

WPI

Interactive Qualifying Project: Worcester Art Museum: Creation of a Green Café

An Interactive Qualifying Project submitted to the faculty of
Worcester Polytechnic Institute in partial fulfillment of the
requirements for the Degree of Bachelor of Science

Submitted By:

Katherine Coutu
Tynan MacLeod
Tristan Richardson
Samuel Teatum

Submitted To:

Project Advisors

Prof. Melissa Belz
Prof. Corey Dehner

Project Sponsors

Katrina Stacy, Worcester Art Museum
Marcia Lagerwey, Worcester Art Museum

December 13, 2013

ABSTRACT

The Worcester Art Museum (WAM) is looking to tap into the large population of college students in Worcester, MA. The goal of our project was to identify what the WAM can do to increase attendance of 18-21 year olds and help the museum determine the feasibility of a sustainable cafe that would appeal to this demographic. We interviewed museum staff and surveyed visitors and local college students to understand what they like about the WAM, what recommendations they have, and what components of sustainability they found important. Our research revealed a need for advertising and programming geared towards college students, as well as a desire for sustainable components in the cafe. We recommend new café design concepts and options for specialized programming, advertising, and extended hours.

ACKNOWLEDGMENTS

Our team would like to thank the following individuals for their continued support:

Corey Dehner, Project Advisor, *Assistant Teaching Professor, WPI IGSD*
For your support, aid and guidance throughout our entire project experience

Melissa Belz, Project Advisor, *Assistant Teaching Professor, WPI IGSD*
For your assistance, persistence and patience throughout our entire project experience

Katrina Stacy, Project Sponsor, *Assistant Curator of Education, Worcester Art Museum*
For your consistent guidance and support of our team's work and efforts

Marcia Lagerwey, Project Sponsor, *Head of Education, Worcester Art Museum*
For your support and aid throughout our team's project

Adam Rozan, *Director of Audience Engagement, Worcester Art Museum*
For continued enthusiasm and support for our project and for offering new and innovative ideas

Monica Elefterion, *Marketing and Public Relations, Worcester Art Museum*
For support through the printing of marketing materials and signage

Elaine Cowan, *Registration Administrator, Worcester Art Museum*
For daily support through printing of surveys and regular aid

Elizabeth Tomaszewski, *Sustainability Coordinator, WPI*
For assistance in contacting and reaching out to local colleges and sustainability groups

Erin DeSilva, *Instructional Technology Specialist, WPI*
For technological support with Qualtrics Research Suite

Christine Girouard, *Associate Director of Student Activities, WPI*
For leveraging contact with local colleges student activities offices

WPI Green Team, Students for a Just and Stable Future, WPI Sustainability Task Force
For relaying survey information to local colleges contacts and student organizations

Worcester Art Museum Staff Interview Participants
For taking part in our staff interviews and majorly contributing to our research

Worcester Art Museum Visitor Survey Participants
For taking our onsite survey and contributing to our research

Worcester College Student Survey Participants
For taking our online survey and contributing to our research

Worcester College Student Leaders
For passing our survey along to their student organizations

EXECUTIVE SUMMARY

Museums hold a strong cultural and social importance in their communities. They serve as a conduit for making art and culture accessible to different audiences, play a key role in education, provide insight to the past, and maintain humanity's treasures for future generations. The Worcester Art Museum (WAM), one of the largest art museums in New England, believes that their institution is currently underutilized by local 18-21 year olds, a major demographic in Worcester. The museum is also in the process of implementing a sustainability initiative, and is looking for ways to apply that to the museum café. As members of the 18-21 age group are often passionate about sustainability, the museum believes that a new sustainable café could help them attract more college students. Thus, this project had two primary focuses: (1) Assessing what changes to the WAM would increase attendance of the 18-21 year old demographic in the city of Worcester to the WAM, and (2) Assessing what sustainable components of a sustainable museum café could be implemented to attract this demographic.

