WPI | Worcester Community Project Center

Twenty Years of the Worcester Community Project Center

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Abstract

To celebrate the twentieth anniversary of the Worcester Community Project Center (WCPC), we reflected and documented the history and impact of the WCPC on the Worcester community, and developed recommendations for future growth of the project center. Our team conducted interviews and surveys with both WCPC alumni and past sponsors to collect testimonials. The collected testimonials were integrated into the interactive webpage we created, displaying history and impact of the WCPC. In order to develop recommendations for future growth of the WCPC, our team learned what aspects of the on-campus IQPs attract students. Based on collected responses from on-campus IQP students, we defined strengths and weaknesses of the WCPC and considered those for developing the recommendations.

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- Our advisors, Dr. Purvi Shah and Dr. Sarah Strauss

- All our interviewees for sharing their experiences to help with our research

- Every student who completed our surveys

Executive Summary

Based on the WPI Plan, all undergraduate students must complete two projects: The Interactive Qualifying Project (IQP) and the Major Qualifying Project (MQP). To complete an IQP, WPI offers undergraduate students an opportunity of working on-campus or at an off-campus project center. In terms of doing an off-campus IQP, WPI provides options for traveling either domestically or internationally to over fifty project centers worldwide (Worcester Polytechnic Institute [WPI], n.d.a). One of these project center sites is the Worcester Community Project Center.

The Worcester Community Project Center was initially established in the year 2000 with the goal to host IQPs that focus on "environmental justice, environmental policy, and social justice" (Worcester community Project Center [WCPC], n.d.a) and other community-based projects. With twenty years of history, the WCPC has been fully responsive to the needs of the greater Worcester community. Many of the completed IQPs offered practical and feasible recommendations for the future, providing a long-lasting impact. According to the WCPC website, the project site has been nominated for and received numerous awards. One of the most prominent achievement is the Community Engagement Award, which they received in 2007, 2008, 2010, 2011, and 2013 (WCPC, n.d.c). Earning this award indicates that the project displayed the most outstanding contributions to the community.

Our project goals were to reflect on and document the history and impact of the Worcester Community Project Center (WCPC) and compare the reasons why students choose on-campus IQPs over the WCPC projects. We wanted to compare on-campus IQPs to the WCPC to help promote the future growth of the center and make recommendations that allow more students to utilize the WCPC. To satisfy these objectives, our team evaluated the history and importance of

the projects conducted through the WCPC. From our analysis, we were able to provide potential solutions for making the WCPC an available resource to more WPI students. Our deliverables included creating an interactive webpage for the WCPC's website and providing suggestions for how to increase awareness and enrollment at the WCPC.

To successfully reflect on the history and impact of the WCPC, our team distributed surveys to about 300 of the WCPC's alumni. We received sixty-three survey responses and were then able to conduct five interviews. From the survey data, we gathered information that we later used to compare the WCPC's projects to on-campus IQPs. Through the testimonials shared by WCPC alumni, our team learned how the WCPC projects had impacted them individually. We determined that the WCPC IQPs positively impacted each interviewee as well as many survey participants. Each interviewee specifically noted that taking ID2050 helped them prepare for their project term by teaching about team dynamics, research, and writing skills. Furthermore, when analyzing survey data, we noticed that building connections and experiencing culture in and around Worcester were memories many participants shared.

To observe the impact of the WCPC at a different level, our team conducted interviews with four past WCPC sponsors. We talked to the Worcester Department of Health and Human Services, the Worcester YMCA, the Seven Hills Foundation, and Habitat for Humanity. These interviews allowed us to get a clear idea about how many WCPC projects benefit the Worcester community and the reach of the projects' impact. For example, one of the IQP teams designed an assistive technology exposition that allowed for the elderly and people with disabilities to access technology that increases the independence of the user. We concluded that each sponsor had several projects that left a lasting impact on the Worcester community with various forms of

project deliverables. The collected testimonials were integrated into the interactive webpage to inform others about the impact and history of the WCPC.

In order to develop meaningful recommendations for the future growth of the WCPC, we sent out surveys to ninety-one on-campus IQP students. We interviewed five of these students in order to consider the similarities and differences between on-campus and the WCPC projects. We initially suspected that a reason some students select on-campus IQPs over the WCPC is due to exposure. We thought that students might be unaware of the WCPC as an option, or they do not realize that the WCPC offers some of the same benefits of an on-campus experience. Simultaneously, the WCPC provides the desirable characteristics of being an off-campus location. We wanted to compare the elements found in on-campus projects and WCPC projects to help shape our recommendations to aid in the growth of the Worcester Community Project Center.

Once WPI students decide to do their IQPs at the WCPC, they can have the same experiences as the students at other off-campus project centers. This project center's design allows students to have an off-campus experience for the IQP while staying in the Worcester area. The students at the WCPC can stay on-campus or in the Worcester area for completing their IQPs. As one of the off-campus project centers, WCPC projects run for one academic term and all students must take the preparatory course offered by the WPI, called ID2050. ID2050 teaches students skills necessary for their IQP including, but not limited to, teamwork, research, writing, and presentation skills.

Instead of completing an IQP at a Project Center, WPI students can decide to complete an on-campus IQP. In comparison to off-campus projects, on-campus IQPs proceed for three consecutive terms during an academic year. According to the WPI catalog, completing an IQP is equivalent to taking three academic courses. Doing an IQP for three academic terms means that

the IQP credit is divided into one-third so that students can take two other academic courses while doing their IQPs. Due to this reason, many students trying to avoid course scheduling conflict choose on-campus IQPs instead of off-campus IQPs. In addition, on-campus IQPs do not require students to take ID2050.

While the WCPC IQPs have differences from the on-campus projects, they also share some similarities. Since these sites are local, they allow students to maintain their extra-curriculars and other activities that require them to be physically present, within reason. The structure lets students who are athletes, hold leadership roles in clubs, have work, or other commitments complete their IQP requirement while attending their other activities. Furthermore, both sites are zero cost sites, so it does not cost students extra money to complete their IQPs. Alternatively, at many of the other off-campus project centers, students must pay fees in addition to their tuition costs for their IQP term.

We needed to compare some aspects of on-campus projects and WCPC projects to help shape our recommendations to aid in the future growth of the Worcester Community Project Center. Our team sent out surveys to ninety-one students to on-campus IQP students. We received fifty responses and conducted five interviews with these on-campus IQP students. From their responses, our team defined level of awareness of the WCPC, most popular resources to students for obtaining IQP-related information, desired improvements of their IQP experiences, and leading factors making them choose on-campus IQPs over the WCPC projects.

Based on collected data from the on-campus IQP student survey, our team found that the level of awareness of the WCPC could be improved; thirty-four percent of on-campus IQP students were not aware of the WCPC when they chose their IQP location. To create suggestions for the WCPC to advertise more efficiently, our team defined the most popular resources students use to

obtain IQP-related information. These include the WPI eProjects Website, older peers, and advisors. We also investigated the leading factors that cause students to choose on-campus IQPs over the WCPC projects. Our team found that most of the on-campus IQP students are looking for multi-term projects to avoid course scheduling conflict.

In conclusion, our interviews and surveys with past sponsors and alumni of the WCPC show the WCPC's impact on different levels, ranging from individuals to the Worcester Community. We integrated these testimonials as content for the interactive webpage showing the history and impact of the WCPC. In terms of preserving the future of the WCPC, our team developed the following recommendations:

1. WCPC needs to increase its level of awareness among WPI students. To advertise, we recommend putting more content on the WPI eProjects Website.
2. The WCPC loses potential students to on-campus IQPs because on-campus IQPs offer the following important feature: projects conducted over multiple terms. If the WCPC were able to integrate this factor into the center, we believe that it will increase enrollment.

Authorship

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1.0 Introduction

Our project goals were to reflect on the history and impact of the WCPC, document its impact, and compare reasons of why students choose IQPs on-campus instead of at the WCPC. To satisfy these objectives, our team sought to understand the history and importance of the projects conducted through the WCPC. Additionally, we analyzed reasons as to why students chose to complete on-campus IQPs instead of the WCPC IQPs. From our analysis, we were able to provide potential solutions for making the WCPC an available resource to more WPI students. Our deliverables included creating an interactive webpage for the WCPC's website and providing suggestions for how to increase awareness and enrollment at the WCPC.

Our team partnered with the Worcester Community Project Center (WCPC) to celebrate its twentieth anniversary as well as the fiftieth anniversary of the WPI Plan. Based on the WPI Plan, all undergraduate students must complete two projects: The Interactive Qualifying Project (IQP) and the Major Qualifying Project (MQP). As one of the distinctive aspects of the WPI Plan, the IQP provides "experience of working in interdisciplinary teams to solve a problem or need that lies at the intersection of science and society" (WPI, n.d.b). To complete an IQP, WPI offers undergraduate students an opportunity of working on-campus or at an off-campus project center. In terms of doing an off-campus IQP, WPI provides options for traveling either domestically or internationally to over forty project centers worldwide (Creaghan et al., 2015, p.1). One of these project center sites is the Worcester Community Project Center.

The Worcester Community Project Center was initially established in the year 2000 with the goal to host IQPs that focus on "environmental justice, environmental policy, and social justice" (Worcester Community Project Center [WCPC], n.d.a) and other community-based projects. This project center's design allows students to have an off-campus experience for the IQP

while making a difference locally. Projects completed at this site maintain the schedule of the other off-campus IQPs offered, meaning the projects run over one term of the academic year. Through the first ten years, the WCPC only operated for one term each academic year and, on average, conducted two projects annually. For the second decade, the WCPC grew to be fully operational for the entirety of an academic year, overseeing almost twenty projects each year. Those projects were diverse in themes and had more than forty different sponsoring organizations.

In recent years student enrollment in global project centers increased as WPI started to offer $5000 scholarships to students towards the cost of participating in global projects (WPI, n.d.c). Since one of the most significant factors for students choosing the WCPC for IQP has been the fact it is a zero-cost site, this is important to note. As the monetary barrier reduced for international project sites, many students choose to complete their IQPs at off-campus global project centers. Over the years, the WCPC has been fully responsive to the needs of the greater Worcester Community. Even though the WCPC is a great local option, students may sometimes overlook the project opportunities that the Worcester Community Project Center provides. The WCPC wanted to grow as a center and be utilized by more students, potentially by those who partake in on-campus IQPs. Our team aimed to provide recommendations to improve the WCPC's visibility so that future students are aware of this high-impact, local project site. Many of the IQPs completed at the WCPC offer practical and feasible recommendations for the future, providing a long-lasting impact

In addition to off-campus sites, some students chose to complete their IQPs on-campus. For these projects, the students work on WPI's campus with individual faculty advisors but do not share a space with the WCPC. Some major differences between on-campus and WCPC IQPs include the application process, ID2050, and the term duration. Each year, WPI hosts on-campus

and off-campus project fairs to introduce project opportunities to the students. The off-campus project fair, or the Global Fair, recurs in the fall, and the on-campus project fair runs in the spring. Students who are interested in off-campus project opportunities apply during the fall semester and receive their site placements before the end of winter break. The on-campus fair is held in the spring after rising juniors receive their off-campus placements. This way, students who either are not accepted at their desired off-campus site or change their minds about going off-campus can plan around these changes. Both fairs occur before course selection for the following year to allow students to find an option that will work with their schedules.

As one of the off-campus project centers, the WCPC is present at the Global Fair in the fall. Once the off-campus students are assigned their IQP locations, those assigned to the WCPC start their projects differently compared to the students who chose on-campus projects. The students at the WCPC are required to take one preparatory course called ID2050, a required course for all off-campus IQP students (Correra et al., 2005). The course covers research design, social science research methods, and data analysis. Students make presentations, write an organized project proposal, and plan communication models for reporting their project findings.

Taking ID2050 allows students to begin their project term with their proposal and plan ready since off-campus projects run over one academic term. However, the on-campus projects proceed for three terms. On-campus IQP students generally do not take ID2050 before starting the project (Meldrim et al., 2011). While the off-campus students start their project term with the proposals ready from ID2050, the students doing on-campus IQPs start to write their proposals when their project term starts. Having these different starting points is related to the difference in project duration between on-campus and the WCPC projects.

While the WCPC IQPs have differences from the on-campus projects, they also share some similarities. Since these sites are local, they allow students to maintain their extra-curriculars and other activities that require them to be physically present. The structure lets students that are athletes, hold leadership roles in clubs, have work, or other commitments are still able to partake in said commitments. Furthermore, both sites are zero cost sites, so it does not cost students any extra money to complete their IQPs. Alternatively, at many of the other off-campus project centers, students must pay fees in addition to their tuition costs for their IQP term.

It was important for our IQP team to consider the similarities as well as the differences between on-campus and WCPC IQPs. We initially suspected that a reason why students select on-campus IQPs over the WCPC is due to exposure. We thought that students might be unaware of the WCPC as an option, or they do not realize that the WCPC offers some of the same benefits of an on-campus experience. Simultaneously, the WCPC provides certain desirable characteristics of being an off-campus location. We wanted to compare certain elements about on-campus projects and WCPC projects to help shape our recommendations to aid in the growth of the Worcester Community Project Center.

Throughout the past twenty years, the WCPC has been fully responsive to the needs of the greater Worcester community. Many of the completed IQPs offered practical and feasible recommendations for the future, providing a long-lasting impact. The WCPC aims to grow as a center to continue to help new organizations in Worcester, but also to be utilized by more students, especially students seeking to complete their IQPs locally in Worcester. In this project, our team investigated the history and impact of impact of the WCPC, document is impact, and created interactive webpage displaying impact of the WCPC on the Worcester community. Also, our team

provided recommendations to improve the WCPC's visibility so that future students are more aware of this impactful and local project site.

2.0 Background

Throughout the past twenty years, the Worcester Community Project Center has and continues to support the community and provide a learning experience for many WPI undergraduates. The WCPC has supported projects ranging from technology and education to community and rehabilitation. The site has accommodated a great variety of projects; it has no defined boundaries for the projects they could and would undertake. The WCPC aims to conduct projects that had an impact that extended beyond the Worcester community. WCPC students were able to engage with the city of Worcester and "the truly rich culture that exists outside of Highland Street" (WCPC, n.d.b). They were also allowed the opportunity to observe and apply science and technology to social and environmental obstacles (WCPC, n.d.b).

