as well as the quality and depth of projects. Table 1 shows the specific projects we sent to sponsors.

Table 1: Past IQPs sent to sponsors as follow up materials

Sponsor Type	Relevant IQPs
Museums	<ul style="list-style-type: none"> • “Improving the Conservation Documentation Process at the Wellington Te Papa Tongarewa Museum” (Wellington, New Zealand) • “Developing STEM Activities for the Museum of London” (London, United Kingdom) • “Understanding Visitor Experiences at the Pauline Gandel Children’s Gallery” (Melbourne, Australia)
Environmental	<ul style="list-style-type: none"> • “Creating Awareness of Water Pollution through Monitoring of Lake Fierza” (Tirana, Albania) • “Outlook on a Species: Evaluation of Public Outreach and Education Strategies Regarding Conservation Efforts of the New Zealand Sea Lion” (Wellington, New Zealand)
Tourism	<ul style="list-style-type: none"> • “Preparing Acadia National Park for Modern Tourist Congestion” (Bar Harbor, USA) • “Community Based Tourism at Pellumbas Village” (Tirana, Albania)
Transportation	<ul style="list-style-type: none"> • “Passenger Flow on the Tube” (London, United Kingdom) • “Accommodation of BRT in the Cape Town CBD” (Cape Town, South Africa)

After each interview, we coded and compiled our notes. We highlighted specific details about each organization, as well as potential projects they mentioned in the interview. This allowed us to create a personalized profile for each organization we spoke to. We also offered a follow-up meeting to have in-depth discussions of potential projects and project logistics. During the follow-up discussed more IQP specifics and answered any questions or concerns pertaining to for example, project timing, and time commitments from sponsors.

Using the data from our meetings, we evaluated sponsors based on our subjective observations. For instance, we noted the sponsor’s willingness to collaborate and wrote down any notable quotes or questions we received. The data from all of our attempted contacts and conducted interviews was important in determining our final recommendations to Dr. Sakulich. Following these meetings, we created a sponsor catalog as a supplementary deliverable to Dr. Sakulich. The catalog summarized our interactions with Icelandic organizations, including ones that responded and ones that did not respond. We provided a description of each organization and contact information for future inquiries.

Objective 3: Evaluate available resources for housing, food, and transport in Iceland to meet student needs

From Objective 1, we determined the logistical needs of WPI students that a project center must fulfill. Our work in this objective gave us both quantitative and qualitative data for analyzing the logistics of living and working in Iceland as students.

The Student Handbook for the Iceland ISRP A'18 outlined travel information regarding housing, transportation and food costs for students in Iceland (Sakulich, 2018). To supplement this information, we tracked our expenses on food, transportation, and extracurricular activities. Moreover, we recorded personal accounts of our team's experiences living, traveling, and working in Akranes and Reykjavík. This information was used as an addendum to the Student Handbook on how to experience Iceland on a budget.

In the middle and end of the project term, we interviewed the other WPI student groups in Iceland. Three weeks into the term, we sent a survey to gather initial perceptions of travel, living expenses, and student life. See Appendix E for survey questions. Later in the term, we asked students working alongside us to name their favorite and least favorite aspects of their project experiences in Iceland. We recorded their responses and combined them into a video.

To evaluate our living accommodations, we considered several factors such as distance from potential sponsors, site travel costs, and amenities near student housing. After our experiences in Akranes, we explored alternative housing locations in four municipalities of Greater Reykjavík. We visited each of the four municipalities in pairs and investigated amenities such as clinics and grocery stores, recreational activities, and transportation options around two to three bus stops in each municipality.

Objective 4: Produce materials to promote and support an Iceland Project Center to WPI students

As an additional component of our project, we produced media materials to showcase an Iceland Project Center to WPI students. We gave priority to our work for Objectives 2 and 3 and completed promotional materials in our remaining time. We divided this objective into two parts: preparing materials for students and preparing materials for sponsors.

When producing materials for students, we explored the types of promotional materials current WPI project centers used to understand their contents and structures. We also used video projects we created for a Global Labs media workshop held during the project term. To give WPI students a snapshot of project life in Iceland, we produced a short video showcasing the student life and project experiences of all WPI student teams in Iceland. Some of these experiences include:

- Icelandic Culture
- Project Work
- Sightseeing
- Recreational Activities
- Housing

Drafts of these videos were sent to WPI students on campus. We sent a survey along with the video to get feedback on the excitement and usefulness of the video content so we could improve it as necessary. The survey questions can be found in Appendix F.

These four objectives guided our project preparation and work in Iceland as we sought sponsors and investigated options for student living and learning in Iceland. In the following

section, we outline and analyze our results for each of the four objectives and include deliverables where appropriate.

3. Results & Discussion

We begin this section by outlining the requirements necessary for a successful WPI project center. From these results, we were able to evaluate potential sponsors based on data from interviews and subjective observations. We also evaluated Akranes and Reykjavik as project centers, based on logistical considerations such as housing, transportation, and general student life. Lastly, we fulfilled the fourth objective by producing a set of deliverables for WPI students.

3.1 Objective 1: Understand the Key Characteristics of a WPI Project Center

The preliminary research on past IQP reports provided us with an overview of the various center requirements to consider. Through interviews with IGSD faculty, we gained an understanding of essential WPI project center requirements pertaining to:

- Suitable sponsors and IQP projects
- Logistics regarding the needs of students and faculty
- Management regarding the roles of Center Directors and IQP advisors

Moreover, these interviews provided insight into the challenges that project centers have faced, such as difficulty in coordinating IQPs with sponsors, and how resilient centers overcome those challenges. In the following subheadings, we explain the themes that we synthesized from our research and interviews.

3.1.1 WPI Projects and Sponsor Networks

The project-oriented nature of global experiences at WPI distinguish them from typical study abroad programs. The primary goals of conventional exchanges are “area studies” where students immerse themselves in the culture and language of a different country in a classroom environment. At WPI project centers, students spend 7 weeks solving an open ended problem in a new environment by engaging with an external sponsor and receiving guidance from a faculty advisor. WPI offers project opportunities throughout the academic year to accommodate student scheduling. Figure 3 indicates the number of active project centers per term. Most project opportunities are offered in B, C, and D terms.

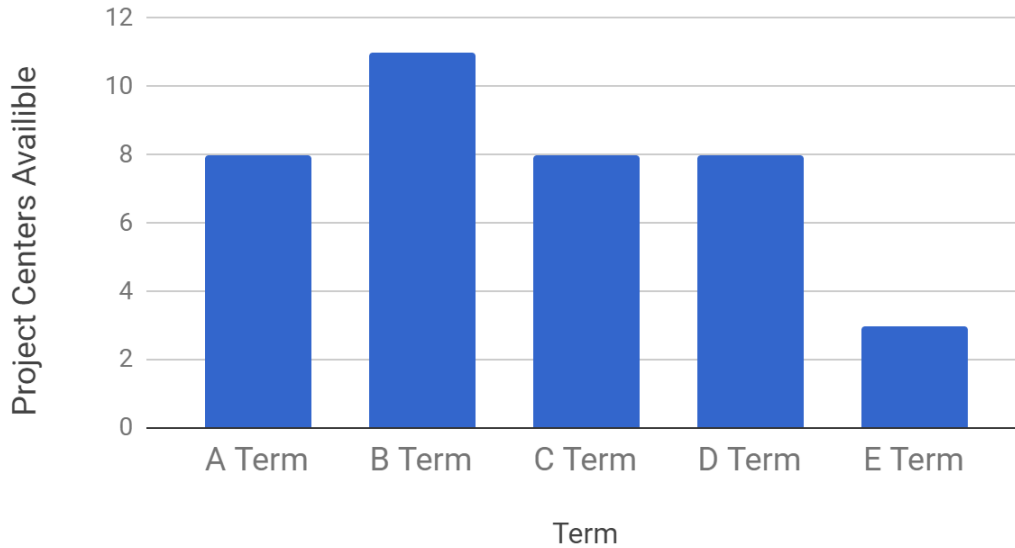


Figure 3: Number of active project centers per academic term (n=32 centers)

Sponsors should be willing to mentor students, devote time to meet with students, and provide open-ended problems to solve. When partnering organizations take the time to work closely with students, students are more likely to “take ownership of their projects, leading to better achievement of learning outcomes” defined by IGSD (Sakulich & Elgert, 2017, p. 8). Such project experiences are also more likely to benefit sponsors. Moreover, engaging closely with project 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” (Sakulich & Elgert, 2017, p. 5).

All of the faculty we interviewed stressed that a strong network of invested, relevant sponsors is crucial for a resilient and productive project center. This is because previous sponsors may be unavailable to work with students at any time. Having strong connections with many sponsors allows for backup plans to organize projects. Maintaining strong connections with certain sponsors year to year is also beneficial because these sponsors already have a clear idea of what IQP and MQP projects entail and coordinating projects is easier.

From research into student IQP reports and from our faculty interviews, we learned that there are many types of sponsors at existing project centers. Students work with large and small organizations from government and quasi-government agencies, non-profits, businesses, museums, and universities. Figure 4 illustrates the various sectors of the organizations with whom students complete projects.

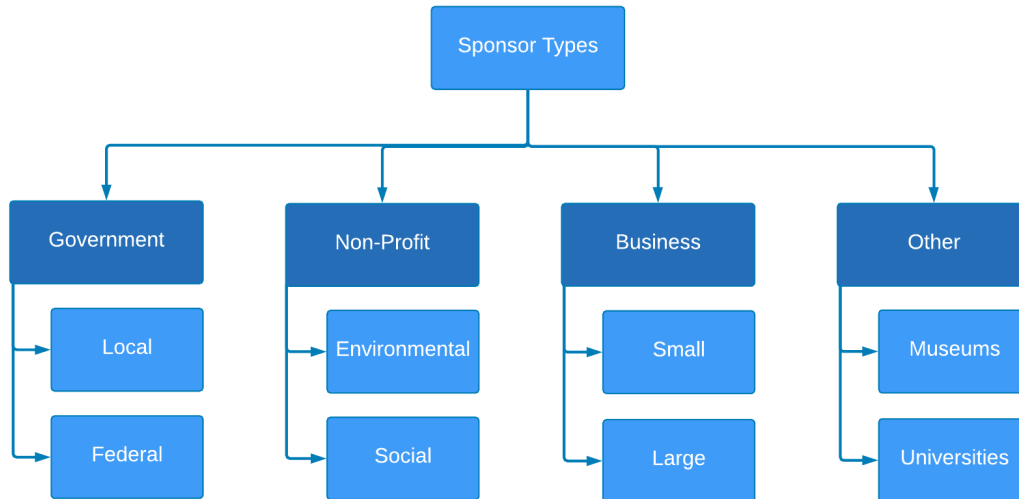


Figure 4: Breakdown of partner sectors with which WPI students complete projects

In our interviews, several faculty members explained that certain sectors are more suitable than others for coordinating interdisciplinary projects, because the educational mission of an IQP is unique. Students tend to work with smaller, non-profit organizations, government agencies, and museums. The goals of these organizations are more likely to align with the open-ended, creative nature of IQPs. Therefore, it is easier to maintain a strong connection with sponsors in these sectors. Projects completed with such organizations allow students to closely interact with a different community, enhancing project learning outcomes. Moreover, smaller organizations are receptive to sponsoring projects because they are often understaffed and do not have the time to pursue all of their project ideas and research initiatives. Having a team of WPI students working full-time helps smaller sponsoring organizations to address more questions and challenges in-depth.