Methodology

How can the WAM better attract the 18-21 year old demographic and what components of a sustainable museum café would be most appealing to that demographic? In order to answer these questions, we addressed the following objectives:

Identify the museum staff's opinions of the Worcester Art Museum's efforts to attract the 18-21 year old demographic and suggestions for improvements.

We first took into consideration the opinions and expectations of museum staff on the WAM's current practices using semi-structured interviews. We conducted interviews with 12 full and part-time staff members from a range of different departments. We asked the staff their opinions on: 1) how the museum currently works to attract 18-21 year old visitors, 2) the museum café and its potential for attracting college students, and 3) the implementation of sustainability in the museum café.

Identify the expectations of current museum visitors and their satisfaction or desire for museum improvements to increase attendance to the museum and its café.

To better understand current visitor expectations, satisfaction levels, and desired improvements, we surveyed visitors in the lobby of the WAM. We chose surveying because it provides a

predetermined set of questions, which allowed us to more easily compare large amounts of quantitative data. We worked with our project sponsor to develop a set of questions that made our survey as streamlined as possible while still covering the necessary topics. We chose to build, distribute, and analyze our survey using a computer program called the Qualtrics Research Suite. Ultimately, our survey had a 12.8% response rate for the days we surveyed.

Identify the preconceptions and biases of 18-21 year old potential museum visitors to determine what might increase their interest in the Worcester Art Museum.

In order to understand the interests of the WAM's potential 18-21 year old audience, we surveyed local Worcester college students. We identified seven schools to survey based on the school's proximity to the museum and full time student enrollment numbers (listed in Figure 12, Appendix A). We utilized resources including social media, colleges' on campus organizations, and faculty to get our survey distributed internally on the selected campuses. We also created 150 posters advertising our survey and distributed them around the campuses of the selected schools. This process yielded over 300 responses.

Identify the components of sustainability to be added to the Worcester Art Museum café that would be most successful in increasing visitor attendance.

Both the museum visitor and the college student surveys asked questions on how important each demographic found sustainability and what components of sustainability could be added to the WAM café to better attract that demographic.

Findings and Recommendations

After analyzing our data and compiling our findings, we formed several recommendations for the museum.

We recommend that the WAM advertise the café, events, and promotions that cater to college students using social media and direct communication with college students.

We discovered that Worcester college students are not well informed about the existence of the WAM. Out of 302 college students surveyed, 39% had never been to the museum galleries. Of the 116 college students that have not visited the museum, 25% never visited because they were completely unaware of the museum. Eleven of the twelve staff members interviewed (out of 66 full time employees) believe that more could be done to advertise on college campuses. We

found that the students that have attended the museum enjoyed it, but 83% of the students we surveyed did not even know about the museum, and so we recommend the museum should greatly increase on campus advertising to this demographic.

We recommend that the WAM extend the hours of the Café, lessen prices, and offer a wider range of food options.

Our findings show that one of the most needed changes to the café, according to both museum visitors and college students, is an extension of the café hours. Almost 50% of the museum visitors and 32% of college students surveyed who attend the café said that they would like to see the café open later. Secondly, we found that both the museum’s existing visitor base and potential college age visitors would be interested in a greater variety of menu items, with lower-priced options available.

| Population Surveyed | Lower Prices | More Variety |
|-------------------------------------|---------------------|---------------------|
| Total WAM Café Customers (35) | 46% (16) | 37% (13) |
| Students who attended WAM Café (48) | 51% (25) | 38% (18) |

Figure 1: WAM Cafe Survey Results

Most existing café customers expressed great satisfaction with the current menu items, finding them to be of “good quality.” However, as one visitor said, “It would be nice to have one or two lower cost entree choices.” Out of the survey of existing café customers, 46% said they would like to see lower prices in the café as did a full 51% of college students surveyed.

We recommend the WAM offer night programming, extended hours and events geared toward college students.

From the results of our surveys and interviews, we determined that the current programs and events offered by the WAM are not appealing to college students. Offering night programs and events directed towards 18-21 year olds would be effective in attracting that demographic to the WAM. We recommend that the museum offer programs and events that target college students, and we recommend additional research be completed to identify specific events that would appeal to this demographic.