Although the WCPC has a shorter history compared to other WPI project centers around the globe, the impact is highly notable. Over the years, the WCPC has been nominated for and received numerous awards. One of the most prominent achievements is the Community Engagement Award, which they received in 2007, 2008, 2010, 2011, and 2013 (WCPC, n.d.c). Earning this award indicates that the project displayed the most outstanding contributions to the community (WPI, n.d.d). The WCPC's goals are to create a better tomorrow for the Worcester community and to provide a learning outcome for students that chose to do their IQPs in a local off-campus location. For the site to have been awarded such a community-driven accolade numerous times demonstrated their importance and impact within Worcester.

Furthermore, in the year 2019, the WCPC placed within the top five projects for receiving the President's IQP Award. This award takes into consideration all IQPs from the previous academic year. Receiving the President's IQP Award is yet another demonstration of the elite work produced by the WCPC, and the impact students had on the community. Giving students the

resources to apply themselves to set a positive example for their community is an essential and eye-opening experience for many prior WCPC participants. In order to provide students with a high-impact project experience, the WCPC carefully chooses their sponsors and assigns students relevant projects intending to leave a lasting influence on the community.

One of the major project goals is to reflect the history and impact of the WCPC. To achieve this objective, we needed to understand the history of the project center and the importance of the conducted projects through the WCPC. Our team researched previous studies regarding how to investigate the history and to assess the impacts of an organization so that we could apply similar methods to our project and the WCPC. Our research introduced the existing impact assessment model and methods of investigating the history of organizations. We were able to apply our knowledge on impact models to understand the history and significance of the WCPC and its projects. To understand the background of the WCPC, we conducted interviews with past sponsors and alumni of the WCPC. The purpose of these interviews was to learn about their experiences. We later used this information for our reflection on the history and impact of the project center. Through interviews, our team successfully gathered the necessary information for the reflection of the site, which we integrated into our interactive webpage, one of our project deliverables.

To successfully document the impact of the WCPC, our team decided to create an interactive webpage. The webpage allows users to communicate and interact with it by watching videos, posting comments, or listening to audio clips. The purposes of creating an interactive webpage were not only making documenting past experiences but also informing people about the achievements and personal impact of the WCPC. To ensure the creating interactive webpage is suitable for satisfying the purposes, our group conducted research. From the research, we found that an interactive webpage allows audience members to be more engaged with given information

by helping them to control the pace for receiving information. According to the research, we determined that the usage of an interactive webpage will be beneficial to the website visitors. Thus, our team integrated shared experiences and testimonials from the past sponsors and alumni who completed the WCPC IQPs.

Another project deliverable was providing suggestions for how to increase awareness and enrollment at the WCPC. To provide meaningful suggestions, we needed to understand the differences between on-campus and off-campus IQPs and reasons why WPI students choose to do on-campus IQPs instead of at the WCPC. While both types of IQPs are completed without leaving the Worcester area, they provide very different experiences. For understanding of the differences between on-campus and off-campus IQPs, our team conducted research and had interviews with on-campus IQPs advisors. The research gave us the knowledge of basic differences between the two types of IQPs, such as required preparatory courses and term distribution. The interviews with on-campus IQPs advisors provided us practical differences between two types of the IQPs such as flexibility for team formation which might be the one of attractive aspects to students for doing an on-campus IQPs. Based on gathered information, we were able to fully understand the differences between on-campus and off-campus IQPs.

In order to increase student enrollment at the WCPC, we needed to understand how WPI students who do on-campus IQPs perceive the WCPC. Our team conducted surveys and interviews with three different groups of on-campus IQP students. Our target groups were past students who have completed their IQP, students currently conducting their IQP, and future on-campus IQP students for the academic year 2020-2021. From these surveys and interviews, we were able to see whether on-campus IQPs participants were aware of the WCPC for making their decisions. We were also able to analyze if some of the appealing aspects of the on-campus IQPs could be

implemented to the WCPC to increase the enrollment. From the surveys and interviews, our group was able to provide potential solutions and suggestions for making the WCPC an available resource to more WPI students.

2.1 Assessing Impact

To accurately reflect on the role of the WCPC in the Worcester Community, it was critical to understand two main subjects. We needed to have detailed knowledge about the history of the project center and the experiences of students and sponsors involved in the WCPC. To begin the process of recognizing the Worcester Community Project Center's influence in the community, we needed to have a standard approach for defining impact. Throughout our research, we obtained various methods for assessing the impact of an organization. These include impact models, social impact assessment, and more.

The impact model we used as a guide was designed as a "starting point for more intentional program design and assessment" (Jiusto & Vaz, 2016, p.136). Figure 1, below, demonstrates that impact has a trickle-up effect stemming from an individual and potentially working its way up to make a systematic impact. Also, the model lists possible results of an impact at each level and defines the members of each category who might be impacted. Personal experiences and reflection on the project from the participants are defined as individual scale impacts. Development of resources and processes of an organization, such as communities, non-profits, or government, were suggested as organizational scale impacts. For a community scale impact, the authors listed improvements for the targeting group of people. Finally, changed policies and implementation by other communities were identified as the most significant impact, system-level impacts.

Figure 1

A model for potential community engagement impacts

Community Actors (Academic Actors)	Potential impacts Communities ←-------------------------------→ Academics
Political leadership structures Social movements Media and opinion leaders	• Policies and policy discourses changed/strengthened • Strategies diffusing to other communities • Institutional & financial resources flowing toward positive outcomes • Proliferation of collaborative engagement models
Key groups: children, entrepreneurs, elderly, etc. Built environment (The university community)	• Social programs operating successfully • Social cohesion and decision-making enhanced • Community sustainability enhanced • Built environment improved • Health and well-being enhanced
Community, Non-profit, Government, Business, Cultural, Educational Orgs (Academic dep'ts, units…)	• Strategic planning and project development capacity • Ability to collaborate and foster participatory processes • Assets & Resources: ideas, data, reports, money, programs, facilities • Networks, reputation and influence
Co-researchers, community leaders, local professionals (Students as individuals & in teams, faculty advisors)	• Cross-cultural learning & empathy • Confidence and sense of efficacy & contribution • Project development strategic thinking and competencies • Teamwork insights and skills • Communication skills • Professional development & asset accumulation Personal growth in realm deemed important by individual

The arrow to the left of the table is labeled, from top to bottom: System-Level Impacts, Community Impacts, Organizational Impacts, Individual Impacts.
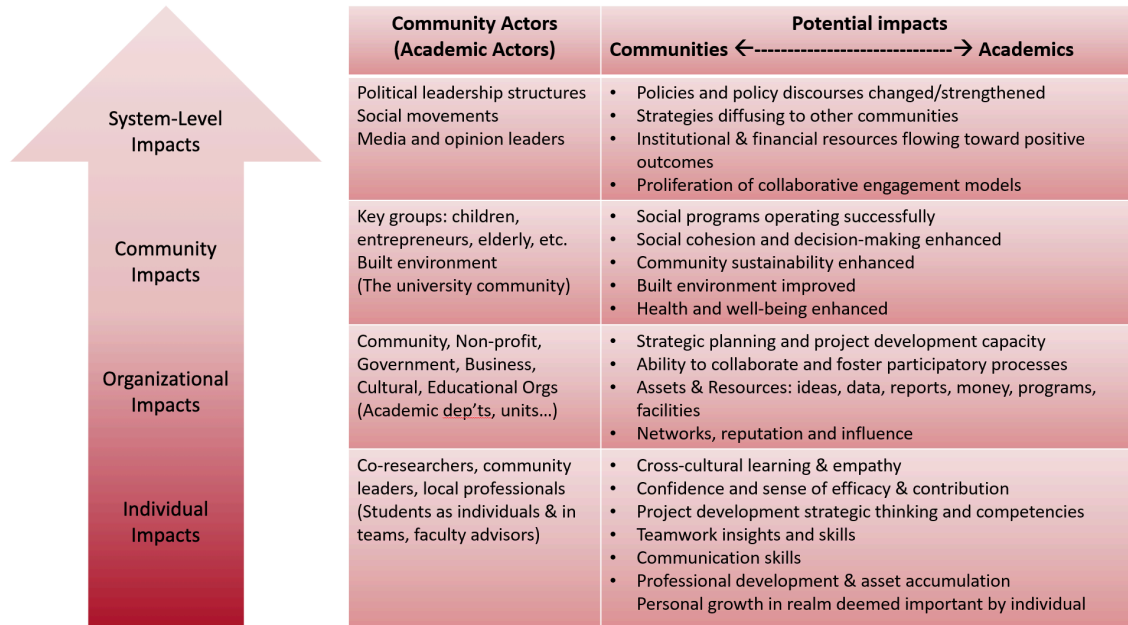
Figure 1 demonstrates the community members and potential impacts of each level of impact.

Source: Article *Understanding Impacts: Community Engagement Programs and Their Implications for Communities, Campuses and Societies* written by Jiusto, S. & Vaz, R.

Figure 1 intended to guide program makers towards creating impact at different levels while having a reference of what these impacts may look like at each level (Jiusto & Vaz, 2016). The purpose of the model is for making better programs, having a meaningful and both immediate and long-lasting impacts. We planned to use the listed "potential impacts," which showed what each level of impact could look like in practice when analyzing the projects completed through the

WCPC. By having this reference as a baseline, we were able to successfully reflect on the impact of the WCPC to the Worcester Community.

According to the Worcester Community Project Center Website, most previous projects partnered with sponsoring organizations that served the Worcester Community. For different sponsors, targeted groups were slightly different. For example, a project sponsored by Seven Hills Foundation focused on children and adults with disabilities in the Worcester community. Alternatively, a project with the Worcester Art Museum mainly targeted museum visitors. Though targeted audiences are different, both projects aimed to create social impacts; as a result of the projects, there are effects on the community or people.

In addition to the idea of assessing the impact on different levels with impact models, the general process for assessing the impact of an organization such as a library or a museum introduces the social impact assessment (Becker, 2011). Social Impact Assessment is "the process of identifying the future consequences of a current or proposed action which are related to individuals, organizations, and social macro-systems" (Becker, 2011, p. 312). The process consists of two phases: the initial phase and the main phase. During the initial phase, assessors needed to analyze the structure and design of a project. After the initial phase, assessors investigated the impact after the actual implementation of a project. According to Becker (2011), there are three different types of social impact assessment: micro-, meso-, and macro-level. At the micro-level, the assessment is an analysis of impacts on several individuals in communities. For meso-level assessment, one would analyze impacts on organizations and communities. The last type, macro-level assessment, analyze impacts on the social macro-system, including national and international legal systems.

Furthermore, the three different dimensions introduced for assessing the impact of an organization (Baxter et al., 2002), expanded the scope of our impact analysis. In this 2002 study, Baxter et al. evaluate the impact of museums, archives, and libraries with three different approaches: social, learning, and economical. For each of these approaches, the authors focused on a few factors to determine the impact's significance. They investigated the duration of the impact and if it was intentional or unintentional. In terms of social impact, they paid attention to personal development, social cohesion, and community empowerment caused by museums, archives, and libraries. For learning impact, the authors evaluated a person's level of motivation and enjoyment through involvement with either museums or libraries. The last level of approach for evaluation was the economic impact. For this level, the authors examined the results of the existence of the libraries, archives, and museums that could be statistically analyzed, such as increased spending by tourists.

For a successful social impact assessment, it was significant to determine a level for the analysis concisely (Becker, 2011). The incorporation of different levels for impact assessment ranging from individual to international, impact models, and different dimensions for initiative approaches, was used for developing the most suitable impact assessment model for our project.

2.2 Investigating the History

When looking into the history of the WCPC, we wanted to reference examples of how organizations outside of the WPI community celebrated big milestones. We particularly wanted to assess the methods through which other groups honor their achievements. Based on our research, many companies utilized their anniversaries as opportunities for rebranding and advertising purposes. Anniversary celebrations have been used to look back on the founding of organizations

and emphasize their accomplishments throughout the years (Callahan et al., 2016). Our group focused on the reflection on achievements rather than rebranding. Establishments that have used these tactics range from local food banks (Knight, 2012) to the U.S. National Academy of Sciences (Cicerone, 2013).

One article on the fiftieth anniversary of Moore County Chamber of Commerce explains the motivation and benefits of creating a rebranding campaign. Jana Volitis, a representative of the organization, explained that the celebratory energy was something the organization wanted to bring into their future. She emphasized that the campaign, in addition to a relocation of the organization, resulted in the ability "to step out into the community with a series of press releases, articles in the paper, year-end celebrations and even a talk radio show. It has gained traction and continues to prove that it was necessary, as we have added new members to the organization through the website alone" (Boysen, 2018, p. 4). While the goal of the WCPC was not a rebranding, this source indicated anniversary celebrations are an opportunity to inform about and expand the organization's impact in the community.

Another article explained the importance of the seventy-fifth, or diamond, anniversaries specifically and provided themed ideas for getting the community excited about the company's anniversary. The article's suggestions vary, but they all have the intention to simultaneously honor those who have made an impact on the organization and engage other members of the community. For instance, the article proposed to ask younger people how old seventy-five is, and the idea behind it is to "Get responses from young patients, students or program participants. The answers will likely make amusing radio or television spots and print ads and may evolve into a memorable campaign to increase awareness of your institution in an entertaining way" (Nonprofit Communications Report, 2018, p. 5). Our team planned to take this sort of approach by getting

both the Worcester community and the WPI community involved in our research. Through this technique, we gained the knowledge and data we intended to collect, but also spread awareness of the WCPC.

For insight on how to gather information for assessing the history and impact of our site, we referenced prior IQPs that had similar goals for other project centers. Other sites that had done projects with intentions related to ours included Melbourne, Washington D.C., Switzerland, London, and more. We found that the sites with the most comparable objectives to ours included the London Project Center, abbreviated as LPC, and the Washington D.C. Project Center, abbreviated as WPC. *Assessing the Impacts of the London Project Center* stated the objective was to determine how completing an IQP in London had affected their lives both personally and professionally (Briggs et al. 2016). The primary purposes of the *History and Impact of the Washington, D.C. Project Center* was "to help the WPI Interdisciplinary and Global Studies Division (IGSD) define and analyze the impact of projects completed by WPI students at the Washington D.C. Project Center (WPC)" (Avakian et al. 2017, p. 21).

We found that the London and Washington project center teams analyzed the impacts of their centers by reaching out to both alumni and sponsors. Each team gathered information via alumni surveys and interviews with the sponsors and WPI advisors. This thought process makes sense because an advisor or sponsor would have overseen more projects. They would have been a better resource for long term impact due to them having much experience. In terms of alumni surveys, the teams primarily used the method of online surveys for data collection. The team then conducted interviews with the sponsors and WPI faculties who had previous knowledge about the center and projects.