Additionally, it may be more challenging to maintain partnerships with sponsors in larger industries or universities. As we learned in our interviews, private corporations may perceive the project experience as an unpaid internship or view project teams as groups of consultants. However, this does not align with the educational missions of WPI projects, which challenge students to think creatively in a new environment and learn about a different culture and community.

WPI also does not partner with many international universities. Examples of partnerships with universities do exist, such as the partnership with the Chulalongkorn University of Thailand at the Bangkok Project Center for nearly 30 years and the recently established a partnership with a university in India. However, it is often difficult to organize projects with international universities because of scheduling differences. Faculty members also included that university partnerships are difficult to uphold if the research goals and expectations of the professors with whom students are working do not align with the interdisciplinary, social-science focus of IQPs. Although research is an integral component of the project experience, WPI students should closely interact with the community as they complete their projects. Therefore, projects with universities are certainly possible, but they may be difficult to coordinate and maintain.

3.1.2 Management Requirements

During our interviews, IGSD faculty stressed the importance of having invested center directors and faculty advisors who stay closely connected with the project center. A strong center director often serves as a champion. A champion, in this case, is a WPI faculty member who is invested in the project site and is passionate about the location itself. Champion center

directors are especially important for international project centers because center directors work with sponsors to coordinate projects and also secure student housing. Center directors often work with sponsors on finalizing the scope of projects so they meet the university's guidelines for learning outcomes and ensure that students can complete their projects in two terms. Committed center directors will maintain a strong connection between WPI and the international sponsors and housing providers throughout the year. To maintain this connection, center directors stay in touch with project sponsors during the year and may visit the location to coordinate logistics in person.

However, certain project centers, such as the Melbourne Project Center, are often too far for a center director to visit multiple times during the year and manage communication with the sponsor network. To address this issue, the center co-directors of the Melbourne Project Center have stayed connected through a local liaison. The liaison is not affiliated with WPI though in some cases receive compensation from the university, but they know the WPI project program well and can communicate with Melbourne sponsors throughout the year. Moreover, the liaison assists in planning cultural activities for students to have a more immersive experience.

Additionally, committed and knowledgeable faculty advisors are important because they live on-site with students and function as negotiators between sponsors and students. With a strong faculty advisor, the goals of students and sponsors are well-coordinated and clearly understood. Strong communication allows students to receive a more enriching learning experience and to produce work that will likely be more beneficial to their sponsors.

3.1.3 Language Preparation

Several WPI project centers require language preparation before the project term. Based on our project experiences, we researched whether a language learning requirement could be useful for future WPI students in Iceland. We distributed surveys to past and current IQP groups in Costa Rica and Denmark to assess the usefulness of language preparation classes. The complete survey results can be found in Appendix G. Denmark acts as a relevant model to Iceland because many young locals speak English well. In Costa Rica, however, most locals only speak Spanish and have little understanding of English. Students travelling to Costa Rica spent the first 2 weeks learning Spanish while on site, while students travelling to Denmark learned basic Danish through the online tool Transparent Language during the term before leaving for their project experiences.

There were discrepancies in the survey results from the two project centers, as Figure 5 shows. Out of the 32 Denmark respondents, 35% found it worthwhile to learn basic Danish, even though they could not become fluent. However, out of the 16 Costa Rica respondents, 100% responded that learning Spanish was worthwhile. Additionally, 87.6% of Costa Rica respondents wished they learned more Spanish before the IQP term, compared to only 31.3% of Denmark students who wished they learned more Danish.

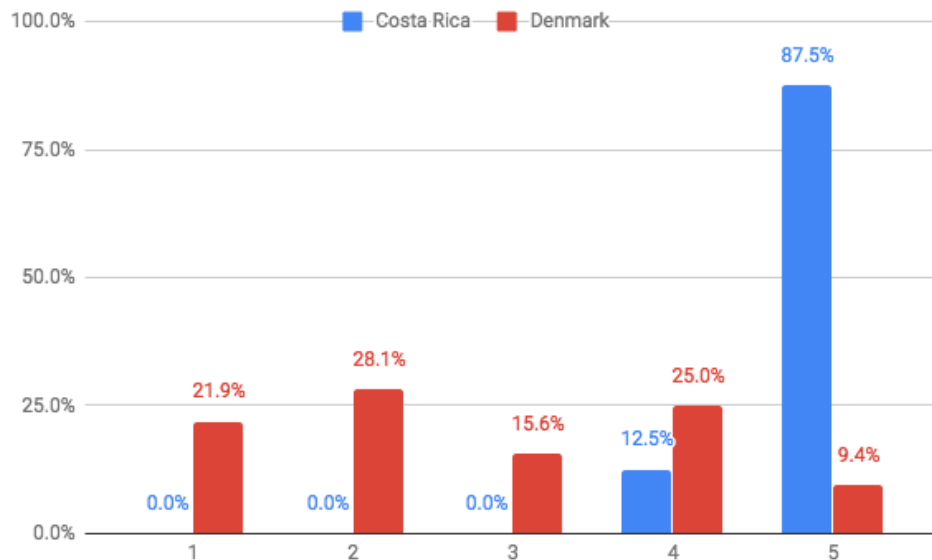


Figure 5: Percentage of respondents ($n = 48$) from both project centers that believed learning the local language was worthwhile (1 is Strongly Disagree and 5 is Strongly Agree)

Language preparation courses were clearly useful for WPI students in Costa Rica because it helped them adjust to the new environment and culture. In contrast, many WPI students in Denmark indicated it was not necessary to learn basic Danish because most locals spoke fluent English. However, 50% of Denmark students agreed that having some handle on pronunciation of places and streets was worthwhile.

Although an introduction to a foreign language is not one of the nine official faculty-approved learning outcomes for student IQPs (WPI, 2017), it is important for developing “global competence” (Sakulich & Elgert, 2017). WPI students in Iceland may not be required to learn Icelandic because many locals speak English. However, we believe a basic understanding of the language provides an opportunity for cultural appreciation and immersion. Even understanding word pronunciation encourages the development of global competency and aids students as they interact with the Icelandic community.

3.2 Objective 2: Create and document a network of potential sponsors for student projects

In this section, we present the types of project opportunities that we discussed with potential sponsors and examine some of the complexities that we identified. First, we compiled a master list of possible sponsoring organizations to contact. We organized potential project partners in a spreadsheet, with one sheet for Akranes and one for Reykjavík, a screenshot of which can be found in Appendix D. For each location, we compiled a list of organizations to contact, recording the name of the organization, the nature of the organization’s work, a brief description of the organization, contact information, notes, and a checkbox to indicate if we had contacted the organization. Then, through email and in-person communication, we developed a network of potential sponsors. We initially emailed 67 sponsors using the Sponsor Email Template found in Appendix C.

Out of the organizations we contacted, 13 responded to us with interest, and 10 agreed to meet with us. We organized the potential sponsoring organizations by category, namely, tourism, government, non-profit, research, museum, environment, education, and industry. Data

in Table 2 include the number of organizations that responded, did not respond, and how many expressed interest in meeting with us.

Table 2: Organization responses based on category

Category	Count	Responses	Interested
Tourism	2	1 (50.0%)	1 (100%)
Government	18	3 (16.7%)	2 (66.6%)
Non-profit	2	1 (50.0%)	1 (100%)
Research	5	0 (0%)	0 (0%)
Museum	11	4 (36.4%)	4 (75%)
Environment	11	1 (9.1%)	0 (0%)
Education	12	2 (16.7%)	2 (100%)
Industry	5	1 (20%)	0 (0%)
Total	67	13 (19.4%)	10 (76.9%)

We conducted semi-structured interviews with ten interested organizations. Most sponsors were either government ministries or museums. We were very successful when we were able to set up meetings. However, establishing a point of contact and arranging meetings proved to be the most difficult aspect of creating the sponsor network.

Prior to meeting with potential partnering organizations, we developed a presentation to introduce ourselves, WPI, and detail the Global Projects Program. We included information on the project time frame, possible student deliverables, and named other project centers' partnering organizations. Additionally, we included information about the time and mentorship commitment sponsors could expect when working with students. We showed this presentation to potential sponsors that we met with. It proved to be a helpful way to organize and relay all the important information about the nature and logistics of student projects.

3.2.1 Types of Sponsoring Opportunities

In our meetings with potential partnering organizations, we discussed their goals and challenges to brainstorm possible student projects. For each sponsor, we identified the project topics they discussed with us, past IQPs that are relevant to the organization, and our observations about the organizations. The organizations we met with presented many of their own project ideas. Moreover, Donal Boyd recommended that impact studies could be an area of interest for potential sponsors in Iceland. Inspired by Mr. Boyd's impact study idea, we mentioned potential impact studies to many organizations we met with to encourage more potential project topics. Impact studies that organizations discussed ranged from gauging visitor experience to policy effectiveness.

We met with four museums, including the Akranes Folk Museum, the Gerðarsafn Kópavogur Art Museum, the Kópavogur Natural History Museum, and the Museum of Design and Applied Art. In our interviews with museums, we found several project themes emerge. These themes included projects that looked at community engagement with events and exhibits, as well as developing educational programs and integrating technologies into exhibits for museum visitors and student groups. We observed that these museums were often very open to the idea of student projects because they had a small staff and limited resources. Although certain museums were worried about logistic complications, all were very interested in the

possibility of working with students. Unfortunately, organizations in other sectors did not meet the same level of enthusiasm.