Cycle through exhibits more frequently

We found that college students and current museum visitors are not satisfied with the rotation of artwork through the WAM, and would like to see a greater number of modern art exhibits. Thus we recommend the museum cycle through exhibits more frequently and provide more modern art exhibits in its current temporary gallery space.

Café layout options

From our visitor survey, we found that the current WAM café audience appreciates the café and its atmosphere. Conversely, we found that the café is not currently a space designed to attract college students. Our college student survey shows that of WAM's target demographic of 18-21 year olds, only 3.2% of those surveyed viewed it as a nice place to spend time or study. Over half of the museum employees that we interviewed agreed that the café needed to be changed if it were to appeal to college students. As such, we present three different options for ways to continue to improve the museum café and potentially serve both audiences.

Option 1: Discontinue table service entirely; offer a more comfortable space.

The primary intention of this option is attracting college students. As discussed above, the café does not currently appeal to college students, and many of the college students surveyed said it feels “more like a restaurant than a café.” We recommend the space be opened up by removing the constricting single entrance, so that customers may enter and exit freely. The table service should be replaced with a counter from which food may be ordered. We also recommend an overhaul in décor and atmosphere of the café to make a more hip and modern environment to attract college students. The downside of this recommendation is that while these changes may attract a new audience, it may alienate the café's current clientele.

Option 2: Keep the current café; replace the SIP cart with a permanent, open lobby café.

The current café appeals to its current audience, but would need to be completely redesigned in order to appeal to the college student demographic. This option allows the museum to keep the current restaurant-style café open in order to retain the current audience. This option replaces the portable lunch cart in the lobby (a.k.a. the SIP cart) with a permanent café counter and seating area with a more open, contemporary, and welcoming atmosphere and a layout that encourages longer visits and use as a study space (perhaps with music and couches) in order to appeal to

college students. The drawback of option 2 is that it requires the construction of a new café space, while still maintaining the old café as well, which could be prohibitively expensive.

Option 3: Create a “hybrid” café to appeal to both demographics in the existing space.

We explored the possibility of creating a café in the existing space that had two sections: one formal dining section and one casual section with counter service, to appeal to both demographics. We ultimately decided this is not suitable for the current space, which is too small to allow both environments to comfortably coexist. Therefore we do not recommend this over the other two options.

Implement Sustainability into the museum café.

We found that both students and museum visitors have a strong interest in sustainability. Because of the overwhelming interest in sustainability and its popularity among the target demographic of 18-21 year olds, we recommend that the museum café utilize sustainability as a means of attracting college students and new visitors. All the suggested components of sustainability were found to be widely supported, but our data shows that the incorporation of locally grown food, recycled plates, cups, and paper materials, and energy efficient lighting were the most popular with survey participants and museum employees. Therefore, we recommend these components be incorporated into the café. We recommend a cost analysis be completed on these components and that the WAM implement each component that is financially feasible.

Conclusion:

By implementing these recommendations, the museum can improve its appeal to the younger demographic and reinforce its position as a vital cornerstone of Worcester’s culture for years to come.

AUTHORSHIP

Katherine Coutu: Katherine’s main contributions to this project included compilation and organization of final written work. She focused on organization of meetings, timelines and future planning to ensure the project was on track. Katherine also fervently communicated with local colleges and universities for distribution of the College Student Survey and directed analysis of College Student Survey data.

Tynan MacLeod: Tynan’s responsibilities included compilation and analysis of all interview data and findings. Along with completing outline and presentation work, Tynan took charge of communication with local sustainability coordinators and organizations to spread information about our survey to the widest audience. Finally, Tynan directed and completed our team’s video summarizing our experiences and successes.

Tristan Richardson: Tristan used his communication skills in completing or delegating all staff member interviews and collecting important opinions and data. Tristan also spearheaded the writing and review of the College Student Survey to ensure completeness and clarity of all questions. Following the survey, Tristan reviewed and analyzed all results.