The London project center team selected prospective interviewees by first researching the history of the project center including past projects, sponsors, and faculty advisors. Based on the history, the team selected the organizations that had sponsored more than one project as the interviewees. Throughout the research process, the team also found WPI faculty members who had experience at the London project center. For developing an interview protocol, the team primarily focused on encouraging interviewees to share experiences at the London project center with details. The protocol for the sponsors were designed to gain an understanding of whether the sponsors felt the projects had a significant impact on the organization itself or the community. Furthermore, the students were asked for suggestions on possible improvements for the center. The interviews tailored to the faculty advisors were designed for sharing experiences at the London project center, working with students and sponsors, and how they watched students grow throughout the projects.

To collect information from the alumni that worked on the projects at each site, the teams sent out online surveys. This method was efficient in obtaining data on the individual impact of projects, especially since the alumni would have only had worked on their own IQP. The surveys sent to alumni included questions about demographics, personal impact, perceived impact of their project, deliverables, recommendations, and media from their IQP. As previously stated, the alumni were the best source to evaluate individual impact, but not necessarily for organizational or systemic impact. Asking the alumni in the survey for media, such as pictures or stories from their projects, was a great method to obtain data for the project center website or brochure, as it was less likely that the advisors or sponsors would have pictures or very personalized testimonies for a singular project.

Another goal for our project was to develop methods to preserve the future of the WCPC as a vital resource for the Worcester and WPI community. We expected to provide potential recommendations for making the WCPC more attractive and spread awareness to prospective students. In *Assessing the Impacts of the London Project Center*, the team produced two deliverables: a timeline with completed projects in each year, and a brochure for the global IQP fair. The Washington D.C. team's deliverables included an impact model, a database specific to the WPC, and a website highlighting the history of the WPC. Our team took into consideration certain elements from each deliverable of these similar past projects when creating our deliverables and recommendations. For instance, we referenced which aspects of the London project center's brochure and the WPC's website were visually appealing and professional when creating our interactive webpage.

2.3 WCPC vs. On-campus

In 1970, the WPI plan was voted into effect, which introduced the Interactive Qualifying Project (IQP) and the Major Qualifying Project (MQP) to WPI students for the first time. The WPI plan is a bold strategy with hopes to turn a student into an expert of their field through project-based learning (IQP and MQP) and real-world practice. The idea of implementing the IQP is to allow students to use their knowledge in real world scenarios to help solve problems using technology and a variety of resources (WPI, n.d.a.). The project requires individuals to work with students from other majors and put their unique skills together to solve a societal problem. In order to do so, a team needs to learn how to work together efficiently, manage the needs of their sponsors, and develop a realistic solution.

For both IQPs and MQPs, the WPI offers two types of project centers: off-campus and on-campus. In terms of off-campus project centers, the students can travel internationally, domestically, or stay in Worcester. Both international and domestic off-campus project centers give participating students an opportunity to work with local sponsoring organizations while staying in the area where the project center is at. Likewise, the Worcester Community Project Center also provides the same opportunity, working with local sponsoring organizations while staying in Worcester. On the other hand, on-campus project centers allow students to complete the projects with faculty advisors while staying on-campus.

Worcester Community Project Center is one of the off-campus project centers while allowing students to stay in Worcester. As both international and domestic off-campus project centers have, the WCPC has same features. For example, the WCPC IQPs require two preparatory courses: ID2050 and Pre-Qualifying Project (PQP). From the ID2050 class, the students learn skills such as identifying credible sources, improving writing skills, and adapting to work with a team. During taking these two courses, the students complete writing their proposals prior to start the projects in following term. As one of the off-campus projects, the WCPC projects are held for one seven-week term, with a sponsor.

In contrast, on-campus project centers have different characteristics. Since the projects are held on-campus, most of the projects do not have sponsors. Usually the WPI faculty advisors conduct the projects by themselves while teaching other academic courses. Advising and teaching simultaneously is possible because the duration of on-campus projects is different. While off-campus projects are designated to be completed in one seven-week term, on-campus projects are distributed into three terms. The term distribution enables not only the faculty advisors to have more flexibility on their schedules, but also the students who are doing on-campus projects. For

the faculty advisors, they can conduct the projects**,** while teaching other academic courses. By doing projects for three consecutive terms, the students can take two other academic courses at the same time. Additionally, while the students at off-campus project centers are required to take the two preparatory classes, the students doing on-campus projects do not take those two classes. Since they omit both ID2050 and PQP, the students doing on-campus projects need to start writing their proposals at first.

2.4 Interactive Webpage

In order to convey the impact and history of the WCPC in a user-friendly manner the group explored the route of interactive media. "Interactive media involve a fusion of sounds, images, and texts that enable users to interact with this integrated environment" (Akarun & Ozcan, 2002, p.161). In our group's case we used this form of digital history to expand the outreach of the WCPC and educate students on the possibilities provided by the WCPC.

Having the format of an interactive webpage allows the audience to become more immersed in the information they are receiving (Cairncross & Mannion, 2010). This is because within interactive media, more specifically an interactive webpage, the user controls the pace at which the information would be received (Cairncross & Mannion, 2010). This gives the user time to absorb the information in their own time (Cairncross & Mannion, 2010).

In order to adhere to this notion, the group used Adobe Muse a "type of website builder software that enables you to design your website rather than develop it" (Wallace, n.d). A standard website would rely on a coder to write the website in a language called HTML or JavaScript. However, the members of the group were not experienced in such coding. Therefore, programs

such as Adobe Muse became very useful. By utilizing its user-friendly interface, we could use its tools to create and format text boxes. Its capabilities also allowed us to create galleries and slideshows, as well as use scrolling effects to give the user a more in depth feel for the webpage. Adobe Muse was not limited by the knowledge of coding, allowing the group to focus on the task of making the WCPC webpage visually appealing and useful to students looking to fulfill their IQP requirement.

Furthermore, there were guidelines and restrictions in place for websites that run through WPI's WordPress; this included the WCPC's website. Without the experience of coding this task would have proved very daunting, but Adobe Muse's friendly interface allowed the group to follow the guidelines almost effortlessly. While adhering to the guidelines the group looked at what an interactive webpage for the WCPC would entail.

3.0 Methodology

Our end goals for this project were to reflect on the impact that the Worcester Community Project Center has had on the community and to recommend plans to preserve the future of the site. In order to achieve these goals, the team needed to have a thorough understanding of the history of the WCPC as well as obtain the perspectives of different members of the community. Through our research, we could better interpret how the WCPC, and the work it has produced, are perceived by various Worcester community members. We wanted to assess the impact to the to the city of Worcester, past sponsors, and to the WPI community. We also aimed to identify reasons why some students do not utilize the WCPC for IQP completion and instead choose on-campus IQPs so that we could construct meaningful recommendations and plans regarding the growth of the site in the future.

To understand the history of the WCPC, we wanted to educate ourselves and others on the experiences of previous student participants and sponsors at the WCPC. With the knowledge gained from personal accounts shared with us, we expected to be able to analyze the impact of the WCPC on the Worcester community and sponsoring organizations. To learn about prior experiences, we conducted interviews with past WCPC sponsors and students who completed their IQPs at the WCPC. From the interviews, we learned how their experiences with the WCPC had an impact either on an individual level or to the organization. Our findings from the interviews were then integrated into the WCPC's interactive webpage to show the impacts of the WCPC.

To create plans to preserve the future of the WCPC, we needed to know whether the students were aware of the WCPC when they made their IQP decisions. Furthermore, if they were aware, we wanted to know why they choose an on-campus IQP over the WCPC. For getting perspectives from the students, we created a survey for different student groups. We sent out the

survey to three different student groups: students who completed an on-campus IQPs, students who are currently partaking in an on campus IQP, and students who anticipate completing an on campus IQP next academic year. We expected to see what factors led the students to do on-campus IQPs, and how the WCPC can implement those factors to be more appealing to WPI students. From the survey results, we then developed recommendations for the WCPC to implement in the future.

3.1 Data Collection

In order to interpret new viewpoints and expand our knowledge of the work that we aimed to complete, we had to understand and gather relevant data. This data aided us in forming our final recommendations to the WCPC, creating the overall summary of our findings, and was used for our interactive webpage. With the information we collected, we were able to demonstrate the WCPC's successful history and community impact. To complete this task, we had to understand two important subjects. First, we recognized how to identify what data will be useful in our webpage and organized it in a way that it may be useful in our final composition. Secondly, we had to maintain a clear understanding of what our project's goals are and how we could mold our data to satisfy the needs of our deliverables. In our research, we discovered the difference between qualitative and quantitative data. Quantitative data refers to data that is strictly used to produce exact numbers. For example, if we asked a yes or no question, we would have a definitive number of responses for each option. Since the number of "yes" replies and "no" replies are countable, the data cannot be argued to be a different value. On the other hand, qualitative data can be collected to represent a "deeper" meaning and may be gathered by asking an open-ended question (Australian Bureau of Statistics, 2013). The difference between the two styles of data come from

how we present our questions (Polkinghorne, 2005). In our case a quantitative data question would come in the form of "did the WCPC impact your organization?" With no follow up, this question is simply a yes or no reply; we would only have data pertaining to a certain amount of yes and no answers. By tweaking this question to become "how has the WCPC impacted your organization?" we now would have a wider array of responses to give thought to. Generally, asking qualitative questions gave us more interesting and marketable material to work with for our report and our interactive webpage.

3.2 Interviews and Surveys

Sponsor interviews as well as student interviews were an essential element of our project, not only to gather testimonials for creating an interactive webpage, but also to gain a clear understanding from primary sources. Based on prior studies that had been conducted regarding the importance of interviews, we found that interviews are good assessments of subject expertise, skills, and the person's capabilities (Dudak et al., 2017). This supported that conducting interviews would allow our team to gather a decent quantity of data in the short amount of time we had with our interviewees. Interviews are a primary way through which companies gather intensive knowledge about prospective employees. Similarly, we used interviews to obtain specialized insight from our target interviewee groups (Dudak et al., 2017).

More relevant information can be shared openly with more of freedom of speech and less concern about confidentiality (Kolouchová & Konecný, 2013). We interviewed previous project sponsors to gain their knowledge of past projects. The sponsors are a primary source as they choose whether to implement the findings of their students in addition to deciding how long their findings will impact their organization. They gave a realistic and accurate depiction of the impact of the

IQPs due to the fact they are left with the deliverables. In contrast, the students or alumni that worked on these projects may not be considered experts because once their project is complete, they are no longer interacting with it. The alumni and students could not accurately comment on the impact the project currently has on the organization that sponsored them. While we did interview students and alumni, we did not interview them as experts and instead formed a different set of questions.

Our team gained the perspectives of the past WCPC sponsors. Due to the limited time frame of IQPs, the student teams and faculty advisors leave the project sites and are no longer involved once they finish their projects while the sponsors remain with the recommendations or work provided by the teams. Therefore, we expected that the past sponsors would be able to share their experiences with the WPI student teams and talk about the impacts of the WCPC projects they sponsored on their organizations. Learning their experiences with the WPI IQP teams were considered significantly since they are continuously exposed to the projects even after the term is completed. We used shared experiences through interviews not only for the assessment of the impacts of the WCPC has played for each sponsor, but also for the interactive webpage contents.

When preparing for interviews, our team needed to design questions that considered the concepts of qualitative versus quantitative data. Our team gathered information from three main groups of people: faculty advisors, WCPC project sponsors, and students. In order to deliver a high-quality final proposal and interactive webpage, we refined our interviews to give each group of interviewees a unique set of questions tailored to their relation to the WCPC. This provided us with the most advantageous information for our desired deliverables. When designing these questions, we needed to assess which audience we were targeting. On the other hand, we wanted to acquire information based on the reason why students would choose an on-campus IQP over

the WCPC. In contrast, when reaching out to sponsors, we wanted to gather personalized stories about the sponsors' experiences with the WCPC and how the center has impacted their organization.

Each year, students are given opportunities to explore whether they would like to complete their IQP on-campus or off-campus. In each fall semester, the Global Fair is held to showcase off-campus project sites. Most centers have a table where previous, or future, advisors sit with students who also completed their project at the site to answer questions for prospective students. Similarly, in the spring semester another fair with on campus projects is presented after the off-campus application closes. We asked questions along the lines of where students completed their IQP, did they attend an IQP fair, what factors contributed towards their site, and more. Additionally, we sent out the survey to the students and get their opinions towards all types of IQPs: both on- and off-campus and staying in local communities. We focused on the group of students who visited at least one IQP fair before coming to their final decision so we can determine if the fair itself helped influence their choice. Our group sought to gain a better understanding of if students are accurately and well-informed about their options for project centers. We analyzed the results of the survey and used them for developing recommendations to improve the marketing of the Worcester Community Project Center.

In order to create the most effective survey we could, we used a survey design workbook written by Paula Quinn to aid us in the formulation of survey questions. The workbook introduced a step by step method that includes identifying the target surveying audience, identifying who will read the results, and then developing questions for each specific audience. One of the main points portrayed by Quinn was the significance of the length of the survey. Surveys need to be as short as possible to not lose respondents (Quinn, 2018, p.13). Taking these tips into account, we

designed our surveys to have fewer than ten questions for each of our target audiences: the WCPC alumni (see Appendix A), current students conducting on-campus IQPs (see Appendix B) or WCPC projects, and prospective on-campus IQP students.

The goal for the alumni survey was to obtain testimonials describing positive experiences during their time at the WCPC to add to the interactive webpage. We also wanted to collect photos and videos for the interactive webpage so provided the WCPC alumni the option to upload media. In order to obtain detailed information, we asked open-ended questions allowing respondents to express their experiences and recommendations using their own words. Borgers et al. (2004) claim that asking questions in neutral manner increases the reliability of the response. In contrast, the surveys intended for students who completed an on-campus IQP consisted of carefully worded multiple-choice questions so that they are not leading or bias, but also to make data collection simpler. Both the workbook and research provided helped us to create efficient surveys allowing us to gather the data necessary to provide our final recommendations.

3.3 Informed Consent

Since our team relied heavily on interviews and surveys to gather data, we needed to ensure participants were properly informed of our research. Our surveys for both on-campus IQP students and WCPC students allowed for the anonymity of participants so we did not need to create a consent form for the survey takers; completion of the survey indicated consent. However, interviewing subjects did not allow for the same anonymity if desired. While our team could keep the interviewee's information private, based on their answers to our interview questions (see Appendix C, D, E, F) they could potentially be identified. To satisfy Institutional Review Board

(IRB) mandates and ensure that our participants had the opportunity to make an informed decision, we crafted an informed consent form (see Appendix G).