Although Iceland is a very environmentally focused country, we were disappointed to find that many environmental organizations did not respond to us. Thus, we were not able to explore environmentally-related project opportunities to the extent we expected. However, we met with a group of biologists who manage the Kópavogur Natural History Museum. Aside from giving tours and curating exhibits, they were involved in monitoring water quality in Icelandic lakes, and they were interested in coordinating projects with WPI students and the museum. In addition to assessing visitor experience in the Natural History Museum, they discussed environmentally-related projects students could complete for the museum, including monitoring water quality in Icelandic lakes and raising community awareness of endangered species.

We also met with Visit Reykjavík, an organization in the tourism industry. In our interview with Visit Reykjavík, we were interested to learn that the Icelandic infrastructure struggled to keep up with the massive increase in tourism. As a result, project opportunities in the tourism sector mainly involve human ecology studies. Students could measure tourist counts in the city of Reykjavík, track the flow of tourists, and design walking paths similar to those in other cities. Additionally, we learned that there are new tourism policies being developed on the national scale that will be implemented within the next year. Visit Reykjavík is one of many groups that is interested in measuring the new legislative success.

Additionally, we met with two government organizations, Strætó and the Ministry of Science, Education and Culture. Potential project ideas with these organizations included impact studies regarding the effectiveness of new policies and procedures. Strætó also posed project ideas related to transportation, such as using data and community feedback to determine if bus timetables are useful for the community and how they can be improved. Moreover, the Ministry of Science, Education and Culture was interested in the idea of project based learning and integrating it into education in Iceland. We met with several individuals from the University of Iceland, and they were very interested in student projects. Moreover, we met with the Akranes Education Board, which oversaw the educational programs for all the schools in Akranes. Both the university and the Akranes Education Board were interested in project-based learning, but they were unsure if they could partner on projects. The University of Iceland was concerned with project logistics, while the Akranes Education Board deferred the question to the local principals. Neither organization gave an additional response.

Finally, we met with one non-profit organization, Citizens Foundation, an organization that works on using technology to inform voters and public policy. The foundation came up with several project ideas, including measuring community engagement with their platforms, developing global awareness strategies to promote their software to new countries, and developing documentation to aid in the adoption of their technologies. Citizens Foundation proposed a project also that involved students working on more technically focused software development projects. Because of the highly technical nature of this idea, we see this as a potential MQP project for students studying Computer Science. The organization was very interested in working with WPI due to prior experience working with Elon University students a few years prior, which they described as being a positive experience for their organization.

All of the organizations with whom we met were interested in working with WPI students or knew of someone that would be. Smaller organizations were especially interested in working with students because they lacked the staff and resources to take on additional projects independently. The sponsor catalog provides a complete collection of all potential sponsors and important information for each organization.

3.2.2 Complexities of Establishing a Sponsor Network

Although we were able to spread awareness and spark interest in the student projects program to Icelandic organizations, we faced several complexities as we established a sponsor

network around Akranes and Greater Reykjavík. In our discussion with Donal Boyd, he mentioned that the Icelandic community is very close knit, making it difficult to establish initial communication with organizations. As outsiders, we primarily relied on our emails to present ourselves professionally and to relay key information about the program in a condensed way. This complicated our efforts to develop a large and diverse sponsor network. Out of the 67 organizations we contacted, only 19% of them responded to initial outreach. It was especially difficult to build a foundation of trust with many organizations in Akranes. It is our impression that, as outsiders in a small town, it was even more important to have a reference when contacting organizations. We were also surprised to learn from our Akranes contacts that our email was initially perceived as spam because of the group alias included in the cc of the email, “*gr-ipc18-establishers*.”

Language barriers may have complicated our communications with environmental volunteer groups and other smaller organizations. As we learned from Donal Boyd some rural and small staffed groups do not speak English well, so they are less likely to respond to an email written in English. Calling and emailing these organizations would require a comfortable knowledge of the Icelandic language. Thus, we did not follow up on phone communication with most of these organizations. Moreover, an organization we met with explained that many older individuals in the Icelandic community preferred to speak Icelandic. This could certainly present barriers for student projects in the future. If students were to interact with community members of all ages, they would need to have a basic understanding of the Icelandic language, or a translator available to them.

Fortunately, individuals in larger organizations or museums in Greater Reykjavík and Akranes spoke English comfortably, so they understood and responded to our emails. In addition, including our Icelandic phone numbers in emails helped encourage responses from organizations in Akranes because the numbers indicated we were not sending spam emails. Once we established a basis of communication with an individual in an organization, we could effectively snowball additional contacts because individuals in Icelandic organizations were well-connected. The individuals we met with often provided us with additional contact information of someone who could be interested in working with WPI students. Some individuals even personally called or emailed others they knew and explained the projects program to them. This made it easier to spread awareness of student projects to more organizations and helped us build a network of potential project partners.

Project-based learning was unfamiliar to many of the organizations we met with. In our interactions with sponsors, we learned that students in Iceland do not typically engage in internships with organizations. Moreover, people in Iceland cannot work without pay. Although the student project program was a novel concept for many of our interviewees, we were able to relay important information on the IQP in an organized manner by preparing a presentation on the projects program. Attaching the presentation to the emails we sent to organizations provided interviewees with deeper background on the program before we met with them, allowing us to cover further details in our meetings. We used the presentation to guide our meetings with potential project partners, effectively covering important details pertaining to project logistics and project nature.

In several of our meetings, we encountered difficult questions concerning project logistics. Notably, an organization asked whether a student group was guaranteed to work on projects with them next year. We explained that the purpose of our interviews was to spread awareness of the student program and to gauge interest in project partnerships. However, we could not ensure that a student group would work with a particular organization in the following year, because there are only six student teams traveling to Iceland at a given time.

3.3 Objective 3: Evaluate available resources for housing, food, and transport in Iceland to meet student needs

By surveying the WPI students working alongside us and recording our own experiences, we evaluated the options for housing, food and transport in both Akranes and the Reykjavík area. In general, we have found that the cost of living in Iceland is much greater than in the US.

3.3.1 Transportation

In 2017, a study reported that about 24% of Akranes residents commute to Greater Reykjavík for work. A car ride from Akranes to Reykjavík takes between 50 and 60 minutes using the undersea Hvalfjörður tunnel, while a bus ride takes well over an hour because it requires connecting stops. To speed up travel to Reykjavík, a ferry service was piloted from June to October 2017 after a 19-year suspension due to the use of the tunnel. It took twenty-five minutes to travel to Reykjavík by ferry, a dramatic cut down on commuter time (Iceland Magazine, 2017).

Unfortunately, the town suspended the ferry service between Akranes to Reykjavík in 2018. From a call with the company, we learned that the ferry service was a test project and the town decided that it was not going to continue. We also spoke to Akranes residents, who stated that the town could not secure a suitable ferry to rent for the 2018 season. The prior rental ferry was secured from Norway, and was not intended for travel across the bay because of unpredictable Icelandic weather. Currently, the only means of transportation into the city of Reykjavík from Akranes are by public bus or a private car with a \$9.00 (1,000 ISK) toll each way. Transportation is available in both Akranes and the Reykjavík area through the Strætó bus network, as Figure 6 indicates.

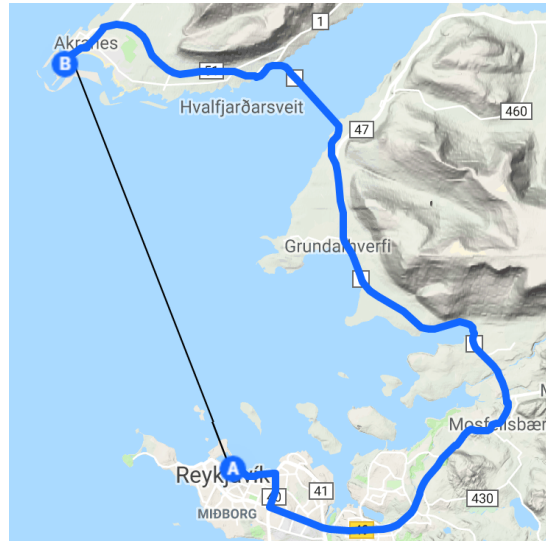


Figure 6: Route from Akranes to Reykjavík (Google Maps, 2018)

Since the ferry was not in service, we relied on the public bus for travel. There was one bus route that operated between Akranes and Reykjavík, namely the 57 line. Despite the schedule in place, bus times could be unpredictable. Due to the rough and unpredictable Icelandic weather, country buses could be delayed for up to 40 minutes. Our team experienced this on a Saturday morning while waiting for a 7:30 A.M. bus that did not arrive until after 8:00 A.M. Moreover, the customer service line did not open until 9:00 A.M. on weekends so we had

no way of knowing if the bus was en route. We were also not the only group to experience bus delays or inaccurate times. There was a bus stop approximately three minutes away from the hostel where we stayed, however the bus was not always scheduled to service that stop. Most of the time, students had to walk approximately 15 minutes to the closest stop. Furthermore, the country bus from Reykjavík to Akranes did not run past 11.00 P.M. If students wanted to attend an evening event in Reykjavík, for example, they would also have to find housing there, because there was no way to get back to Akranes.

Many students were dissatisfied as a result of these complications. In a survey of the eight other students travelling with us during A Term 2018, 50% of responses to the open-ended question “Is there anything you dislike about your experience in Iceland” stated they were not satisfied with transportation or location in Akranes. Moreover, 88% of responses rated transportation as either a one or two out of five in quality. The complete list of survey results can be found in Appendix H.

Additionally, transportation by bus was very expensive. A round trip from Akranes to any point in Reykjavík involved crossing two travel zones and cost students \$16 (1,840 ISK) per trip. Students had to pay a \$4 (460 ISK) fare every time they traveled to a new travel zone. To pay for trips, students could use credit cards, the exact amount of cash, or pre-purchased paper tickets. Students could also buy both country and city bus tickets through the Strætó App. The app was available on the App Store and Google Play. It should be noted that buses in the capital region (routes 1- 44) only accepted payments by tickets, bus cards, or cash and students were not able to purchase bus cards or tickets on board the buses. However, buses driving outside the capital region (routes 51-89) accepted payments by tickets, bus cards, cash, and debit, and credit cards (Visa or MasterCard). Tickets and bus cards had to be purchased through the app or a station.