Samuel Teatum: One of Samuel’s main responsibilities was the Museum Visitor Survey. Not only did Sam lead the writing, reviewing, and testing of the Visitor Survey, he also took charge in distributing the survey to visitors of the museum in person on a daily basis. Sam collected this data and analyzed the results.

The team came together to discuss our findings and discover what recommendations we would make to the museum. We all worked on the final IQP report and presentation of recommendations to members of the museum staff.

| Section of Final Report | Responsible Team Member |
|--------------------------------|--------------------------------|
| Abstract | Katherine |
| Acknowledgements | Tynan |
| Executive Summary | Sam |
| Authorship | Tynan |
| Table of Contents | Katherine |

| | |
|--|---------------|
| Table of Figures | Katherine |
| Introduction | Tristan |
| 2.1.1 Museum Funding | Katherine |
| 2.1.2 Museum Changes | Katherine |
| 2.1.3 Museum Cafes | Tristan |
| 2.2.1 Sustainability on College Campuses | Tristan |
| 2.2.2 Implementing Sustainability | Tynan |
| 2.2.3 Utilizing Sustainability as a Tool | Tynan and Sam |
| 3.1 Objective 1 | Katherine |
| 3.2 Objective 2 | Sam |
| 3.3 Objective 3 | Tristan |
| 3.4 Objective 4 | Tynan |
| 3.5 Objective 5 | Tynan |
| List of References | Katherine |
| Appendix A | Tristan |
| Appendix B | Katherine |
| Appendix C | Sam |
| Appendix D | Tristan |
| Appendix E | Tynan |
| Appendix F | Katherine |

TABLE OF CONTENTS

| | |
|--|------|
| Abstract..... | ii |
| Acknowledgments..... | iii |
| Executive summary..... | iv |
| Methodology..... | iv |
| Findings and Recommendations..... | v |
| Conclusion:..... | viii |
| Authorship..... | ix |
| Table of Contents..... | xi |
| List of Figures..... | xiv |
| Introduction..... | 15 |
| Background..... | 17 |
| 2.1 Museums..... | 17 |
| 2.1.1 Museum Funding..... | 18 |
| 2.1.2 Museum Changes..... | 19 |
| 2.1.3 Museum Cafes..... | 20 |
| 2.2 Sustainability..... | 21 |
| 2.2.1 Sustainability on College Campuses..... | 23 |
| 2.2.2 Implementing Sustainability..... | 23 |
| 2.2.3 Utilizing Sustainability as a Tool to Improve Image..... | 25 |
| Methodology..... | 27 |
| 3.1: Objective 1..... | 27 |
| 3.1.1 Interview Staff..... | 28 |
| 3.1.2 Qualitative Analysis..... | 29 |
| 3.1.3 Quantitative Analysis..... | 29 |

| | |
|--|----|
| 3.1.4 Use of Museum Resources: Records and Archives | 30 |
| 3.2: Objective 2..... | 30 |
| 3.2.1 Survey Current Attendees | 31 |
| 3.3: Objective 3..... | 33 |
| 3.3.1 Survey Local College Students:..... | 34 |
| 3.4: Objective 4..... | 37 |
| 3.4.1 Interview Staff | 38 |
| 3.4.2 Survey Current Visitors | 38 |
| 3.4.3 Survey Potential Visitors | 38 |
| 3.5: Objective 5..... | 38 |
| 3.5.1 Report and Presentation of Results | 39 |
| Findings and Recommendations | 41 |
| 4.1: Recommendation 1 | 41 |
| 4.2: Recommendation 2 | 42 |
| 4.3: Recommendation 3 | 44 |
| 4.4: Recommendation 4 | 49 |
| 4.5: Recommendation 5 | 50 |
| 4.6: Recommendation 6 | 51 |
| 4.7: Recommendation 7 | 52 |
| Conclusion | 54 |
| References..... | 55 |
| Appendix..... | 59 |
| Worcester College Proximity and Population Information | 59 |
| Worcester Art Museum Staff Interview Form | 59 |
| Worcester Art Museum Visitor Survey | 61 |

| | |
|--|----|
| Worcester College Student Survey | 64 |
| Overall Project Timeline..... | 69 |