Since we utilized quotes from our interviews in our deliverables, we needed to ensure that our interviewees were aware of the potential of quotes being used and receive permission. For faculty interviewees, there was the possibility that others in the WPI community would be able to identify them, thus making it difficult to have their identities be anonymous. Faculty advisors still had the choice to remain anonymous, but they recognized the difficulties. For instance, by using the faculty member's name, we were able to have credibility behind the quoted statements. For our sponsor and student interviews, the chances of their identities being revealed were significantly less than the faculty advisors. If they chose to remain unknown, we would be able to quote them with the format of stating they were either a student or a sponsor in our deliverables.

Additionally, since we were directly quoting participants, if they consented, we gave them a choice to opt in to an audio or visual recording. The team wanted to show brief visual clips of WCPC alumni and sponsors' testimonials to make the videos more personal and put a face to the quotes. For those who did not want to be video recorded, we wanted to have the audio clip as an option so we could showcase other media from the WCPC. We also had the audio copy of the interview to reference to represent the quotes verbatim within our deliverables.

Finally, so that our participants would feel accurately represented, we sent them the quotes from their interviews we intended to use. When we reached out to them, we indicated which deliverable we included their quote. We did this to give participants a chance to look over and approve the quote. Also, we wanted to update the interviewee on the progress we made, especially with the quotes that went on the webpage.

3.4 Creating an Interactive Webpage

To achieve the goal of documenting the history and impact of the WCPC, our team created an interactive webpage as an addition to the WCPC's website. For obtaining content for the webpage, we interviewed and surveyed past WCPC sponsors and alumni. In the survey for prior participants of the WCPC, we asked if they could provide photos and videos from their projects. We wanted to gather visual media in addition to the testimonials from sponsors and alumni through interviews. Our team decided that this was an efficient way to incorporate and celebrate the history of the center while simultaneously creating something new to make the WCPC more marketable in their future endeavors.

When creating our interactive webpage, we took inspiration from the types of interactive articles published by *The New York Times*. The articles consist of short video clips, animated images, and high-quality photography instead of full of texts to convey desired information (Branch, 2012). We kept in mind elements such as user experience, integration of photos and videos, color pallets, and more. Our team and sponsor wanted to have the same immersive qualities found in *The New York Times'* webpages, but we faced limitations. The existing Worcester Community Project Website was created through WordPress, WPI's website publishing center, and had certain restrictions in place to keep the new pages added to the site cohesive with the existing format. Due to the team having limited collective knowledge of coding and these preset constraints, we had to consider other ways we could create an engaging user experience while adhering to the guidelines.

The team concluded that the best way to construct our interactive webpage would be using Adobe Muse due to team members possessing proficient knowledge of this existing software. This software allowed us to captivate the user in similar ways to The New York Times article *Snow*

Fall: The Avalanche at Tunnel Creek without succumbing to the limitation set by WordPress's current format or our lack of HTML coding expertise. With the tools that Adobe Muse provides, it made it simple to design the webpage. Some tools that were at our disposal were the guidelines tool, preview mode, and insert widget tool. Using the guidelines tool, it was very easy to ensure that the layout of the webpage was evenly spaced and coherent for the user to be able to follow the flow of the page. The widget tool allowed us to create menu items such as a direct link to the WCPC home page, while at the same time have a unique design to create said menu button. These tools allowed us to first design the webpage in Adobe Muse's interface and then preview the webpage, in real-time, and make sure it functioned as anticipated.

Our team found that past studies that support interactive webpages are a "way for significantly enhancing instructional processes and thus favorably influencing effective learning" (Giraldo, 2016, p.7). According to Giraldo (2016), the integration of technology is helpful in education, primarily because being able to add media such as photos and videos positively impacts learning. The interactive platform enhances user learning through more captivating content. Similarly, we want to provide this engaging material so that prospective students can have a better idea of the essence of projects completed through the WCPC and for generally increasing awareness.

4.0 Findings

From following our methodology for data collection, which included surveys and interviews, our team successfully gained information necessary to achieve the project goals: the reflection of the history and impact of the WCPC and recommendations to preserve the future of the WCPC. Our team created two separate surveys: one for the WCPC alumni (see Appendix A), and the other for on-campus IQP students (see Appendix B). In both surveys, we provided the option for participants to sign up for interviews with the team. Having interviews with WCPC alumni and on-campus IQP students allowed us to understand their experiences deeply.

Table 1

Sample description table for surveys and interviews

Target Group	Surveys Sent	Surveys Received	Interviews Conducted
WCPC Alumni	About 300	63	5
On-campus students	91	50	5
Faculty Advisors	No survey		2
Sponsors			4

From the WCPC alumni survey, we obtained stories about personal experiences alumni had with the project center, which we utilized for assessing the impact of the WCPC. Using Figure 1 and the writings of Jiusto and Vaz for reference, our team assessed the impact of the WCPC at four different levels: individual, organizational, community, and system-level (Jiusto & Vaz, 2016). In Figure 1, examples for potential impacts at each level are listed. To assess the impact of the WCPC at these four different levels, our team evaluated every response from the interviewees and our surveys to see how their responses about impact of completed projects corresponds to listed potential impacts in Figure 1. Our survey responses primarily gave us insight on the

individual impact WCPC IQPs had on students. Through the surveys and interviews with the WCPC alumni, our team learned how the WCPC projects had impacted them individually. To observe the impact of the WCPC at different levels, our team conducted interviews with past WCPC sponsors. Alternatively, having interviews with the sponsors allowed us to see how the WCPC projects are utilized to benefit the Worcester community, the sponsoring organization, and potentially systemic impact. Since the sponsors are left with project products and recommendations, they have more time to work with the projects after the IQP team leaves and can better report on the impact of the projects at these higher levels of impact.

For the survey with on-campus IQP students, our target groups were students who had completed their IQP, students currently conducting their IQP, and future on-campus IQP students for the academic year 2020-2021. From their responses, our team defined levels of awareness of the WCPC, most popular resources to students for obtaining IQP-related information, desired improvements of their IQP experiences, and reasons why they chose on-campus IQPs over the WCPC projects. Through conducting interviews with the students, our team learned which aspects of the on-campus IQPs are attractive to students and what parts could be improved. Based on their answers, our team investigated the strengths of the WCPC as well as elements that need reinforcement to improve future center growth.

4.1 Impact of WCPC IQPs

As shown in Table 1, we interviewed multiple sources to gather first person perspectives on the impact of the WCPC. The most insightful stories for impact assessment came from the WCPC alumni and past project sponsors. We were able to gain a good understanding of the individual impact the Worcester Community Project Center has on alumni and sponsors through

both types of interviews, but the sponsor interviews gave us a more in-depth view of impact on organizational, community, and systemic level impacts.

On the individual level, all the sponsors and WCPC alumni we interviewed expressed that they have been personally impacted by the IQPs run through the WCPC. The alumni we interviewed often reflected that their experience at the Worcester Community Project Center affected their work ethic or professionalism skills moving forward in life. This is reflective of the examples of potential impact, as shown in Figure 1, particularly the professional development skills and personal growth. In our interview with an alumna from WPI's class of 2016, she shared, "I've taken so much away from [the IQP] experience in terms of work ethic, playing to one's strengths, and highlighting those strengths from the beginning." Other interviews we conducted reinforced this sentiment and many interview participants emphasize the relevance of skills learned during ID2050 in their lives post-graduation. She specifically noted that she felt as though her team's project would not have been able to succeed without the structure of ID2050 and the skills covered in the course.

Furthermore, as previously stated, alumni shared that they felt more connected to Worcester as well as the WPI campus after conducting their IQPs at the WCPC. Multiple alumni reported having feelings of fulfillment by giving back to the local community and pride in the projects they completed. These responses demonstrate cross-cultural learning and empathy, asset accumulation, as well as confidence and a sense of contribution examples from Figure 1. Some of our survey responses emphasize that Worcester becomes home for undergraduates for four years, but many students never get a chance to explore the city. As one survey participant shared, "Doing a deeper dive into our local non-profit community really helped give us a better understanding of the Worcester Community as a whole and took us out of our bubble at WPI. The most memorable

aspect was effecting change to our neighboring communities for the people who needed it the most." Another survey participant wrote, "Through working with Mass. Department of Environmental Protection, we not only completed our project, [but we were] submerged in an invaluable experience. [We] learned the social science and project management knowledge, but also got to learn how as a pilot program, we explored options and means to help build a better community." This testimonial further emphasizes the opportunities for incredible, meaningful projects offered by the WCPC.

At the organizational level, the sponsors were able to give us firsthand feedback on how working with the WCPC has benefitted their organizations. We mostly noticed that these impacts manifested at these organizations through planning and project development, assets, and resources. Since IQPs intend to solve problems through social science and technology, the final deliverables sponsors receive varies from recommendations to a finished product (WPI, n.d.c.). Every sponsor we spoke to reported that they always implemented their IQP team's deliverables if it was feasible for the organization. We interviewed Jean Des Roches and Steven Kessler from the Seven Hills Foundation, and they described their favorite project; creating an assistive technology exposition held in central Massachusetts. The Seven Hills Foundation is an organization that works on the "development and delivery of a wide spectrum of clinical, educational and behavioral health services," to aid people who have "significant challenges so that [they can achieve] personal well-being and independence" (Seven Hills Foundation, 2020). They expressed that while assistive technology expositions exist, they are usually in the Boston area, and therefore access to this technology is an issue. Seven Hills had two IQP teams work on the project consecutively, the first team designed and developed the plan and the second team put the plan into action. After these IQPs finished, Seven Hills had the plans and knowledge to be able to host the assistive technology

expositions individually. Kessler highlighted that by hosting these expositions, members of the community utilizing these products are more independent sooner because they can access the products locally.

The sponsors we spoke to were also able to give us insight on how the WCPC's IQPs positively impact the Worcester community. Examples of community impact include community sustainability and the enhancement of health and well-being. We interviewed Kelsey Hopkins from the Worcester Department of Health and Human Services, who has sponsored four WCPC projects over the past few years. She told us about her favorite project, Stigma-Free, a solution to reducing the stigma surrounding drug addiction, homelessness, and mental illness. The goal of this team was "to create an accessible directory of substance use treatment services and related resources in Worcester through the creation of a mobile application" (WCPC, n.d.d.). Hopkins excitedly shared, "Our IQP team that did Stigma-Free won the [WPI] President's [IQP] Award... and they are being honored by the Mayor of the City of Worcester with keys to the city." As previously mentioned, winning the President's IQP Award is a significant accomplishment at WPI, mainly because it takes all IQPs (about 200) from the academic year into consideration. Being granted keys to the city proves undoubtedly that the project has a massive impact on the community, which was reinforced by Hopkins.

The last level of impact we assessed was systemic impact. One indication of a systemic impact is when the strategies used by a community diffuses into other communities. We interviewed Debbie Maruca-Hoak from Habitat for Humanity (MetroWest/Greater Worcester), and she reflected on a recent project they sponsored. Habitat for Humanity's mission is to provide an opportunity for safe and affordable housing to community members in need (Habitat for Humanity, 2020). The team "completed a 360-degree organizational cultural assessment focusing

on 11 aspects of organizational culture" that allowed them to create a more efficient and organized donation process for the ReStores in the MetroWest/Greater Worcester area (Howard et al., 2018). Maruca-Hoak explained that the ReStores are donation centers run by Habitat for Humanity that allow for more sustainability within communities. People can donate appliances, materials towards building houses, furniture, and more, which keeps material out of landfills and allows other community members to purchase these items at a reduced price. Furthermore, the profits of the ReStore contribute to the cost of materials for building houses. The IQP Debbie described assessed the dollar amount made per pound of donations that go into the ReStore, which they did not have an exact number for previously. The team was able to create a process for calculating the value and found the desired amount. Debbie Maruca-Hoak shared that the findings of the IQP team are now utilized by ReStores across the state and by Habitat for Humanity International. Although the IQP was sponsored by Habitat for Humanity (MetroWest/Greater Worcester), this WCPC IQP was able to create an impact on the international scale and, therefore, diffuse its methods into other communities.

4.2 Experiences of WCPC Alumni and Sponsors

As previously mentioned, a significant reason for conducting interviews was to learn about the experiences of students and sponsors involved with the Worcester Community Project Center. The goal was to collect testimonials from WCPC alumni and past project sponsors for the WCPC's 20th anniversary interactive webpage. We wanted an endorsement from alumni so that future students making their IQP decisions could have real, first-person experiences, especially since the new students can relate to the prior students that worked on and conducted the projects. We also wanted past project sponsors' experiences to emphasize the impact of the WCPC projects because,

as all the sponsors we spoke to agree, the IQPs at the WCPC are fantastic opportunities with substantial, local impacts at different levels. Sponsors also offer unbiased experiences since they are outside of the project center and WPI community. We also needed to learn if there were any improvements either of these target groups wanted to see from the WCPC that we could recommend and expand the reach of the WCPC even more.

When we interviewed WCPC alumni, we noticed some common themes within their experiences. In the survey, we asked respondents to share the most memorable aspect of their WCPC IQP experience. For many WCPC IQP alumni the most prominent memories from their IQP revolve around building connections and experiencing culture in, and around, Worcester. Since we received sixty-three responses to the survey, we decided the best way to represent everyone's answers would be to categorize them into larger topics. These topics include giving back to the local community, building connections, and experiencing the history and culture of Worcester.

Many students had comments about how they felt more connected to Worcester and WPI by being able to give back to the local community. One student replied, "being able to conduct a project in a city that has meaning to me was by far the best part of the experience..." so while they already had a connection to Worcester, they were able to strengthen it through their IQP. Students also expressed that a benefit to the WCPC is that there is office space off-campus, and as a result, they felt more relaxed because they were able to separate work from their personal life. One student shared the benefits of completing his IQP through the WCPC, such as getting to stay where he was already living, not missing out on any campus-wide events, and exploring the various cuisines Worcester offers.