When passengers had to transfer to a different bus line, there was the option of asking for a Skiptimiði or “exchange ticket”. This allowed passengers to transfer to another bus while paying a single fare, as long as they transferred to another bus within a given time limit. In the capital area, exchange tickets were valid for 75 minutes. Outside the capital they were valid 90 minutes after the scheduled traveling time. When using paper tickets, students should ask the driver for a Skiptimiði. However, if students purchased tickets in the Strætó app, the exchange ticket was integrated into the fare; city and country tickets were activated for a particular amount of time and could be reused before the time limit.

As an alternative to paying for individual trips, students could also buy a general card for travel. These cards could be purchased for a period length of 1-12 months. Country bus cards allowed for unlimited roundtrip travel from Akranes to Reykjavík and within the capital region of Reykjavík, and they could be purchased online through the Strætó website. A 1-month card cost \$221 (24,600 ISK) while a 2-month card cost \$354 (39,360 ISK). These monthly passes greatly reduced travel costs for students, considering that 22 round trips from Akranes to Reykjavík cost \$364 (40,480 ISK). If students were housed in Greater Reykjavík, they could buy a city bus pass for \$108 (12,300 ISK) to travel on one of the 29 bus routes in the area (Strætó BS).

3.3.2 Location: Akranes

Through our firsthand experiences, Akranes was a suitable town for student accommodation. We discovered some interesting details about the town, logistical concerns, and evaluated the town's project opportunities. From our initial experiences in Akranes, we got the impression that the town was fairly quiet and empty. Although Akranes had a population of 7,000, we saw very few people in the shops and cafes during the day. We learned that the fishing plant in Akranes shut down and moved to Reykjavík in 2017 (HB Grandi, 2017). An estimated 90 employees in Akranes either lost their jobs or had to commute to Reykjavík. Moreover, commercial Akranes fisherman received cancellation letters to cease fishing, further reducing industrial activity in the area (Skessuhorn, 2018).

Because IGSD could not secure housing in Reykjavík for all 12 WPI students, we lived in a hostel in Akranes and saw some unforeseen housing circumstances. Firstly, people constantly moved in and out for the night. Students continuously shared the common areas and kitchen space with other visitors. This made it difficult to work in the hostel. Also, there was poor communication between IGSD and the hostel staff. The hostel staff was under the impression that students were going to “be in school all day”. However, we often worked at the hostel because it was a free working space with WiFi. One of the largest complaints from students was that the internet at the hostel was slow, especially in stormy weather. Although there was a library in Akranes, it was a 20 minute walk from the hostel and it had poor WiFi connection. Students also worked at a nearby cafe that had good WiFi, but it was not an open workspace.

Living in Akranes, we found that not a lot happened in town. Moreover, the Akranes city bus did not operate frequently or on weekends, so we resorted to walking. There were several sites to see near the hostel, including the Akranes lighthouse and a beached rustic boat. The rustic boat also provided a great location for viewing the Northern Lights later in the term. Moreover, there were several enjoyable restaurants and cafes within ten minutes’ walking distance from the hostel. The nearest grocery store, Krónan, was a 20-minute walk and was inconvenient when students had to buy a lot of groceries. Another grocery store, Bónus, was not within walking distance from the hostel. From Akranes, we could also hike Akrafjall and Esja, two mountains in the area. Akrafjall was located just outside of Akranes, but it was not accessible by bus. We had to walk over an hour through the town and along farm roads to reach the base of the mountain. We also took the 57 bus line to the Mount Esja hiking center. We could not hike very often, however, because the weather was very unpredictable, with strong wind gusts and intermittent rain and sun. On weekends, many students traveled into Reykjavík because there were many more options for dining, museums, shopping, and sightseeing. However, it was difficult to travel late at night or early in the morning, because the country bus to and from Akranes did not run frequently.

3.3.3 Location: Greater Reykjavík

Reykjavík, the country's capital and largest city, is a cultural hub with plenty of events, art, music, and dining. Furthermore, there are many points of interest within 20 minutes’ walk of each other, including numerous historical and art museums. There are also many cafes and restaurants offering a range of cuisines.

We found that it was easy to receive service or ask people for help in Reykjavík because they were accustomed to English speakers. However, dining at restaurants was very costly. To budget our expenses on food, we purchased groceries. The most cost-effective grocery store options were Bónus and Krónan. Moreover, Iceland accommodated a range of student dietary needs. For instance, there were vegan/vegetarian and gluten-free options in both Akranes and Reykjavík. Restaurants and grocery stores labeled such dishes and products with a V or GF.

Moreover, there are several public libraries in the Reykjavík area where students can complete work on their projects. During the summer hours, libraries are typically open between 10:00 and 5:00, however, this varies depending on the specific library. Our team found these libraries to be great places to work when we were visiting Reykjavík for our interviews.

Although WPI students were unable to drive to the natural wonders in Iceland, they could book tickets to guided driving tours with reputable companies. Many of these tours leave from Reykjavík and vary from one to three days, allowing tourists to see and learn about Iceland’s famous natural sites, such as Þingvellir National Park, the Geysir Geothermal Area, and Gullfoss waterfall. There are other guided tour options to see glaciers and more sites along the South and West coasts of the country. For \$108 per person, our team embarked on the Golden Circle Complete tour through Arctic Adventures. The tour lasted a day and was a fun way to see memorable sites and learn about Icelandic history and folklore. Moreover, students

could also visit the iconic Blue Lagoon in Reykjavík, but for a less expensive swimming experience, students could go to one of the many public geothermal swimming pools in the city.

3.3.4 Housing Options

The cost of living in Reykjavík is extremely high. Finding a common housing location for 24 students may prove to be a challenge, but would allow for an enriched experience, because students would be closer to sponsors and able to enjoy more of what the city has to offer. This is also stated in the IGSD bylaws, which details that housing should allow for cultural immersion and community interaction. It is also important to consider that the IGSD requires housing to be safe, affordable and provide students and faculty with a private, productive environment where they can work on their projects.

As seen in Figure 7, housing types used for hosting off-campus IQP and MQP teams varies, with self-catered apartment housing being the most popular. Teams assessing the feasibility of project centers in Switzerland; Wellington, New Zealand; and Japan considered housing options from various cities and suburbs in their countries of interest.

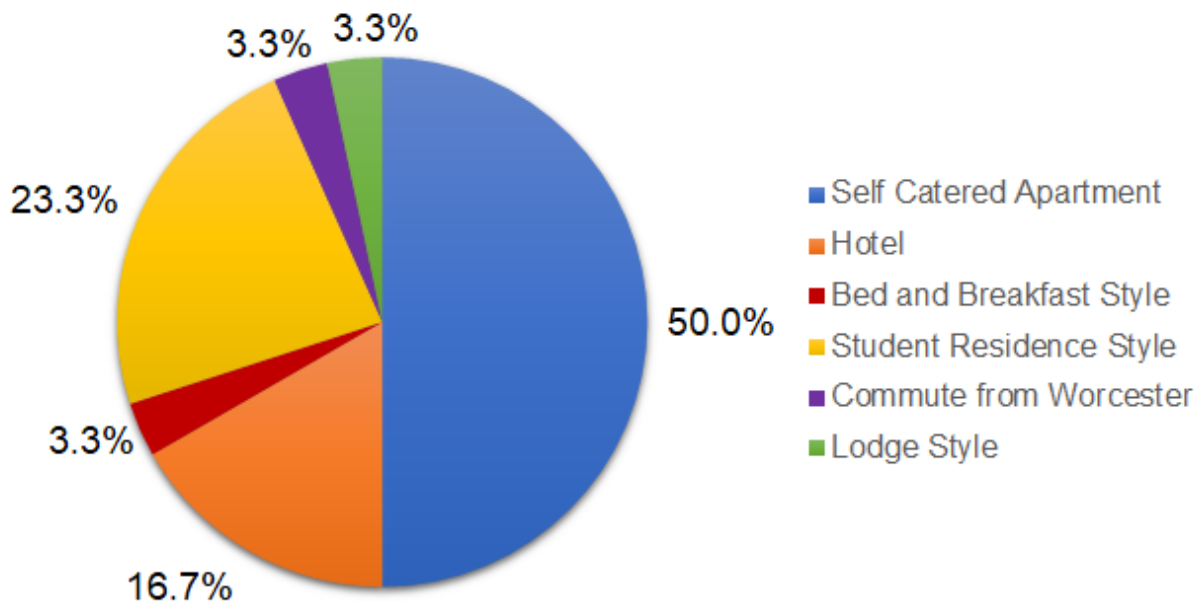


Figure 7: Distribution of housing type among WPI Project Centers (n = 30 centers)

After living in Akranes, we decided it would be better to house students closer to Reykjavík so they can better immerse themselves in their projects and in the cultural events going on in the city. We explored housing alternatives in the 7 different municipalities of Greater Reykjavík and explored the various points of interest each location offers to provide a more complete picture of what living in a particular municipality would be like for students. Each of these municipalities are easily accessible using the Strætó city bus, and they and are all within the same price zone. We looked at four municipalities in particular, namely Kópavogur, Hafnarfjörður, Garðabær, and Mosfellsbær. These four municipalities are the ideal size and distance from the city center. We did not consider Seltjarnarnes or Kjósarhreppur due to their small size and/or location.

Table 3: Municipalities of Greater Reykjavík area

Municipalities	Population
Reykjavík	122,460
Kópavogur	34,140
Hafnarfjörður	28,189
Garðabær	14,717
Mosfellsbær	9,481
Seltjarnarnes	4,415
Kjósarhreppur	217
Total	213,619

Kópavogur

Kópavogur is an easily-accessible and lively municipality. According to hiticeland.com, “If you are planning to drive the Reykjanes Peninsula it might be a good idea to find accommodation in Kópavogur”.

Kópavogur is the country's second largest municipality by population. The Culture Houses of Kópavogur, which include the Gerðarsafn and Museum of Natural History, are located in Kópavogur. There is also a library, a concert hall, and a music school within the Culture Houses, and they are all located within close proximity of each other. The area around the Culture Houses is very lively, offering bakeries, many shops and grocery stores, and a sports center. The City Hall is also located there. Moreover, there are many homes and apartment buildings near the Culture Houses. Figure 8 shows the various Culture Houses of Kópavogur.