LIST OF FIGURES

Figure 1: WAM Cafe Survey Results vi

Figure 2: Map of colleges within a 4 mile radius of the Worcester Art Museum 34

Figure 3: Worcester Art Museum Cafe: Photo taken by Tristan Richardson 42

Figure 4: WAM Cafe Survey Results. 43

Figure 5: WAM cafe visitors rating of overall experience 44

Figure 6: College Student Survey Results: "Have you ever been to the WAM cafe?" 45

Figure 7: WAM Lobby SIP Cafe Cart 47

Figure 8: Worcester Art Museum Cafe: Photo taken by Tristan Richardson 48

Figure 9: College student responses; Museum Improvements 49

Figure 10: Museum visitor responses; Museum Improvements 51

Figure 11: Sustainability Components Overall Survey Results..... 52

Figure 12: Worcester College Population and Proximity Information 59

Figure 13: Worcester Art Museum Staff Interview Form 61

Figure 14: Worcester Art Museum Visitor Survey 63

Figure 15: Worcester Art Museum College Student Survey 66

Figure 16: Worcester College Contact Information..... 68

Figure 17: Overall Project Timeline 69

INTRODUCTION

Museums are of great import to the American society due to their wealth of educational resources and collections, welcoming over 850 million visitors per year (American Alliance of Museums, 2013). Museums also contribute significantly to the national economy and play a crucial educational role in communities. Art museums specifically serve their communities as a showcase of history and innovation and “play a critical part in cultural and economic vitality” (Worcester Art Museum, 2012). The director of the Worcester Art Museum, Matthias Waschek wrote, “I want people to fall in love with the art. When you fall in love, you think about something that is bigger than you are, bigger than your small world, bigger than what you are feeling at that moment” (Dobrzynski, 2013).

In the Worcester, Massachusetts community, the Worcester Art Museum (WAM) serves as a rich, cultural attraction. The museum holds “a wealth of our world history” (Worcester Art Museum, 2012) in “one of the nation’s great collections” (Smee, 2011). The Worcester Art Museum is the second largest art museum in New England and has a decorated history, which includes becoming the first museum in the United States to purchase the works of Claude Monet in 1910 and becoming the first museum to bring a medieval building to America in 1927. Unfortunately, the museum staff feel that the museum “should be a landmark, but it is almost like secret knowledge” (Worcester Art Museum, 2012).

Despite the Worcester Art Museum (WAM) making great efforts to attract new demographics through innovative exhibits and community events, Katrina Stacy, Assistant Curator of Education at the Worcester Art Museum, and other museum employees felt that the museum was underutilized, specifically by the 18-21 year old demographic (Stacy, 2013). In addition to their efforts to attract new audiences, the museum has also implemented an institution wide movement toward sustainability that they were interested in expanding into their museum café.

Consequently, for our project, the WAM tasked us with researching what the Worcester Art Museum can do to increase museum attendance of 18-21 year olds, who represent a large portion of the Worcester community, and what components of a sustainable museum café would be most appealing to this demographic. We answered this question by conducting interviews and surveys with museum staff, potential visitors, and current visitors. We distributed surveys at the museum

and at colleges within 4 miles of WAM including Assumption College, Becker College, Clark University, College of the Holy Cross, Quinsigamond Community College, Worcester Polytechnic Institute and Worcester State University. We analyzed and compiled all resulting data to create our recommendations for the museum's best actions for developing a sustainable café and increasing 18-21 year old attendance.

In December 2013, we presented our results and recommendations to WAM staff members. We provided a written analysis of the findings to the museum and the group of Worcester Polytechnic Institute students who will continue working with WAM on the implementation of the proposed changes using our findings and recommendations.

In chapter 2 we explore the social importance of museums, examine current problems museums are facing and possible solutions. We also clarify concepts of sustainability and explain how businesses can become sustainable. In chapter 3, we discuss our methodological approach to achieving our five project objectives. In chapter 4, we present our findings and recommendations and in the last chapter, we offer our final conclusions.