Students expressed that a benefit to the WCPC is that there is office space off-campus, and as a result, they felt more relaxed because they were able to separate work from their personal life. One student shared the benefits of completing his IQP through the WCPC, such as getting to stay where he was already living, not missing out on any campus-wide events, and exploring the various cuisines Worcester offers. Other students reinforced this sentiment and offered additions, such as being able to see their friends or family during their project term. Most of the respondents shared that the most memorable aspect of their project was the connections formed with the members of the Worcester community. The community members include the target users for the projects, sponsors, advisors, and even peers. Multiple students reported that through their sponsors and the WCPC, they were able to create lasting and meaningful connections that they are still in contact with to this day. As one survey participant shared, the WCPC allowed them to "get to meet some of the important people in the greater Worcester community, from business leaders to members of the local government". Many other respondents recalled similar experiences and bonds with their sponsors, the community members, and peers.

Additionally, many students enjoyed being able to travel locally and explore Worcester. Some sponsors had teams to attend meetings in different towns around Worcester county, and many students included this as one of the most memorable aspects of their experience. A few students specifically mentioned their teams did work in Auburn and Boston and that getting to experience those cities as well as Worcester was exciting. Some students also reflected that they enjoyed their commute to the Worcester Community Project Center and being able to experience the area of downtown Worcester on breaks. One 2003 WCPC alumnus shared in his interview, "I was interested in Worcester and its history, so being able to do a project that focused on the city I'd been living in for two and a half years was really attractive and drew me towards it." We

received many similar responses with students recalling that they appreciated being able to explore Worcester outside of the WPI community and wishing they had delved into the history and culture sooner.

When interviewing sponsors, we also noticed trends in responses such as high-quality work, building connections with students, and interest in multi-term projects. All three sponsors that we spoke to agreed that the work done by the WCPC meets, and often exceeds, their expectations, yet does not get the recognition it should. Additionally, each sponsor mentioned that they enjoy working with the WCPC and often form lasting connections with students. Furthermore, two of the three sponsors mentioned that they would like the option for multiple term projects through the WCPC.

Every sponsor we interviewed brought up the fact that the WCPC is producing amazing work that their organizations almost always utilize. Kelsey Hopkins from the Worcester Department of Health and Human Services shared, "We are consistently impressed by the quality and the caliber of the WPI students and of their mentors and faculty." As previously mentioned, Hopkins was very eager to share her positive experiences and expressed that the organization would love to continue working with the WCPC indefinitely. Debbie Maruca-Hoak from Habitat for Humanity reflected that while sometimes the organization is unable to implement students' project recommendations immediately, the ideas almost always come back up and are executed later. Jean Des Roches and Steven Kessler from Seven Hills also noted that they knowingly give their teams projects that are very challenging but are always satisfied with the work the teams complete during their seven weeks of IQP. All the sponsors have conducted multiple projects through the WCPC and intend to continue to work with them far into the future.

Another recurring theme with the responses we received from the sponsors was that they formed strong connections with the students in their teams and others at the WCPC. Debbie Maruka-Hoak described how ideas provided by IQP teams sometimes are not put into effect immediately, but they implement the ideas later. She shared, "the teams and the staff were so engaged [that] those ideas and thought processes sort of became our own... ideas often come from interactions so through interactions with customers or staff members, so it'll trigger the thought process and we'll implement that [idea]". Through the connections formed between the students and the staff, their ideas intermingle. The ideas of the students stay with the staff members even after their project term.

Furthermore, sponsors from Seven Hills supported this idea. They expressed that they enjoy getting to know students and that the students can learn about assistive technology, so they felt it was a beneficial situation for everyone involved. Kelsey Hopkins mentioned that the Department of Health and Human Services also maintains connections with the students whom they meet through the WCPC. She specified that one of their past students continues to work with her organization through federal work-study, and another student reached out to her assistance finding a summer internship. While students feel connected to their sponsors, community members, and more, the sponsors feel the same way about the students and staff they meet through the WCPC.

The last theme we noticed was the desire for multiple-term projects. The sponsors from the Seven Hills Foundation and Habitat for Humanity both expressed that they wished they had more time to work with the students on the project. The sponsors from the Department of Health and Human Services did not specify a desire for multiple-term projects, but all three sponsors have sponsored continuation projects. Each sponsor expressed that each team, the one that initially starts

the project and the one that follows it the next term, does excellent and impressive work, but the projects do not feel the same. They all expressed that when the first team goes above and beyond, it is hard to compete with the team continuing the project even if they are also producing high-quality work. We considered this when forming our final recommendations for the WCPC.

Overall, each sponsor we talked to seemed to have nothing but compliments for the WCPC. Each sponsor is unique when it comes to project expectations and goals, but they all share the desire to impact the community positively. After interviewing these three organizations, we concluded that each sponsor had several projects that left a lasting impact on the Worcester community, whether it was an app, an exposition, or a single recommendation. It seemed that some of the sponsors would be interested in extending the length of the project to more than one term and that the extension could benefit the outcome of a project.

4.3 Awareness of the WCPC among WPI students

Our team sent a survey to students involved with on-campus IQPs, as seen in Appendix B. The purpose of this survey was to assess the most popular resources to students for gaining IQP-related information, desired improvements from on-campus IQP experiences, level of awareness of the WCPC, and to understand why the students chose on-campus IQPs instead of the WCPC projects. We obtained a list of ninety-one students who have either completed on-campus IQPs within the past academic year or are currently enrolled and working on it from our project sponsor, Laura Roberts. We also requested that our sponsor send out the survey link to professors who might know students who anticipated completing on-campus IQPs. The total response rate was fifty-five percent, meaning fifty students out of ninety-one students answered the survey.
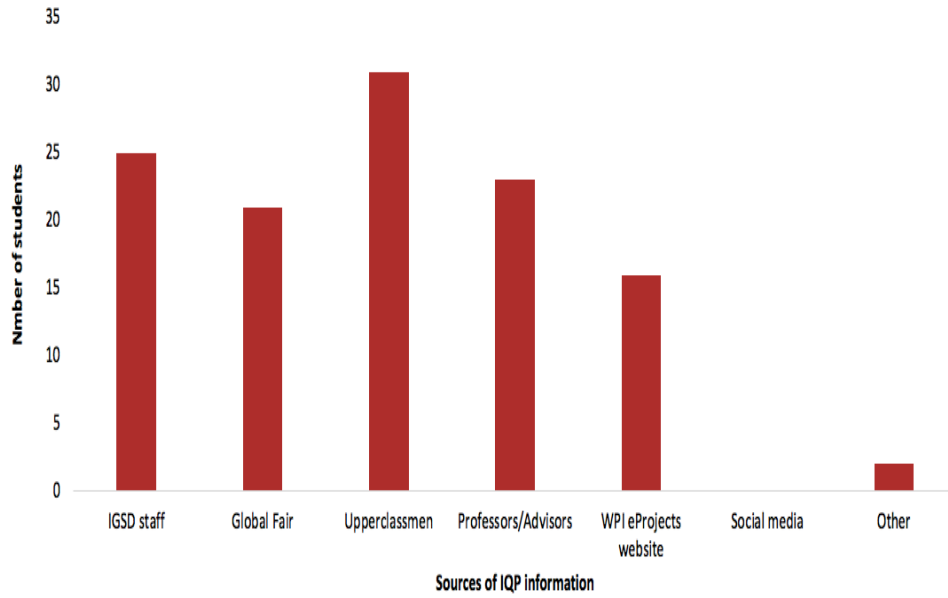
From the on-campus IQP student survey, our team found that the level of awareness of the WCPC is good but could be improved further. In the survey, our team asked if they whether the students knew about the WCPC when they made their choices for IQP locations or not, to gauge the students' level of awareness of the WCPC. Thirty-four percent of students who answered the survey said they did not know about the WCPC when they made their choice for IQP locations. Based on these responses, our team concluded that some students are unaware that the WCPC is an option for them. Therefore, we needed to increase the center's visibility to students.

In order to advertise itself with maximum efficiency, the WCPC needs to know what resources are highly used by prospective students. As previously mentioned, WPI hosts the on-campus and off-campus IQP fairs separately. The off-campus IQP fair, also referred to as the Global Fair, is in the fall semester, and the on-campus IQP fair is in the spring after the off-campus IQP application process is complete. The purpose of holding the IQP fairs is to inform WPI students about the various IQP opportunities offered. Besides the IQP fairs, WPI students get information through different ways, such as from friends, faculty advisors, or the WPI eProjects website.

In both surveys for the WCPC alumni and on-campus IQP students, our team asked which sources they used to obtain the IQP-related information. We offered seven different sources that are currently being used by WPI students, including one textbox enabling them to specify if none of the other options are applicable. The purpose of this question is to define the most widely used sources by the students so that the WCPC advertises itself more efficiently and can be seen by as many students as possible.
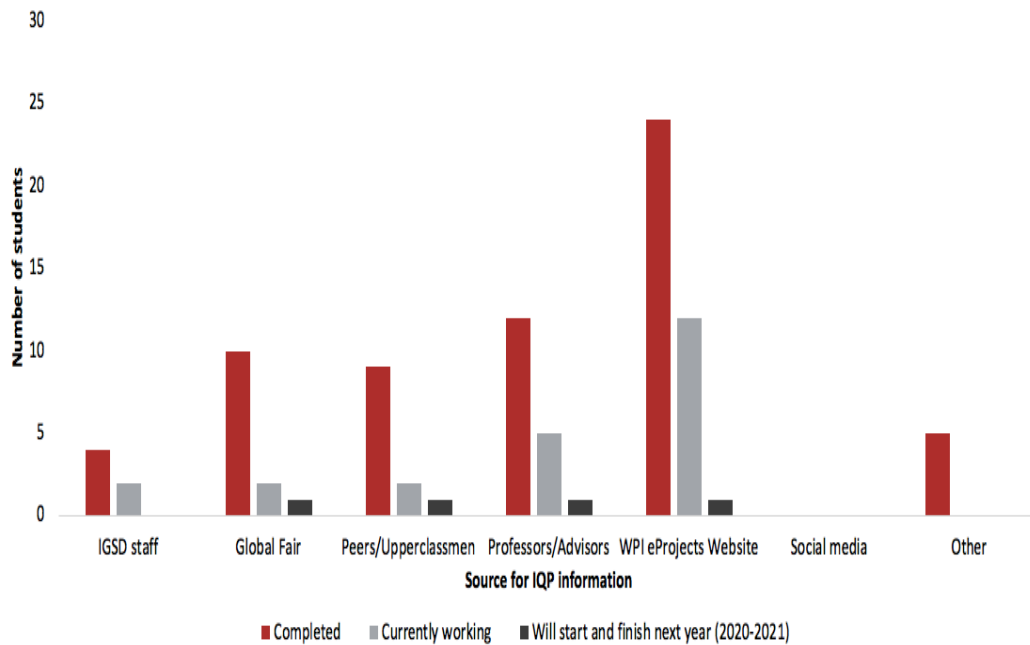
Figure 2

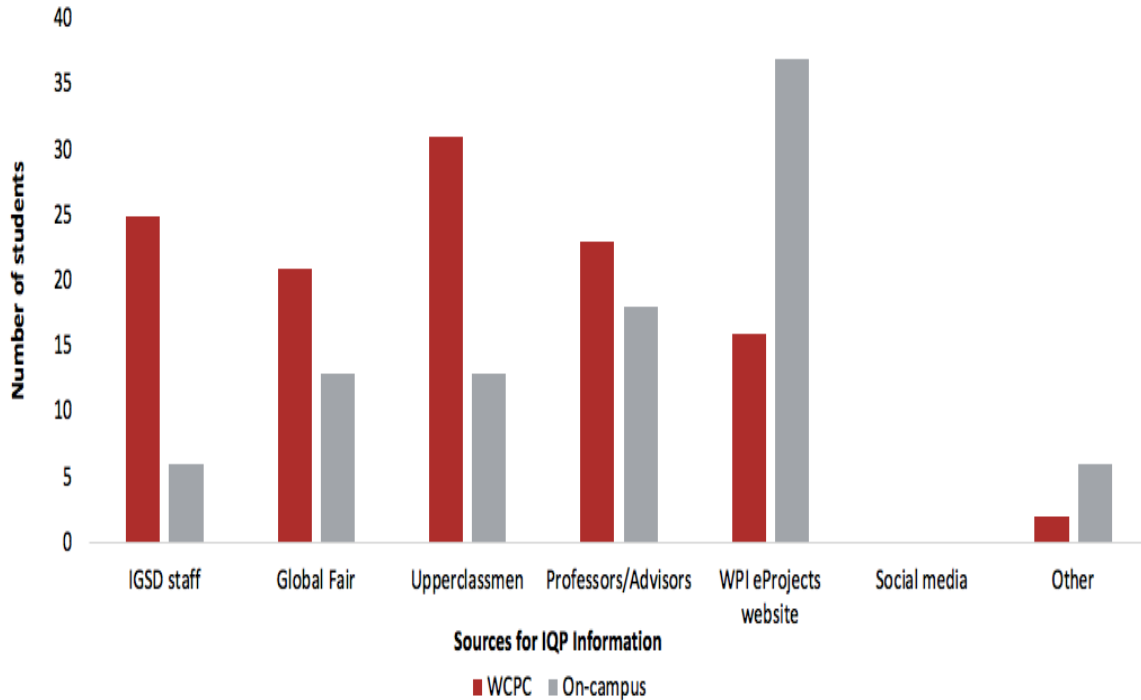*Sources of gaining IQP information [WCPC Alumni]*

Figure 3

Sources of gaining IQP information [on-campus IQP students]

Figure 4

Sources of gaining IQP information [combined WCPC alumni and on-campus students]

Based on the survey results, our team defined the most common sources that the students use for acquiring the IQP-related information. Figures 2 and 3 illustrate how the WCPC alumni and on-campus IQP students utilize each source to gain IQP information. We compare the usage of the sources by on-campus IQP students and WCPC alumni in Figure 4. As seen in Figure 4, the popular sources among the students vary based on whether the student chose an on-campus project or one at the WCPC. The WCPC alumni had mainly obtained IQP information from Interdisciplinary Global Studies Department (IGSD) staff, faculty advisors, and peers. On-campus students tend to use the WPI eProjects website to obtain information primarily, but also learn about

IQPs from professors/advisors, peers, and the Global Fair. From the survey results, our team could assess how we should improve advertising for the WCPC.

In summary, thirty-four percent of the on-campus IQP students were unaware of the WCPC when they chose IQP locations. The level of awareness of the WCPC among students is good, but could be improved further. For the improvement, our team determined the WCPC need to increase its visibility among students. We initially suspected that a reason why students select on-campus IQPs over the WCPC is due to exposure, so our team investigated the most widely used sources among students to obtain IQP-related information. Based on the survey results, the recurring sources among the students vary based on whether the student chose an on-campus project or one at the WCPC. As seen in Figure 4, the Interdisciplinary Global Studies Department (IGSD) staff, faculty advisors, and peers are the most popular sources for the WCPC alumni. On the other hand, the WPI eProjects website is the primary source for on-campus IQP students, but also from professors/advisors, peers, and the Global Fair.