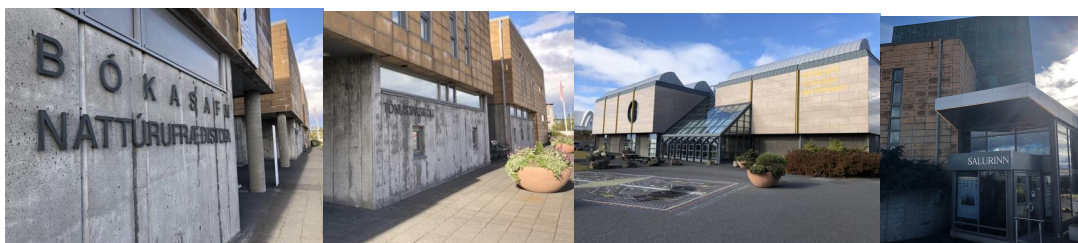


Figure 8: The Culture Houses of Kópavogur. From left to right: The Kópavogur Public Library, The Natural History Museum, The Kópavogur Art Museum, and The Salurinn Concert Hall

The neighborhoods of Kópavogur contain large residential areas, commercial areas, lots of industrial activity, and many hiking and biking trails. As we learned from our interview with the Project Manager of the Gerðarsafn, there is a large multicultural population in the municipality and there are many elderly Icelanders living there. There are also numerous hostels and rentable apartments in Kópavogur.

It is easy to travel to Reykjavík from Kópavogur. There are several city bus lines that lead right to the city center. Bus lines 1, 2, and 4 all leave from Hamraborg station into downtown Reykjavík. Moreover, Kópavogur is only an hour's walk from the Hallgrímskirkja.

Hafnarfjörður

Despite being the third-most populous municipality in Iceland, after Reykjavík and Kópavogur, locals describe Hafnarfjörður as feeling like a town as opposed to a suburb. Hafnarfjörður has established local industry and a variety of urban activities, with annual festival events. The town, focuses on ensuring a family-friendly environment.

It has several schools, including kindergartens, primary schools, a music school, and some colleges. It has a strong culture around fairies and Vikings and there are many stories about the area. Lots of people are involved in sports, as the town has swimming pools, hiking and cycling trails. There is also a theatre and music presence among the Hafnarfjörður Museum of Architecture and International Sculpture Park.

Housing in Hafnarfjörður may also prove to be feasible. There are many hostels and apartments that appear to be for rent. Overall, it seems like Hafnarfjörður is the most feasible location for students behind Kópavogur.

There is one bus route, route 1, that goes to Hafnarfjörður from the center of Reykjavík. It takes about 40 minutes. This bus route runs about every 15 minutes. Other bus routes go to Mjodd station as well. This bus runs about every 30 minutes.

Garðabær

Garðabær is the sixth largest town in Iceland. It is located immediately south of Kópavogur. Garðabær is one of the more affluent towns in Iceland. Through speaking with the director of the Design and Applied Art Museum, we found that the town is seeing increased growth. This includes people living in town as well as coming to town to see what it has to offer.

There are a few different city bus routes that run through Garðabær. It is about a 20 minute bus ride from the primary bus terminal in Garðabær to downtown Reykjavík via bus route 1. Additionally, bus route 24 runs about every 15 minutes to Mjodd bus terminal in Reykjavík. Figure 9 illustrates several views and the Design and Applied Art Museum in the municipality.



Figure 9: Garðabær. From left to right: Shops around the Museum of Design and Applied Art, the Museum of Design and Applied Art, Garðabær overlooking Kópavogur and Reykjavík

While walking through Garðabær we noticed that it is very suburb like. It is close enough distance to the city where you can still see Hallgrímskirkja. The town itself also has a number of amenities. There are two main plazas in Garðabær. The Museum of Design and Applied Art is located in one of these plazas. Around it, is the City Hall, boutiques, restaurants, a pharmacy, and a mall. The second location is more industrial. It contains an IKEA, Costco, Bónus, and more. Garðabær also has a number of hiking trails that are accessible with just a 30 minute walk from the City Hall.

Housing in Garðabær is limited. There do not seem to be any affordable guesthouses or hostels. Therefore, the only realistic option for housing students in Garðabær is to search out apartment housing. There are multiple apartment buildings in town however it is unclear the exact price range or if they offer short-term leases for furnished apartments. Overall, Garðabær

does not have as many amenities to offer as Kópavogur or Reykjavík. However if housing can be secured, this would be a great option for students.

Mosfellsbær

Mosfellsbær is a suburb to the East of Reykjavík towards the direction of Akranes. In Mosfellsbær, there are opportunities for outdoor activities. There has been a systematic development of outdoor recreational areas for residents and tourists over the last decade, including a golf course, walking trails and a nature reserve.

Mosfellsbær is easily accessible, and has direct access to downtown Reykjavík via city bus route 15, and several more buses that connect to stops around Reykjavík including the 7, 29 and 27 routes. Additionally, the 57 country bus runs through Mosfellsbær, allowing access to the Esja Hiking Center and Akranes. Figure 10 shows the view of the Mosfellsbær town center.



Figure 10: Mosfellsbær town center

The central area of the town has amenities that include shops, a gas station, a bakery, a restaurant and bar, several grocery stores, and a pharmacy. There is also a public swimming pool and many parks in the town. Outside of the central area, the town is almost exclusively residential. There are a handful of potential housing options here as well. These include hostels as well as apartments.

Mosfellsbær would be a suitable place for a student housing area because Reykjavík is easily accessible from it and it is a more residential area. If housing can be found, it will likely be close enough to a bus stop as the town is not very spread out.

3.3.5 Expense Information

Since we were the first group of students travelling to Iceland, we thought it would be important to track expenses to provide an estimate for student expenses. As a team, we recorded our personal expenses during the term and compiled them at the end of the term. The categories we used to classify expenses were:

- Groceries
- Tours and Recreation
- Bus
- Night Life
- Restaurants and Cafes
- Other (SIM Card, Souvenirs, etc.)

Figure 11 shows the distribution of the team's average expenses in these categories. The team spent the most money on bus travel, groceries, and tours and museums. Expenses were roughly equal in these three categories. The remainder of expenses went to dining and shopping. Even though the team did not frequent many restaurants, meals are quite costly and

add up quickly. Over a period of 7 weeks, we spent an average of \$1,390.92 per person. However, this is \$1,009.08 less than the \$2,400 students would spend on travel, tourism, and food as estimated in the Student Handbook for Iceland. Thus, it is certainly possible to save money while on IQP in Iceland.

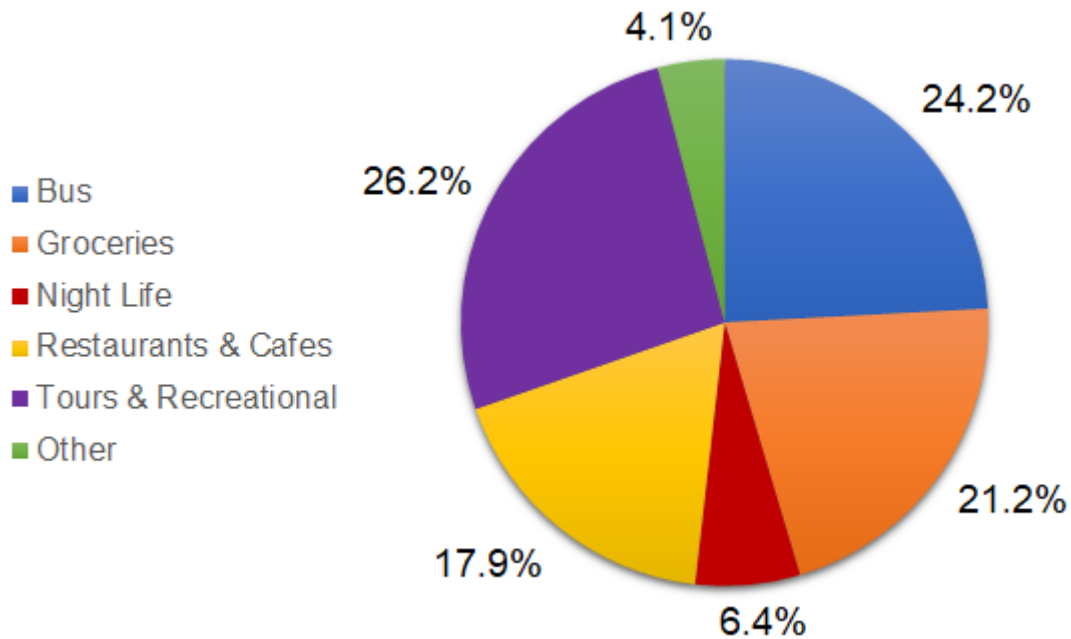


Figure 11: Our team’s expenses broken down into categories. The average total spending per person was \$1390.92.

3.3.6 Student Reflections

As a deliverable, we compiled a short video of student reflections. At the end of the project term, we asked the WPI students working alongside us to state their favorite and least favorite parts of their project experiences in Iceland. This open-ended reflection provided a brief, personal account of the challenges and excitement students experienced as the first WPI undergraduates completing more traditional IQP projects in Iceland, namely monitoring microplastic pollution on beaches and gathering climate change perceptions. Although students faced difficulties with transportation and project resources, they greatly enjoyed interacting with and learning from the Icelandic community through their project work and sightseeing around Iceland.

3.4 Objective 4: Produce materials to promote and support an Iceland Project Center to WPI students

We prepared a variety of deliverables for promoting the Iceland Project Center. These materials were meant to help Dr. Sakulich promote the Iceland Project Center to WPI students. Deliverables included various forms of media including videos, guidebook addendum, and a website.

One of the materials we produced is a short, promotional video to garner interest of future IQP students in completing IQP in Iceland and to also provide a real account of the student project experience at the Iceland Project Center. This minute long video highlighted various aspects of student life and project work in Iceland. It did not include personal reflections, instead giving brief snapshots of our exciting experiences as the first WPI students in Iceland. To collect feedback on our video content, we sent surveys to WPI students for feedback.

Another deliverable we created for students was an Iceland Project Center guidebook. We integrated our own first hand experiences and findings into a word document which will be appended to the existing Iceland IQP handbook for Dr. Sakulich to use in the future. These additions are meant to be “from students to students”, providing useful information that only previous IQP students might know.

We also produced a logo as part of our workshop with the Global Lab for the Iceland Project Center, as seen in Figure 12. The logo is a Vegvísir, meaning ‘wayfinder’ (Bergmann, 2018). The Vegvísir is an Icelandic magical stave, a symbol of protection and guidance, meant to aid the bearer in finding their way through rough weather.