BACKGROUND

2.1 Museums

Museums hold a strong cultural and social importance in the communities in which they serve. There are over 850 million visitors to American museums every year, which is more than attendees of all major sporting events and theme parks combined (American Alliance of Museums, 2013). Museums directly contribute more than \$21 billion a year to the national economy and more than \$2 billion a year to education (American Alliance of Museums, 2013). Museums serve as a medium for making art and culture accessible to different audiences. Museums play a key role in education while also providing insight to the past and maintaining humanity's treasures for future generations (International Council of Museums, 2012). Museums serve as both a product and an agent for social change. Museums look to contribute to their communities through cultural experiences as well as education. They are "purveyors of ideology and of downward spread of knowledge to the public, thereby contributing to an historical process of democratization" (Kaplan, 1994). In this way, museums serve their communities socially, politically, educationally and financially. The Worcester Art Museum (WAM) serves this purpose in the community of Worcester, Massachusetts.

The Worcester Art Museum would like to discover what new and innovative techniques they can use to increase interest and attendance in the museum., The Worcester Art Museum has two primary interests: (1) Increasing museum attendance of the 18-21 year old demographic in the city of Worcester, and (2) Designing and building a sustainable café to serve as a popular workspace, and meeting place for this population.

Museums are centered around their visitors so they must cater to and serve all visitor needs (Dean, 1996). Although museums are timeless repositories, they must also change and adapt to the changing needs of the communities in which they exist. The Worcester Art Museum believes that their institution is underutilized by local 18-21 year olds (Stacy, 2013). Consequently, the museum is looking to enhance their current connections and relations with the Worcester community and build on the synergy of the twelve colleges and universities in Worcester (Worcester Art Museum, 2012). College students are often regulars at local cafes. Cafes offer a comfortable, convenient and calm environment that is often conducive to student learning. For

example, cafés have food and beverages available, something libraries often do not have, and may provide patrons with free internet access (Hennessey, 2012). In addition, there has been increasing awareness in sustainability measures on college campuses over the past decade (Environmental and Energy Study Institute, 2012). Because of college students' tendency toward cafes and sustainability consciousness, the Worcester Art Museum is interested in extending their institution's sustainability motives into their cafe as a means of promoting sustainable processes as well as increasing and maintaining attendance of college students in Worcester. We have compiled research on various museums as well as sustainability in order to understand relevant background information to better frame our project.

In section 2.1.1, we discuss changes in museum funding, changing visitor demographics and efforts by museums to adapt to these changes. In section 2.2, we explore the concept of sustainability, the sustainability movement, and ways in which businesses can become sustainable. In sections 2.2.3 and 2.2.4, we contemplate the various ways businesses can implement and utilize sustainable practices, and the benefits of doing so.

This research into the subject of museum funding will enable us to better understand which strategies of improving attendance we should recommend to the WAM. It will also help us determine which components of sustainability we should recommend for their café.

2.1.1 Museum Funding

As a result of the economic downturns during the Great Recession of 2007-2009, large donations from sponsors and corporations to museums have declined (Rohter, 2010). Also, many museums find themselves underfunded because federal funding of museums has been decreasing. The National Endowment for the Arts (NEA), one of the major independent federal agencies in the U.S. that supports artistic endeavors, including museums, has had their budget significantly reduced. Between 2010 and 2012, the National Endowment for the Art's programmatic support for artistic endeavors has decreased by more than 12% (National Endowment for the Arts, 2010, 2012). The real impact of the federal grants is that the state and local governments usually award their grants to the institutions that the federal government has awarded their grant to. As federal funding has diminished significantly in the past two decades, so have state and local funding programs (Hughes, 1999). Museums have had to turn to creative revenue sources and new ways

to increase admission income such as the enhancement of the “museum experience” in order to attract and retain visitors (Rohter, 2010).