4.4. Statistics for WCPC IQPs versus on-campus IQPs

To construct recommendations to promote the future growth of the WCPC, our team conducted interviews and surveys with both on-campus IQP students and the WCPC alumni. The purpose of having surveys and interviews with the WCPC alumni was to learn why they chose the WCPC to complete their IQPs in addition to collecting testimonials. Thus, our team asked what factors led them to choose the WCPC. After conducting surveys and interviews with the WCPC alumni, our team had a more concrete understanding of the reasons why students choose the WCPC.

For comparison purposes, we also learned the reasons why students choose on-campus IQPs from conducting surveys and interviews with the on-campus IQP students. As seen in Appendix B, we asked on-campus IQP students which factors led them to do an on-campus IQPs and whether they considered the WCPC as an option or not. To the students who were aware of, and considered, the WCPC we asked what aspects could have led them to choose the WCPC. On the other hand, to the students who were aware of the WCPC, but did not consider it as an option, we asked what deterred them from considering the WCPC. From the responses, we learned the primary reasons that students choose on-campus IQPs and why they might not consider the WCPC. Furthermore, our team evaluated the possibility of the WCPC incorporating the elements that were appealing to students that chose on-campus IQPs, and we took this into account when making our recommendations for the WCPC.

4.4.1 Statistics for WCPC IQPs

In terms of growing the WCPC, our team aimed to develop recommendations for making the WCPC appealing to even more WPI students. Our team believed that the leading factors for students to complete WCPC projects needed to be considered for developing the recommendation. This means that the WCPC needs to uphold the current demands of students because those are the reasons why students initially choose the project center. To achieve this goal, our team investigated leading factors as to why students chose the WCPC. In the survey for the WCPC alumni, we asked what factors lead them to complete projects at the site.

Figure 5

Leading factors for students to do WCPC projects
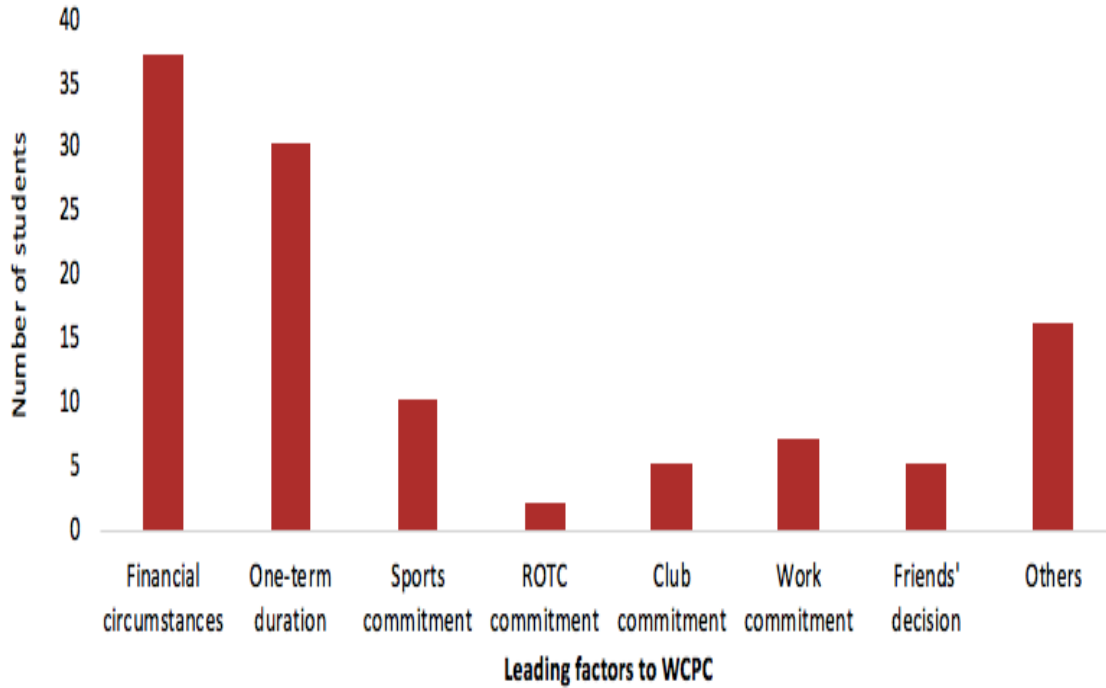
As seen in Figure 5, cost and one-term duration projects are the most notable factors that led students to participate in WCPC projects. As discussed above, both the WCPC and on-campus IQPs are no-cost project centers. The WCPC projects are completed over one-term while the on-campus IQPs proceeds for three consecutive terms. Considering that both the WCPC and on-campus IQPs are zero-cost project options, our team interpreted that the one-term duration differentiates the WCPC from the on-campus IQPs. In Figure 5, fifty-one percent of the WCPC alumni answered they chose the WCPC because of one-term duration for projects. Furthermore, we have received feedback both in interviews and surveys that state the one-term duration allowed students to have the full experience provided by an off-campus IQP. Based on the results above,

we concluded the most significant factor for students to choose the WCPC over an on-campus IQP is one-term duration project option.

In addition to one-term duration, our team concluded that the location of the WCPC is one of the leading factors to choose the project site. In the "others" category, five out of sixteen students specified that the reason why they chose the WCPC was the capability of having off-campus IQP experience without traveling abroad. As we discussed above, the design of the WCPC allows students who are athletes, hold leadership roles in clubs, have work, or other commitments to complete their IQP requirements while attending their other activities, within reason. During our interviews with WCPC alumni, some mentioned they were involved with sports or other commitments, and they specified that the location of the WCPC was one of the main motivators for them. Based on Figure 5 and interview responses, our team concluded that the most substantial reasons for students to choose the WCPC are because the projects are one term and the location of the project center.

Furthermore, as mentioned in the introduction, one of the differences between on-campus IQPs and WCPC projects is the preparatory course requirement. The students at the WCPC must take the pre-requisite course called ID2050, while students doing on-campus IQPs are not required to take this course. In an ID2050 class, students learn about team dynamics, research design, and methods for social science writing and analysis. Students partake in presentations, writing an organized project proposal, and developing a communication model for reporting their project findings.

In the survey for the on-campus IQP students, our team asked for students to briefly explain the aspects of their project experience that could have been better. To this question, the most common issues they mentioned were lack of communication, poor team dynamics, and the lack of

a structured format for project terms. With the on-campus student survey, several students made comments such as "the workload grew at odd rates," "a more structured format was needed," and they "wished to have more communication with the advisor(s)."

In contrast, many WCPC alumni mentioned having strong team dynamics, a structured format for the project term, and efficient and enjoyable interactions with both sponsors and advisors as positive, memorable aspects of their experience at the WCPC. According to a WCPC alumnus, the topics covered in ID2050, including research and writing skills, helped him greatly for the actual project term. Additionally, another WCPC alumna said, "Our project might not have succeeded as well as it did without ID2050." During the interview, she also elaborated that taking ID2050 helped her with team building, taking advantage of each member's skills, and mapping out the project.

We found through the on-campus and WCPC surveys that ID2050 adds value to IQPs and taking ID2050 is a benefit for WCPC, and other off-campus, students. Evidence of this is thirteen students from the on-campus IQP survey admitted that taking ID2050 would have helped them have a better IQP experience. The students that answered ID2050 would not have helped expressed that they took an equivalent course to prepare for their projects, which are not mandatory for on-campus IQPs, or they were not working in a team, which removes the issue of working with others. In an interview with an on-campus IQP student, they shared that while they went into their project with former research skills gained outside of their IQP, they can see how other students may struggle to obtain those skills without ID2050.

4.4.2 Statistics for on-campus IQPs

To develop meaningful recommendations for the WCPC and its future, our team asked on-campus IQP students why they chose on-campus IQPs over the WCPC. Our team thought the WCPC might be able to take the needs of certain students into consideration and use it towards growth moving forward. Based on the on-campus IQP student survey results, we found that many on-campus IQP students wanted to enroll in multi-term duration projects option to avoid course scheduling conflict.

In the on-campus IQP student survey, we asked students what the leading factors were when choosing on-campus.

Figure 6

Leading factors when choosing on-campus IQPs
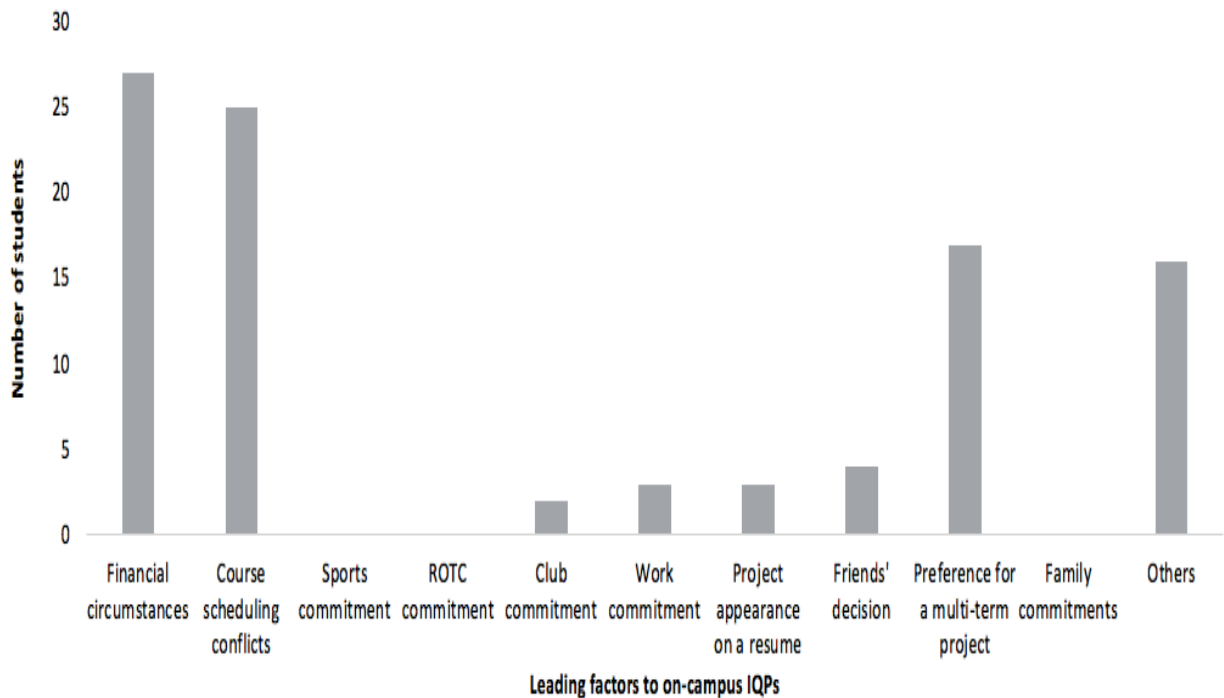
As seen in Figure 6, financial circumstances, course scheduling conflicts, and multi-term projects are the most notable leading factors for on-campus IQP students. As mentioned in the introduction, both the WCPC and on-campus IQPs charge no additional cost to students. Since both project centers are zero-cost project sites, we concluded that the financial circumstances should not be one of the leading factors for comparing on-campus and WCPC projects. Therefore, we considered course scheduling conflict and multi-term projects are the notable leading factors for the on-campus IQP students. We can support this reflection because course scheduling conflict and multi-term projects were the most significant factors that could have led on-campus IQP students to choose or consider the WCPC as one of the options. Additionally, we found that the two leading factors are connected.

To understand why course scheduling conflicts and project duration are notable factors, we considered what we knew about WPI's course registration system. Most WPI students take three courses per term, each worth one-third of a unit. For some majors, there are required courses that are only offered for one specific term each year. Therefore, students who are restricted by the need to take a singular major-specific course cannot leave for an entire term to complete their IQPs. Additionally, students who partake in programs where they earn their Bachelor's and Master's Degrees in four years tend to remain on campus due to the fact graduate courses occur over two terms.

The students who have course scheduling conflict can solve their problem by doing on-campus IQPs instead of off-campus IQPs. On-campus IQPs are divided into three consecutive terms and treated as taking one course per term. With this structure, students can take two other courses outside of their on-campus IQP. We concluded that course scheduling conflicts and project duration are interconnected. Since doing projects over multiple-terms allows students to take two

academic courses concurrently, the students who want to avoid course scheduling conflict tend to choose on-campus IQPs. One student we interviewed mentioned that being able to overload while away for IQP may make the WCPC more attractive towards students with these course scheduling conflicts. While it is possible to overload at the WCPC, it is not well known amongst students or utilized as a marketing point because overloading may detract from the full IQP experience.

In the on-campus IQP student survey, we asked students if they were aware of the WCPC when they chose their IQP locations. Fifty-eight percent of on-campus IQP students were aware at that time. With the following question, our team classified the students who were aware of the WCPC at that time into two groups: the people who considered the WCPC but chose to do on-campus IQPs, and the students did not consider the WCPC at all as one of the options. Based on the results, only thirty-one percent of students who were aware of the WCPC considered the project site as an option, while sixty-nine percent of students did not consider the WCPC as an option though they were aware of the site.

To the nine students who were aware of the WCPC and considered the project site as an option, we asked what factors could have led them to choose the WCPC projects. The purpose of this question was to observe what the WCPC could offer to appeal itself to students to choose the WCPC so that our team can consider those factors for developing recommendation for future growth of the WCPC. Figure 7 illustrates these responses.