Figure 12: Iceland Project Center Logo

We also designed a website to compile all the media deliverables we produced. Here we combined videos, photos, text, slide decks, etc., all interactively. We do not intend for the site to serve as the official project center site. However, the WPI community could use the site to learn about our project or use it as a model for producing interactive deliverables.

4. Recommendations

Recommendation 1: IQP Term

Another complexity in student's IQP participation is the number of international off-campus project opportunities available each term. Many international project opportunities are offered in B term, C term, and D term. There are fewer opportunities offered in A term and E term. New international project centers active during A or E term provide students with more flexibility in planning the timing of their projects.

Due to the vast number of tourists visiting Iceland during the summer, housing is expensive and in high demand. Thus, it would be difficult to coordinate affordable housing for 24 students during E term. During B and C term, daylight hours are limited and winter weather conditions are harsh, making project work and travel difficult. Therefore, we recommend opening a project center in Iceland during A Term.

Recommendation 2: Language Preparation

Based on potential student project complications, we recommend that students spend time learning the fundamentals of the Icelandic language during PQP or ID 2050 through the online language learning platform that WPI offers. This would benefit both sponsors and students for several potential projects, as well as student life while in Iceland. Moreover, we recommend finding a local liaison, who can be helpful in translating any surveys that students produce and to help students with their Icelandic as they work in Iceland.

Recommendation 3: Transport

We recommend that IGSD include the price for a monthly bus pass within the program costs. Without a bus pass, student expenses will increase a lot at the expense of a quality student experience. If housing will be in Akranes, the country bus pass costs \$221 (24,600 ISK). If housing is in Reykjavík, the city bus pass costs \$110 (12,300 ISK). Cards can be purchased ahead of time via the Strætó website and available for students to pick up when they arrive in country.

Recommendation 4: Group Tour Experience

A group tour would be an interesting way to introduce students to the natural wonders of Iceland. We recommend reserving a group Golden Circle Complete tour through Arctic Adventures. This tour was very informative and a great introduction to Icelandic history and geology. The tour provided a large variety of sights and activities for the day-long timeframe. We found that the tour was well worth the \$108 cost per person, as other tours offer fewer opportunities, for a higher cost.

Recommendation 5: Housing in Greater Reykjavík

Although Akranes was a suitable housing location, many potential sponsoring organizations and cultural activities were located in the Reykjavik area. Thus, we recommend finding student housing accommodations in the greater Reykjavik municipalities. IGSD should prioritize housing locations in the Kópavogur, Mosfellsbær, Hafnarfjörður, and Garðabær municipalities because they offer many resources for students and provide easy access to Reykjavik center.

5. Conclusion

As the first students completing projects in Iceland, we were responsible for exploring logistical resources available to us and for initiating partnerships with organizations in Iceland. Through our project experience, we were able to draw conclusions about the feasibility of establishing the Iceland Project Center. We scoped our feasibility study around the challenges and opportunities we encountered in Iceland. The three main logistical challenges we faced include housing location, transportation, and high living costs. Aside from logistics, our efforts primarily focused on building the sponsor network.

Our research and methods can help the development of future project centers. Through expert interviews with IGSD faculty, we compiled a set of criteria for a successful center. We also adapted the methods of previous project center feasibility studies to build our sponsor network and assess resources for WPI students in Iceland. Unlike previous feasibility studies, we created a presentation on the projects program for potential project partners. Our presentation can aid Dr. Sakulich in future communication with sponsoring organizations, and students can adapt it for future feasibility studies in new locations. Additionally, many previous feasibility studies relied on quantitative data to analyze logistics and project sponsors. However, we based our analysis around primarily qualitative data, providing personal accounts of student project experiences and reflecting on the potential project partners we spoke with. This grounds our findings and recommendations to the environment and culture in Iceland and portrays what a global project experience in Iceland could be like. We hope our efforts to initiate student IQPs in Iceland will prepare the Iceland Project Center for a successful future.

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Appendices

Appendix A: WPI Faculty Interview Questions

We are a group of IQP students exploring the possibility of establishing a new project center in Iceland. We are conducting expert interviews with WPI faculty involved in the Global Projects Program to develop an understanding of the requirements for a project center. These interviews are meant to illuminate the key characteristics of suitable sponsors and projects as well as the important logistic considerations to be made when establishing a new center. The data collected from these interviews will be used to provide recommendations to the IGSD regarding the feasibility of running a project center in Iceland.

This interview will be approximately 45-60 minutes. Your participation is completely voluntary and you may withdraw at any time. If you choose to participate, please let us know if it is permissible to record this interview and to take notes on it. Please let us know if we have permission to quote you or if you choose to remain anonymous.

1. What is your role at the project center? What draws you to this role?
2. What draws you to this project center?
3. What are the three most important components to a successful project center? (for example director leadership, sponsors, students working on projects)
4. What are some difficulties that a project center may face that we should consider?
5. What is most vital to a project center's sustainability?
6. What are key characteristics of a "good" sponsor? What should sponsors provide for projects?
7. What is most important in an IQP? What can make a project particularly good?

Dr. Dominic Golding

1. According to your faculty bio on the IGSD website, you have advised over 100 IQPs in locations such as the UK, the US, Australia, New Zealand, and Switzerland. What draws you to be an IQP advisor?
 - a. Do you have a site that you like the most? What seems to work well about this site?
2. What are the three most important components to a successful project center? (for example director leadership, sponsors, students working on projects)
 - a. What can go wrong? What should we be cautious about?
3. What is vital to project center sustainability?
4. How would you compare a project center to a non-profit organization if at all?
5. Are there specific metrics you'd recommend for measuring success?
6. How would you describe your experience advising the Switzerland IQP?
7. The Switzerland feasibility study completed in 2013 identified four key characteristics of a good sponsor: interest in working with students, availability of compelling, in-depth projects from year-to-year, and the ability to provide good working conditions for students. Are there any additional requirements you would consider to identify good sponsors?
8. In their final report, the Switzerland feasibility project team identified 6 potential sponsors but stated that "the nature of the projects was still unclear." Considering the center never seemed to set up 6 IQPs in a given year, how does this relate to the 'hiatus' that the project center was in until around 2016-2017?
9. According to the students' IQP report, a WPI business professor had strong (corporate) connections to Switzerland and seemed to have many contacts there. Would you say that the Switzerland project center ever had a "champion" in its initial establishment?

10. In 2017, four new IQPs were set up in the Switzerland site. Where do you see the Switzerland Project center going in the future?

Dr. Steve McCauley

1. How long have you been at the Melbourne Project Center? What attracts you about it?
2. How does your experience with Melbourne compare to other project sites you have advised at?
3. As Co-Director, what are you involved with in the MPC? How is this role similar or different from your experiences as an IQP advisor?
4. How should project centers provide for center advisors and Center Directors?
5. The MPC has been active since 1998 and has the highest number of student applications. What works well about the MPC?
 - a. How does it attract so many students?
6. What should we be cautious about? What could go wrong in a project center?
7. What is most important in an IQP? What can make a project particularly good?
8. How do you distinguish “good” sponsors?
9. How was MPC able to establish a strong sponsorship network?

Dr. Creighton Peet

1. After working professionally in the humanitarian research field, what draws you to be an IQP advisor?
2. As a site director what are your top priorities for how a site runs?
 - a. For example, is finding sponsors most important or student projects, etc?
3. Before we ask about your experience in Namibia, could you talk a little about the experience of working at the Hong Kong project site?
 - a. What worked well about this site?
 - b. What didn't work or could've been better?
4. The Namibia center is undoubtedly one of WPI's most popular opportunities for off campus IQPs. What do you think contributes to its success in terms of:
 - a. Location?
 - b. Sponsors?
 - c. Director / Advisors?
5. What are the three most important components to a successful project center? (for example director leadership, sponsors, students working on projects)
6. What are some examples of things that can go wrong with a project center / IQP that we should consider?
7. What is most vital to a project center's sustainability?
8. If you were in charge of setting up a new project center, what would be your top priorities?
9. How would you relate a project center to a startup / grassroots organization?

Dr. Richard Vaz

1. As Director of WPI's Center for Project-Based Learning, what drew you to project-based learning? Why is WPI's global projects program so successful?
2. How is WPI's Projects Program different from typical study abroad programs?
 - a. In your experience, how have you seen potential sponsors react to the program?

3. In your paper “Long Term Impacts of Off-Campus Project Work on Student Learning and Development”, you talk about the benefits of off-campus project work. How could future project centers improve this even further?
4. In your paper “Understanding Impacts: Community Engagement Programs and Their Implications for Communities, Campuses and Societies”, you introduce a model of potential community engagement impacts. How can project centers work towards providing beneficial impacts for all community actors?
5. In developing a project center, what is most important to understand what kinds of impacts projects may have?
6. As Co-Director of the Bangkok Project Center:
 - a. What works well about this site? What doesn't? Why?
 - b. What are your top priorities for how a site runs?
 - c. What do you think contributes to the success of the Bangkok Project Center?
 - d. How do you see the future of the site developing? What is your goal?
7. What are the three most important components to a successful project center in your opinion? (for example director leadership, sponsors, students working on projects)
8. What is most important in an IQP project? What can make a project particularly good?
9. How do you distinguish “good” sponsors?
10. How do you measure how successful a project center is?
11. How difficult is it to get good faculty advisors and sponsors?
12. Certain sites like Venice and Melbourne have been around for decades. What is most vital to a project center's sustainability?
13. If you were in charge of setting up a new project center, what would be your top priorities?
14. Any statistical methods to use for data analysis (logistics, cost-benefit,... business stats)?

Appendix B: IQP Language Survey Questions

We are a team of third-year students from Worcester Polytechnic Institute in Massachusetts. We are completing a project on behalf of our university's Global Projects Program (GPP). We are exploring the potential for a new project center in Iceland. Through this survey, we would like to know if you think language classes are effective.

This survey will be approximately 5 minutes. Your participation is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous.

Denmark

1. **It was useful to spend a term learning Danish**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
2. **Learning some of the language, even though I could not become fluent, was worthwhile**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
3. **I found that having some handle on pronunciation of places and streets was worth it**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
4. **I wish I had learned more Danish before the IQP term**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
5. **I practiced Danish over the summer before IQP (if applicable)**
 - a. Yes or No
6. **If you used an online language program, please indicate it here**
 - a. (open response)
7. **If there is anything else you'd like to add about your experience learning or using the Danish language, please add it here**
 - a. (open response)

Costa Rica

1. **As a beginner Spanish student, it was useful to learn Spanish for two weeks at the beginning of the term**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
2. **Learning some of the language, even though I could not become fluent, was worthwhile**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
3. **I found that having some handle on pronunciation of places and streets was worth it**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
4. **I wish I had learned more Spanish before the IQP term**
 - a. 1 - 5 (Strongly Disagree- Strongly Agree)
5. **If you used an online language program, please indicate it here**
 - a. (open response)
6. **If there is anything else you'd like to add about your experience learning or using the Danish language, please add it here**
 - a. (open response)

Appendix C: Sponsor Interview Questions and Outreach Template

We are a team of third-year students from Worcester Polytechnic Institute in Massachusetts, a technological university with a project-based curriculum. We are completing a project on behalf of our university's Global Projects Program (GPP). The GPP manages project centers at which WPI students work closely with a WPI faculty advisor and a sponsor from a

non-profit, non-governmental, or governmental agency, such as _____ [The one you are part of]. Students work full-time on open-ended projects coordinated with the sponsoring organization and the university.

We are exploring the potential for a new project center in Iceland, whose efforts in environmental conservation, alternative energy solutions, and cultural preservation offer exciting opportunities for project partnerships with WPI students. Through this interview, we hope to identify potential project sponsors by learning about your organization and relating the missions of WPI projects to your organization.

This interview will be approximately 45-60 minutes. Your participation is completely voluntary and you may withdraw at any time. If you choose to participate, please let us know if it is permissible to audio-record this interview as well as take notes. Please let us know if we have permission to quote you or if you choose to remain anonymous.

If interested, a copy of our results can be provided at the conclusion of the study.

1. What is your role in the organization?
2. Are you interested in sponsoring WPI IQPs?
3. Are you interested in sponsoring WPI MQPs?
4. Is the organization willing to provide workspace for students to complete projects? Is the organization willing to provide time to meet with students as they work on their projects?
5. Is your organization willing to mentor WPI students?

Email Template

Good Day,

I am a part of a small group of university students from Worcester Polytechnic Institute (WPI), an engineering university in the United States. We are currently in Iceland completing a project for our university for the next 7 weeks. As a part of our project, we are searching for organizations in Iceland that might be interested in work with WPI students on future research projects.

WPI has a project-based curriculum where four-person teams of students spend seven weeks working with an organization on a project of the organization's choosing. The students will spend seven weeks learning about the specified topic before coming to Iceland to work full time with the sponsor. The team is self-directed and sponsors generally meet with the team for a couple hours per week. The university has engaged this model since 1968 and has project centers across the globe. The program has been recognized by the Princeton Review and Popular Mechanics. Sponsors find that the team provides them with very valuable information and deliverables.

We are interested in your organization's commitment to [*Field Here*], and would love to introduce ourselves and learn about the work you do. We will also give more details about the program and show past student work. If possible, could we interview someone from the organization to discuss this opportunity?

Thank you,

[Name Here]

Simi: [*Phone Number*]

For more information about WPI, please visit:

<https://www.wpi.edu/academics/departments/interdisciplinary-global-studies>

Appendix D: Potential Sponsor Spreadsheet Screenshot

Potential Sponsors ☆ ■

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

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	A	B	C	D	E	F	G	H
1	Name	Category	Description	Contact	Contacted?	Response	Other Notes	Potential Projects
2	Promote Iceland (Ministry of Foreign Affairs)	Government, Tourism	Runs all of the information websites for Visit Iceland	Andri Marteinsson, andri@istandsstofa.is	<input checked="" type="checkbox"/>	Need to make powerpoint answering questions we think they might have. Powerpoint made and sent. Still no response.	Donal's Connection: sveinw@islandsstofa.is	
3	Jónína Ólafsdóttir Kárdal	University	Contact from University of Iceland, spoke with Dr. Dehner about housing	joninaka@hi.is	<input checked="" type="checkbox"/>	No update yet	contacted	gave us additional contacts; will come back to speak with lady in International Office. She said that all external partnering must be handled through the international office
4	Reykjavik Geothermal	Energy	Geothermal Management and Science company that works on projects across the world	rg@rg.is	<input checked="" type="checkbox"/>	Doesn't work in Iceland - no follow up		
5	Orkuveita Reykjavíkur (Reykjavik Energy)	Energy	Public utility company that provides electricity and geothermal heat for 67% of the Icelandic population, run by the city of Reykjavik	Used website contact form at: https://www.or.is/contact-us	<input checked="" type="checkbox"/>	no response		
6	Farmers Association of Iceland	Environmental	They are advocates of farmers and work on prosperity and prosperity in agriculture	bondl@bondi.is Tel: 00-354-563-0300 site: http://www.bondi.is/english	<input checked="" type="checkbox"/>	no response		
7	Icelandic Centre for Research	Education	The Icelandic Centre for Research (RANNIS) supports research, innovation, education and culture in Iceland	rannis@rannis.is	<input checked="" type="checkbox"/>	no response		
8	Iceland Ocean Cluster	Education, Business	Organization that connects entrepreneurs, businesses and knowledge of the marine industries through research, business support and more. They publish a lot of academic/research papers	sjavarklasinn@sjavarklasinn.is information@statice.is, https://www.statice.is/about-statist-ics-iceland/	<input checked="" type="checkbox"/>	no response		
9	Statistics Iceland	Government, Education	National Statistic Institute, collecting and processing data on the economy and society.	haraldur@knarr.is, https://www.knarmaritime.com/co	<input checked="" type="checkbox"/>	no response		
10			Icelandic Maritime Consortium, develops technology based on Icelandic Fishing Sector, including building vessels -		<input checked="" type="checkbox"/>			

+ ■ Reykjavik - Akranes - Akureyri - Other - Data -

Appendix E: Students in Iceland Survey

We are a team of third-year students from Worcester Polytechnic Institute in Massachusetts. We are completing a project on behalf of our university's Global Projects Program (GPP). We are exploring the potential for a new project center in Iceland. Through this survey, we hope to capture relevant data regarding the student experience in Iceland. The survey will measure areas including student life and project work.

This survey will be approximately 10-15 minutes. Your participation is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous.

The following questions are designed to gauge **student life** experience in Iceland:

1. In general, transportation has been _____
a. (1-5, 1 = poor, 3 = adequate, 5 = exceptional)
2. In general, the site housing has been _____
a. (1-5, 1 = poor, 3 = adequate, 5 = exceptional)
3. How do you feel about the food in Iceland?
a. (1-5, 1 = strongly dislike, 3 = neither like nor dislike, 5 = really like)
4. How would you rate the safety of the project site location (Akranes)?
a. (1-5, 1 = not safe at all, 3 = moderately safe, 5 = very safe)
5. There are fun things to do that are not too far away from the housing.
a. (1-5, 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree)
6. I have found the location (Akranes) to be _____
a. (short answer)
7. Living in Iceland has proved to be _____
a. (1-5, 1 = not expensive, 3 = moderately expensive, 5 = very expensive)
8. How do you like to spend your free time?
a. (open response)
9. What has been your favorite activity so far?
a. (open response)
10. Is there anything you dislike about your experience in Iceland
a. (open response)

The following questions are designed to gauge **project** experience in Iceland:

1. My sponsor(s) have been communicating well
a. (1-5, 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree)
2. My project has progressed smoothly
a. (1-5, 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree)
3. I am happy I chose Iceland to complete my IQP
a. (1-5, 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree)
4. What has been your favorite part of your project work so far?
a. (open response)
5. What has been your least favorite part of your project work so far?
a. (open response)
6. Is there anything you'd change about the project site or your project?
a. (open response)

Appendix F: Promotional Video Survey

We are a team of third-year students from Worcester Polytechnic Institute in Massachusetts. We are completing a project on behalf of our university's Global Projects Program (GPP). We are exploring the potential for a new project center in Iceland. Through this survey, we hope to capture relevant data regarding the student experience in Iceland. The survey will capture feedback on a promotional video.

This survey will be approximately 5 minutes. Your participation is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous.

1. After watching the video, I would be interested in applying to Iceland for IQP (regardless of whether you have completed IQP or not)
 - a. 1 - 5 (Strongly Agree - Strongly Disagree)
2. I thought the video did a good job capturing all aspects of an IQP
 - a. 1 - 5 (Strongly Agree - Strongly Disagree)
3. What did you like about the video?
 - a. (Open response)
4. What didn't you like about the video?
 - a. (Open response)
5. If there was something else you would want to see in the video, please add it here
 - a. (Open response)

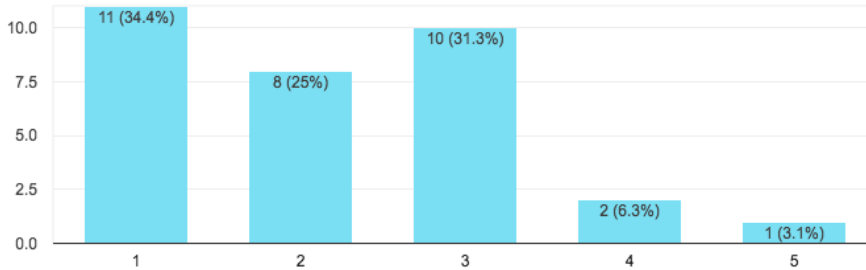
Appendix G: Language Survey Responses

In the survey, 1 represented 'strongly disagree' with the statement, while 5 represented 'strongly agree' with the statement.