Figure 7

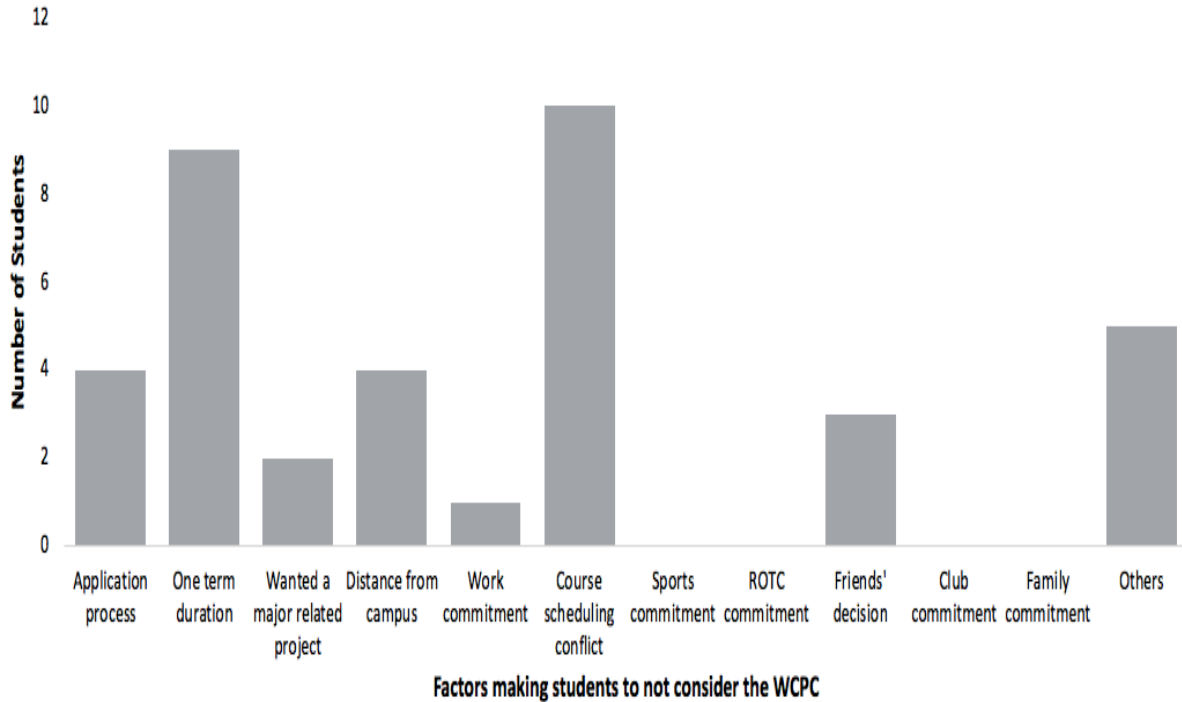*Potential factors for students to choose the WCPC projects over on-campus IQPs*
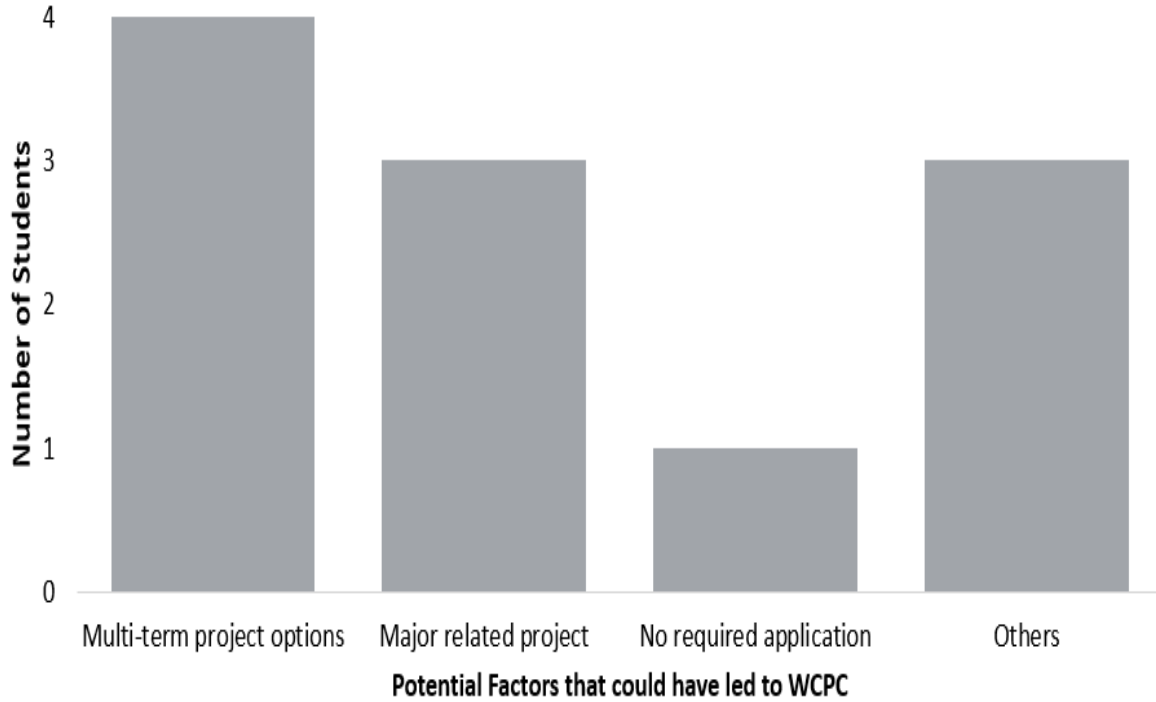
Also, to the twenty-nine students who were aware of the WCPC but did not consider the project site as an option, we asked what factors influenced them to not consider the WCPC at all. The purpose of this question was to observe what aspects of the WCPC deter the students from considering the project site as an option.

Figure 8

Factors students do not consider the WCPC as one of their options for IQP

The results from both Figures 7 and 8 support the fact that course scheduling conflict and multi-term projects are the leading factors for the students to choose on-campus IQPs instead of the WCPC projects. According to Figures 7 and 8, the most desired feature that could have led the students to choose or to consider the WCPC is a multi-term project option. In Figure 8, the students did not consider the WCPC as an option because it provides one term duration projects only, which can cause course scheduling conflict.

As we discussed above, the awareness of the WCPC is good among on-campus IQP students, but the rate of consideration is low. Though fifty-eight percent of the on-campus IQP students knew about the WCPC, only thirty-one percent of the students who were aware of the

WCPC considered the project site as an option. Since many on-campus IQP students were looking for a feature that the WCPC does not offer, sixty-nine percent of them did not consider the project site as an option at all.

The reason for the low consideration rate among the on-campus IQP students is because they were seeking for different feature compares to WCPC alumni. According to Figure 5 and WCPC alumni interview responses, the major leading factors for them to do WCPC projects are the one-term duration and the location of the project center. Though WCPC alumni desired to have a full off-campus IQP experience, they did not want to leave from the campus due to different commitments. Thus, they were seeking for the capability of having off-campus IQP experience without traveling abroad, in which the WCPC currently offers.

In contrast, on-campus IQP students were seeking for multi-term projects to avoid course scheduling conflicts. According to Figures 6, 7, and 8, many of the on-campus IQP students demand multi-term projects. Figure 6 shows the most leading factors to do on-campus IQPs are course scheduling conflict and preference for a multi-term project. In Figure 7, forty-five percent of the students who knew about the WCPC but still chose on-campus IQP expressed that they would have chosen the WCPC if it offered multi-term project opportunities. In addition, Figure 8 shows the on-campus IQP students' concern of having course scheduling conflict due to one-term projects.

Based on the surveys and interviews with on-campus IQP students, many of these students choose on-campus IQP because it is their only option that offers multi-term projects. Often, the students conducting on-campus IQPs have scheduling conflicts that do not allow for them not to take courses for the whole project term. Sixty-nine percent of on-campus IQP students who knew about the WCPC did not consider the project site as an option because it does not offer their desired

feature: a multi-term project to avoid a course scheduling conflict. We can conclude that the multiple term project duration is one of the most desirable aspects of on-campus IQPs.

5.0 Recommendations and Conclusion

Based on the data we collected, our team achieved the project goals: assessing, and reflecting on, the impact of the WCPC and developing recommendations to enable growth in the future. In both surveys and interviews, WCPC alumni shared their IQP experiences that affected them in a positive way. Based on their responses, our team concluded that completing WCPC projects helped them to be prepared for the real world. Several WCPC alumni mentioned that they learned research skills, presentation skills, and team dynamics which are all valuable assets in the work force. Additionally, WCPC alumni noted that there was an emphasis to contribute to the Worcester community in some way. In summary, doing WCPC projects provided personal growth, valuable life-long lasting skills, and confidence of contribution. Their testimonials enabled us to confirm that the WCPC impacts on an individual level, meaning each WCPC alumni individually.

From the interviews with past WCPC sponsors, they shared their experiences with the WCPC and how completed projects by WCPC IQP team have impacts on the communities that each sponsoring organization serves. According to Kelsey Hopkins from the Worcester Department of Health, a WPI IQP team developed a mobile application in three different languages for people who are seeking nearby clinics. The mobile application allowed people to make appointments with clinicians and saved time by listing nearby clinics according to the user's location. Jean Des Roches and Steven Kessler from the Seven Hills Foundation, one of their WPI IQP teams planned the assistive device exposition. Assistive technology helps the elderly or people with disabilities perform daily activities independently. This exposition introduced many differently-abled locals to the technology changing the quality of their everyday lives. Based on their responses in the interviews, our team concluded that WCPC has impacts on community level,

meaning that the health and well-being of the people in the Worcester community are enhanced by completed WCPC projects.

For the twentieth anniversary of WCPC, our team created an interactive webpage that increases the level of engagement of audiences, or website visitors. The purposes of creating the webpage are to inform the people who are interested in the WCPC and to show the history and impact of the WCPC. For website content, our team gathered information through interviews and surveys with WCPC alumni and past sponsors. From them, our team obtained personalized testimonials, photos, and videos for showing impact and history of the WCPC. To develop the webpage, our team used software called Adobe Muse, which allowed us to create the website without any coding experience.

One of the project goals was to develop recommendations to preserve the future of the WCPC. Through surveys and interviews with both on-campus IQP students and WCPC alumni, we compared reasons for why the students choose the WCPC or on-campus IQPs. We defined the primary reasons that students choose each project site. Based on the data obtained from the WCPC alumni surveys and interviews, our team learned that the main reason for WCPC alumni was one-term duration projects. According to the survey and interview responses, students that choose the WCPC are looking to have the full off-campus IQP experience while remaining in the Worcester area and paying no additional fees for this center. Since the WCPC is a local off-campus project center, it satisfies the needs of those students. In contrast, the leading factor for on-campus IQP students was multi-term duration projects to avoid scheduling conflicts.

From our findings, we determined recommendations to aid the future growth of the WCPC. First, we would suggest offering multi-term duration projects as it is appealing to sponsors and students who would otherwise choose on-campus IQPs. All the sponsors we interviewed expressed

interest in the possibility of working with students for more than one term; they all agreed that the seven-week work period flies by too quickly. While the work often exceeds the sponsors' expectations, they would be excited to see how much more in-depth teams can go with their projects. Furthermore, the on-campus IQP students we interviewed and surveyed emphasized that a multi-term project would sway many students who would otherwise choose on-campus IQPs. The multiple-term project option is the primary difference between the WCPC and on-campus IQPs. If the WCPC were to offer a multi-term option in addition to the single-term option, it would be marketable to many more students. Also, this way, on-campus students would no longer have the barrier of being unable to take specific courses they need for their program requirements.

Additionally, we recommend adding more marketing material on the WPI eProjects website. We advise this because, as shown in our findings, this website was one of the primary sources that on-campus IQP students utilize both in decision making and during their project term. One of the on-campus students we interviewed shared that on-campus IQP students heavily use WPI's eProjects website. She also expressed that on-cam   pus IQP students are unable to access most resources that off-campus students can, such as consulting with the Interdisciplinary and Global Studies Division (IGSD) staff members. We believe that by enhancing the existing entry on the WPI eProjects website, the WCPC will be able to advertise to, and reach, more students than before and increase the center's enrollment.

Our team believes, based on our findings and research, that by implementing these changes and advertising the twentieth anniversary interactive webpage, the center's enrollment will increase. We found that a decent percentage of students were unaware of the existence of the WCPC and that students who   choose on-campus IQPs utilize a source that is not often referred to by those who choose the WCPC. By increasing marketing efforts through having WPI share the

interactive webpage, our team created and embellished the WCPC's entry on the WPI eProjects website, student's awareness of the WCPC should improve. We also found that many students who choose on-campus IQPs have no other choice because their mandatory courses do not allow for them to take a full-term away from classes. Some students have majors that limit the ability to go off-campus, and others are in BS/MS programs where they must take semester-long classes or overload. By offering multi-term projects, the WCPC will not only appeal to more students with these circumstances but also benefit the sponsors who already love working with the WCPC.

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Appendix A: Final Survey (WCPC Alumni)

Introduction: Our team is analyzing the history and impact of the Worcester Community Project Center (WCPC). The purpose of this survey is to gain personal feedback from the alumni who completed their IQP at the WCPC. Our team will use this feedback to add to an interactive webpage for the WCPC and to recommend future center improvements. By answering this survey, you are consenting to this data being used for research purposes. We will not contact you for further questions unless given your consent later in the survey.

1) When you were in the process of signing up for an IQP, which sources did you refer to for gathering information about the various project centers? (Select all that apply)

    a) Interdisciplinary and Global Studies Division (IGSD) staff

    b) Global fair

    c) Upperclassmen

    d) Professors/Advisors

    e) WPI eProjects Website

    f) Social media [please state which social media platform(s)]: _____

    g) Other (please specify): _____

2) Which of the following factors led you to choose the WCPC for your IQP? (Please select all that apply)

    a) Money

    b) One-term duration

    c) Sports

    d) ROTC

  e) Club commitments

  f) Work

  g) Friends' decisions

  h) Other (please specify): _____

3) Please describe the most memorable aspects of your project experience at the WCPC.

  _____

4) We are in the process of compiling stories, pictures, and videos that we can use for celebrating the twentieth anniversary of the WCPC. Are you willing to be interviewed or upload files from your IQP experience? Interviews are expected to be 15-20 minutes long and conducted through Zoom. Check box(es) that apply.

  a) Yes, upload photos

  b) Yes, interview

  c) No to both <mark>[end survey]</mark>

5) Please fill in your name: _____

6) Please fill in the best email to reach you at: _____

7) Please upload your files here. By uploading the pictures and videos, you are providing consent to publish them on the WCPC website. <mark>[only shown if "yes, upload photos" was selected]</mark>

Appendix B: Final Survey (On-Campus Students)

Introduction: Our team is analyzing the history and impact of the Worcester Community Project Center (WCPC). The purpose of this survey is to gather information from past and current students regarding how they choose their IQP locations and to understand whether students are aware of the WCPC as a local option. By answering this survey, you are consenting to this data being used for research purposes. We will not contact you for further questions unless you give your consent.