Denmark

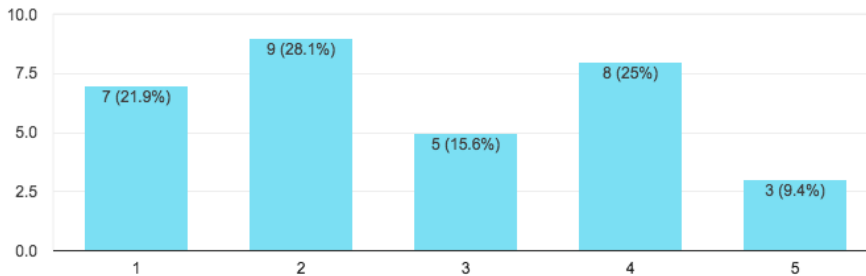
It was useful to spend a term learning Danish

32 responses



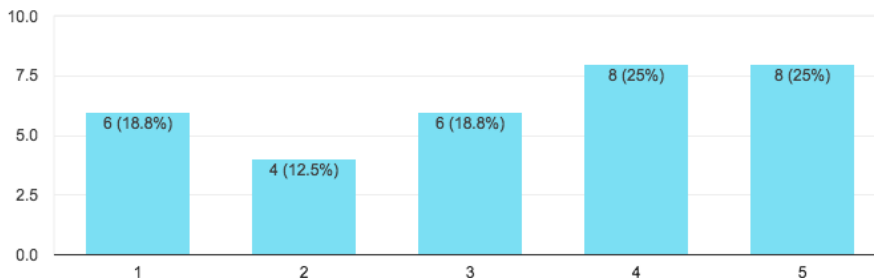
Learning some of the language, even though I could not become fluent, was worthwhile

32 responses



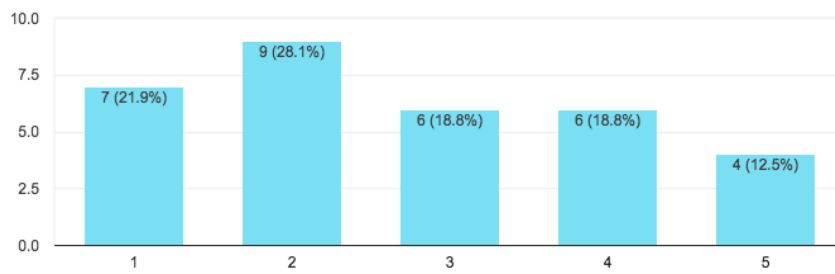
I found that having some handle on pronunciation of places and streets was worth it

32 responses



I wish I had learned more Danish before the IQP term

32 responses

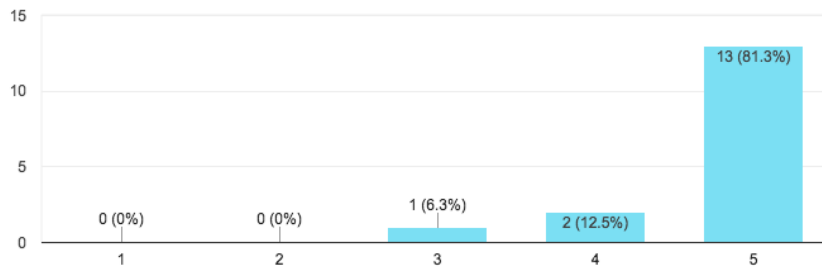


Costa Rica

In the survey, 1 represented 'strongly disagree' with the statement, while 5 represented 'strongly agree' with the statement.

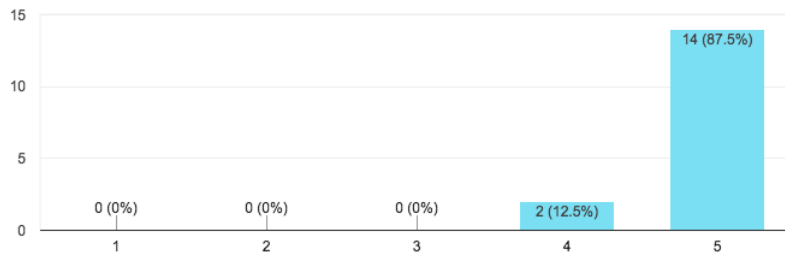
As a beginner Spanish student, it was useful to learn Spanish for two weeks at the beginning of the term

16 responses



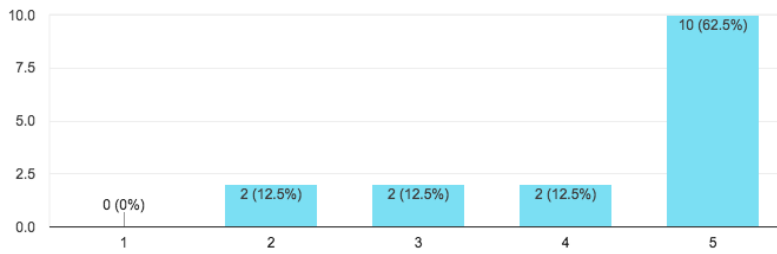
Learning some of the language, even though I could not become fluent, was worthwhile

16 responses



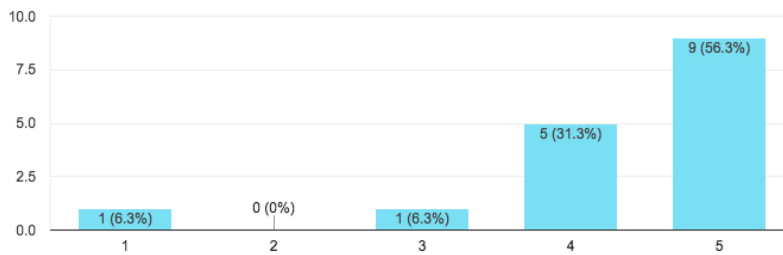
I found that having some handle on pronunciation of places and streets was worth it

16 responses



I wish I had learned more Spanish before the IQP term

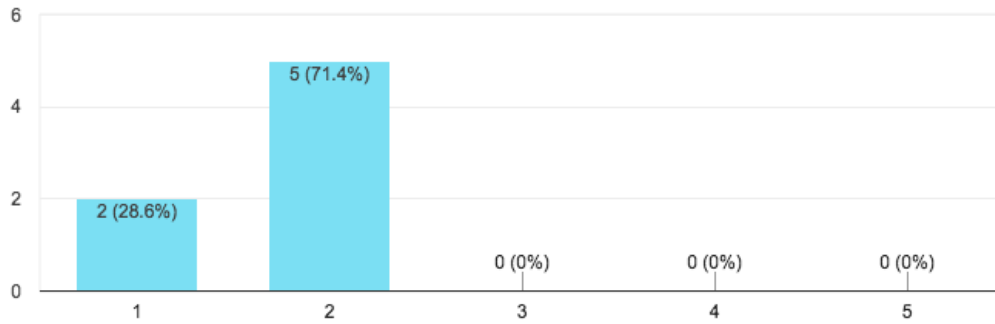
16 responses



Appendix H: Student Life Survey Responses

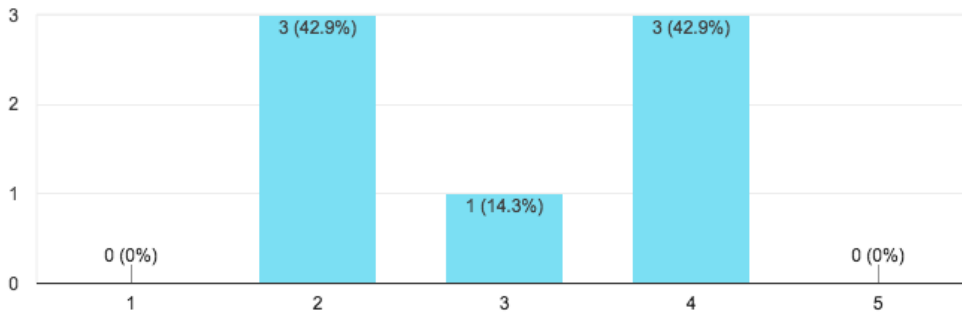
In general, transportation has been

7 responses



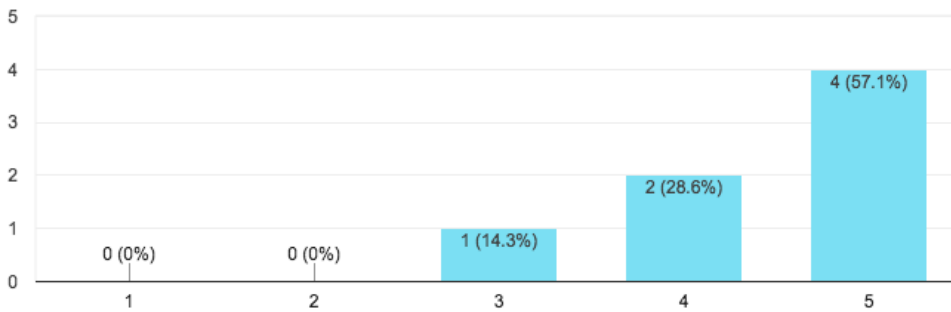
In general, the site housing has been

7 responses



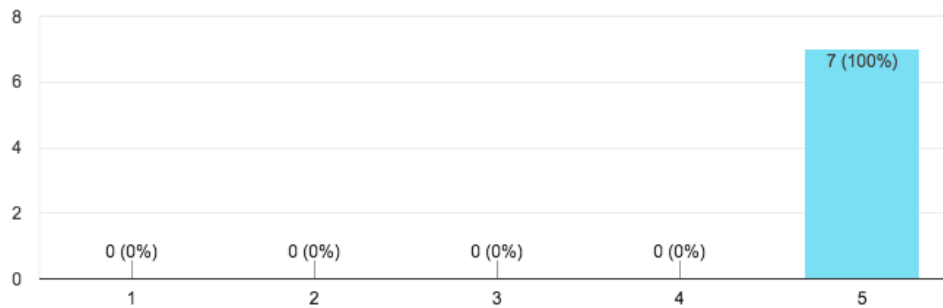
How do you feel about the food in Iceland?

7 responses



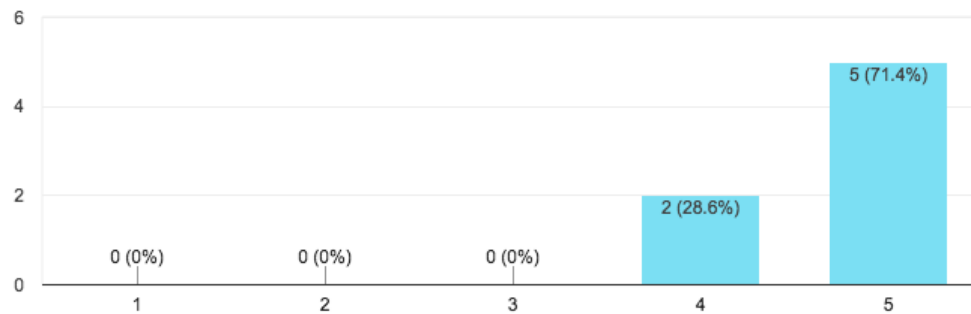
How would you rate the safety of the project site location (Akranes)?

7 responses



Living in Iceland has proved to be

7 responses



There are fun things to do that are not too far away from the housing.

7 responses