1) What is the status of your IQP?

    a) Completed my IQP [follow path 1]

    b) Currently completing [follow path 1]

    c) Will start [follow path 2]

Path 1

2) When you were selecting an IQP, which source(s) did you use to gather information? Select all that apply:

    a) Interdisciplinary and Global Studies Division (IGSD) staff

    b) Global fair

    c) Upperclassmen

    d) Professors/Advisors

    e) WPI eProjects Website

    f) Social media [please state which social media platform(s)]: _____

    g) Other (please specify): _____

3) Which factor(s) led you to select an on-campus IQP? Select all that apply:

    a) Financial circumstances

    b) Course scheduling conflicts

c) Sports commitments

d) ROTC commitments

e) Club commitments

f) Work commitments

g) Project appearance on a resume

h) Friends' decisions

i) Preference for a multi term project

j) Family commitments

k) Other (please specify): _____

4) Was your IQP topic related to your major?

a) Yes

i) What is your major?

ii) What was your project title?

b) No

5) What were positive aspects of your IQP experience?

_____

6) What aspects of your IQP experience could have been improved?

_____

ID2050 is a required course for off-campus IQP students. The course covers research design, social science research methods, and data analysis. Students make presentations, write an organized project proposal, and develop a communication model for reporting their project findings.

7) Do you think your team could have benefitted from the skills introduced in ID2050?

a) Yes

    i) What skill(s) could your team would have benefited from learning about prior to your IQP? Select all that apply:

        (1) Team dynamics

        (2) Research design

        (3) Methods for social science research

        (4) Methods for social science analysis

        (5) Presentation making

        (6) Writing and organized project proposal

        (7) Developing communication models

        (8) Other(s): _____

b) No

    i) Why wouldn't your team have benefited from the skills covered in ID2050? _____

The Worcester Community Project Center is a local, no cost project center that provides WPI students an opportunity to complete a one-term IQP while staying in Worcester.

8) Were you aware of the WCPC when making your IQP decision?

a) Yes

b) No [end survey]

9) Did you consider a WCPC IQP when making your decision?

a) Yes

    i) What factor(s) could have led you to select a WCPC IQP over an on-campus IQP? Please select all that apply:

(1) Multi term project options

(2) Major related project

(3) No application

(4) Other (please specify): _____

b) No

    i) Why didn't you consider a WCPC IQP? Please select all that apply:

        (1) Application process

        (2) One term duration

        (3) Wanted a major related project

        (4) Distance from campus

        (5) Work commitments

        (6) Course scheduling conflict

        (7) Sports commitments

        (8) ROTC commitments

        (9) Friends' choices

        (10)   Club related commitments

        (11)   Family commitments

        (12)   Other (please specify): _____

10) Are you willing to be interviewed about your on-campus IQP experience? Interviews are anticipated to be 15-20 minutes and conducted through Zoom.

a) Yes

    i) What is your name? _____

    ii) What is your email address? _____

b) No <mark>[end survey]</mark>

11) When you were selecting an IQP, which source(s) did you use to gather information?

Select all that apply:

a) Interdisciplinary and Global Studies Division (IGSD) staff

b) Global fair

c) Upperclassmen

d) Professors/Advisors

e) WPI eProjects Website

f) Social media [please state which social media platform(s)]: _____

g) Other (please specify): _____

Which factor(s) led you to select an on-campus IQP? Select all that apply:

h) Financial circumstances

i) Course scheduling conflicts

j) Sports commitments

k) ROTC commitments

l) Club commitments

m) Work commitments

n) Project appearance on a resume

o) Friends' decisions

p) Preference for a multi term project

q) Family commitments

r) Other (please specify): _____

Appendix C: Interview Protocol (Faculty)

Interviewee: [First name Last name]

Date and time: [Scheduled date and time of interview]

Facilitating team member: 1 facilitator assigned

Scribing team member: 2 scribing team members (if not given recording permissions, 3 scribes)

Recording team member (if given consent): 1 recording team member

Introduction:

- Hello (insert name of interviewee), how are you today?

- Before we get started, we just wanted to say thank you again for helping us in our research! We also wanted to give a brief introduction of ourselves. [Each team member gives brief introduction; name, major, hometown/a hobby]

- Before we ask you questions, did you have any questions for us about our research or the consent form?

Warm up questions:

- Tell us about yourself

    - How long have you been at WPI? What's your position on campus?

    - How many on-campus IQPs have you advised?

    - How many off-campus IQPs have you advised? What are some of the locations?

Interview questions:

- Tell us about your experience advising IQPs

- On-campus projects

  - Tell us about your best project experience

  - Tell us about a project experience that could have gone better

  - What aspects of your experience could be improved?

- Off-campus projects

  - Tell us about your best project experience

  - Tell us about a project experience that could have gone better

  - What aspects of your experience could be improved?

- What are the struggles on-campus students face that off-campus students don't? (vice-versa)

- Have you ever noticed any difference in student performance between on-campus projects and off-campus projects?

  - If yes,

    - What are the differences?

    - In your opinion, what could be the reason(s)?

  - Do you think that on-campus IQP students could benefit from taking ID2050?

    - If yes, how so? Are there specific elements of ID2050 that stand out (research, writing, teamwork, etc.)?

    - If no, why not?

<u>Conclusion</u>

That's all the questions we had prepared for you, is there anything you'd like to add on to anything we discussed?

If we have any more questions that we think of later or wanted to follow up on one of your responses later, can we reach out for clarification?

- ❏ Yes

- ❏ No

Do you have any questions for us?

Thank you so much for your time, if you have any questions for the team you can always reach out to our team email alias or our advisors (they will have these emails from the consent form).

Appendix D: Interview Protocol (Sponsors)

Interviewee: [First name Last name]

Date and time: [Scheduled date and time of interview]

Facilitating team member: 1 facilitator assigned

Scribing team member: 2 scribing team members (if not given recording permissions, 3 scribes)

Recording team member (if given consent): 1 recording team member

Introduction:

- Hello (insert name of interviewee), how are you today?

- Before we get started, we just wanted to say thank you again for helping us in our research! We also wanted to give a brief introduction of ourselves. [Each team member gives brief introduction; name, major, hometown/a hobby]

- Before we ask you questions, did you have any questions for us about our research or the consent form?

Warm up questions:

- Tell us about your organization's connection to WPI (warm up)

    - How many WCPC IQPs have you sponsored?

Interview questions:

- Have past projects with the WCPC been helpful to your organization/company?

- Can you describe a positive experience you have had in the past?

- Can you describe a project that could have gone better?

- If so, how could it have been improved?

- For example, do you think one term is enough to complete an IQP project?

- Did you implement the student's recommendations at the end of the project term?

  - If yes, are they still being implemented today?

  - If no, why not?

- Would you consider working with the WCPC again in the future?

  - If not, how come?

- We are making an interactive webpage for the WCPC's website displaying testimonials and media to show past projects impact on the community. Would you happen to have any pictures or videos of past students working on their projects that you would be willing to share via email?

Conclusion:

- That's all the questions we had prepared for you, is there anything you'd like to add on to anything we discussed?

- If we have any more questions that we think of later or wanted to follow up on one of your responses, can we reach out for clarification?

  - ❑ Yes

  - ❑ No

- Do you have any questions for us?

- Thank you so much for your time, if you have any questions for the team you can always reach out to our team email alias or our advisors (they will have these emails from the consent form).

Appendix E: Interview Protocol (WCPC Alumni)

Interviewee: [First name Last name]

Date and time: [Scheduled date and time of interview]

Facilitating team member: 1 facilitator assigned

Scribing team member: 2 scribing team members (if not given recording permissions, 3 scribes)

Recording team member (if given consent): 1 recording team member

Introduction:

- Hello (insert name of interviewee), how are you today?

- Before we get started, we just wanted to say thank you again for helping us in our research! We also wanted to give a brief introduction of ourselves. [Each team member gives brief introduction; name, major, hometown/a hobby]

- Before we ask you questions, did you have any questions for us about our research or the consent form?

Warm up questions:

- Tell us about yourself

  - What is/was your major?

  - What is your class year? [on the webpage we can put quotes as "quote" -(Name) Class of XXXX]

  - What are you doing post-graduation?

Interview questions:

- Can you tell us about reasons that led you to choose the WCPC for your IQP?

- What was your takeaway from your WCPC project experience?

  o Pros/Cons?

  o Anything you would have changed?

- In what ways did your project impact your life?

- Did you feel well prepared going into your IQP?

  o Did ID2050 help? If yes, which aspects

  o If no, why not?

Conclusion:

- Those are all the questions we prepared for you, is there anything else you would like to add?

- If we have any more questions that we think of later or wanted to follow up on one of your responses, can we reach out for clarification?

  ❑ Yes

  ❑ No

- Do you have any questions for us?

- Thank you so much for your time, if you have any questions for the team you can always reach out to our team email alias or our advisors (they will have these emails from the consent form).

Appendix F: Interview Protocol (On-Campus Students)

Interviewee: [First name Last name]

Date and time: [Scheduled date and time of interview]

Facilitating team member: 1 facilitator assigned

Scribing team member: 2 scribing team members (if not given recording permissions, 3 scribes)

Recording team member (if given consent): 1 recording team member

<u>Introduction:</u>

- Hi (name of interviewee), how are you?

- First, thank you again for having an interview with us to help our research.

- Before we get started, we just wanted to give you a brief introduction of the team. My name is (interview facilitator) and (each member introduces themselves with name, class year, major).

- Before we ask questions, have you had a chance to look at the consent from we sent? Do you have any questions for us? (If they haven't look at it, verbally explain about the form).

<u>Questions:</u>

- Tell us about yourself (warm-up)

    o What class year are you in?

    o What is your major?

    o What are you doing post-graduation? (if applicable)

- Tell us about your on-campus IQP experience

    o What was/is your project?

- is/was the topic is related to your major?
  - o Tell us about a part of you project experience that could have gone better
- When you made your choice of IQP location, what factor(s) did you prioritize?
  - o What factor(s) of on-campus IQPs were attractive to you?

  In case interviewee have not heard about the ID2050, [ID2050 is a required course for off-campus IQP students. The course covers research design, social science research methods, and data analysis. Students make presentations, write an organized project proposal, and develop a communication model for reporting their project findings.]

  - o Did the possibility of taking ID2050 deter you from going off campus?
    - Are there any elements from ID2050 that you feel could have improved your experience? If yes which one(s)? If no why not?
- Were you aware of the WCPC when you made your choice of the IQP location?
  - o If yes, what factor(s) led you to choose to do on-campus IQP over the WCPC
    - Would you please elaborate why those factor(s) was/were appealing to you?
    - If the WCPC were to incorporate these factors would you have chosen, the WCPC (if applicable)
  - o If no,
    - Do you think you might have chosen the WCPC if you were aware of the project center?

<u>Conclusion:</u>

- That's all the questions we had prepared for you, is there anything you'd like to add on to anything we discussed?

- If we have any more questions that we think of later or wanted to follow up on one of your responses, can we reach out for clarification?

  ❑ Yes

  ❑ No

- Do you have any questions for us?

- Thank you so much for your time, if you have any questions for the team you can always reach out to our team email alias or our advisors (they will have these emails from the consent form).

Appendix G: Informed Consent Agreement

Informed Consent Agreement for Participation in a Research Study

Investigator: WPI IQP team - WCPC

Contact Information:

email: gr-wcpc20@wpi.edu (student team, primary contact)

Team members: Zachary Burns, Antonio Jeanlys, SoHyun Lim, and Anna O'Connell

Sstrauss@wpi.edu (Sarah Strauss ; Faculty Advisor)

Pshah@wpi.edu (Purvi Shah ; Faculty Advisor)

Title of Research Study: Twenty Years of the Worcester Community Project Center

Sponsor: Worcester Community Project Center (WCPC)

Introduction: Our IQP team at WPI will conduct online surveys and interviews to understand the history of the Worcester Community Project Center. We especially want to know how IQP experiences in Worcester have made an impact on individuals and the wider community. We will also be creating an interactive webpage on the WCPC's existing website to highlight these impacts. In order to give consent to participate in this research study, you must be fully informed before making your decision.

Purpose of the study: The goal of the project is to analyze and document the impact of the WCPC to the community, students, and sponsors. We particularly want to understand the difference in experience for students who do an on-campus IQP versus IQP at the WCPC.

Procedures to be followed: Our team will send out the surveys to the WPI alumni who completed the IQP through either the WCPC or the on-campus projects. For online surveys, the team will use Qualtrics, a web-based software for surveys. For interviews, the team will conduct these in-person at a time with specified interview questions for each individual and anticipate the duration to be between 15-30 minutes. All interviews will be conducted via video call (ex.Zoom)

Risks to study participants: Participants may feel uncomfortable with the survey or interview questions.

Benefits to research participants and others: By participating in this study, you would be helping our team be more informed for when we suggest improvements for the IQP experience of future WPI students. Furthermore, by participating we can share your experiences and the impact of your previous project(s) on the community. The results of this study will be shared through a written report and an interactive webpage.

Record keeping and confidentiality: The responses from an interview will be recorded into a word document with essential personal information: name and position in the organization that the participant belongs to. Your interview may, with consent, be either audio or video recorded. The survey results will be stored in an excel sheet for further analysis. Records of your participation in this study will be held confidential so far as permitted by the law. However, the study investigators, the sponsor or it's designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you without your consent.

Student team: gr-wcpc20@wpi.edu or faculty advisors, as listed above

IRB Manager: Ruth McKeogh, Tel. 508-831-6699 Email: irb@wpi.edu

Human Protection Administrator: Gabriel Johnson Tel. 508-831-4989 Email: gjohnson@wpi.edu

Your Participation in this research is voluntary. Your refusal to participate or decision to stop participating will not result any penalty to you. The project investigator (the WPI student team) has the right to stop or postpone the procedures at any time they see it is necessary.

By signing below, you acknowledge that you have been fully informed and agree to be a participant for the study described above. You are also consenting to the statements you check below. <mark>Please make sure that your questions about the study are fully answered before signing.</mark> You are entitled to retain a copy of this consent agreement.

Please answer the following statements:

- I consent to my name/company being referenced on the WCPC's website and in the team's end deliverables; the deliverables consisting of an interactive webpage and written report.

  ❑ Yes

  ❑ No

- I consent to an audio recording being taken at my interview.

  ❑ Yes

  ❑ No

- I consent to a video recording being taken at my interview

❑ Yes

❑ No

_____   Date:_____

Study Participant Signature

_____

Study Participant Name (Please print)

_____   Date:_____

Signature of Person who explained this study