2.1.2 Museum Changes

In an effort to increase attendance numbers and relieve funding challenges, museums have begun to invest in various methods to attract new or maintain current patrons. Some have utilized social events as a method of attracting visitors and increasing museum revenue (Alzheimer's Café, 2011). These events are designed as a way for museums to give back to their communities, maintain their relevance in the changing times and engage visitors (Barry, Henze, Lamb, & Swank, 2010). Additionally, numerous museums have worked to increase the interactivity and multicultural appeal of the exhibits (Olsen, 2013). Other museums have also opened up museum cafes to attract new visitors.

Many museums use social events not only to increase visitor attendance, but also to benefit their community and strengthen their relationships with their patrons. An example of this type of event is found at the Children’s Museum in New Hampshire. This museum holds a monthly social gathering in their café and invites community members who have been diagnosed with Alzheimer’s (Alzheimer's Café, 2011). These events benefit the diagnosed community members as well as the museum itself. The patrons feel that “having a regular place to go and meet others in a purely social setting each month can provide a welcome destination with an understanding community of people” (Alzheimer's Café, 2011). In this way, the Children’s Museum is using its café as a social meeting place for members of the community and encouraging museum attendance (Alzheimer's Café, 2011).

Additionally, many museums are expanding their appeal to multicultural audiences in order to maintain and increase museum attendance. The growing population of minorities is projected to reach one half of the total population by 2034 (American Association of Museums, 2008; see also Howard, 2007). Communities and their cultural institutions need new and better ways to promote integration and develop understanding across cultures (American Association of Museums, 2008). Museums have the opportunity to learn from and grow with the communities in which they operate (Howard, 2007). One way in which museums adapt to their audiences is through their exhibits. Many museums have made the shift from *static and didactic* exhibit models to *constructivist*, an engaging and interactive exhibit design, in order to attract more

families. This shift includes activating the learning capabilities of the visitors through hands on activities and interactive learning (Falk, Dierking, & Foutz, 2007)

The Smithsonian National Museum of the American Indian is an example of one museum offering an innovative approach to exhibit design and multiculturalism. Aaron Kagan of the Boston Globe reported in 2013 on the Mitsitam Café. The museum's successful café features a culturally diverse menu of dishes made by using techniques of indigenous people of North and South America (Kagan, 2013). This café offers an experience to its customers by inviting them into “regions” of Native American Indian cultures such as the Northern Woodlands, South American, Northwest Coast, Mesoamerican, and the Great Plains where they feature a carving station of turkey and baskets of corn bread made with blue corn (Kagan, 2013). Beyond the opportunity to embrace diversity through food, cafés have proven a successful addition to museums in several ways.

2.1.3 Museum Cafes

Museum cafés have been very successful in enhancing the overall museum experience (Rohter, 2010). In this section, we review some examples of how museums have used cafés to attract new museum visitors. For example, the Museum of Modern Art (MOMA) in New York City has been following the recent, large museum trend of adding cafés that offer fine dining to compliment the fine art. The MOMA sought to have a dining experience that is equal to the experience of the museum and its collection (Rohter, 2010). Many museums are choosing to utilize their cafés as more than just a place to eat not only because of its recent trending qualities in large museums, but also because of its means to increase museum revenue, increase visitor traffic and prolong visitor stays (Rohter, 2010). In one exploratory study done in collaboration with the Journal of Hospitality and Leisure Marketing found that “participants agreed that having a place to “linger” and visit with other people would further enhance the sociable aspect of the art museum experience, and it would increase the amount of time they spent at the facility” (Geissler, 2006).

With the expansion of cafes in many modern museums, some issues of waste have come to the forefront. For financial, social and environmental stewardship reasons, many museums are working toward reducing the amount of food that is thrown away by patrons and employees in their cafes (Cawthray, 2012).

“Food waste is not only a misdistribution of global resources but is a waste of land, water, human labour, natural resources and energy” (Cawthray, 2012). The Garden Museum in London, England works to make proportionate batches of food in order to make sure that it is all consumed. This allows for a decreased amount of waste by employees or customers and any leftover can be appropriately disposed of, either stored in the kitchens for later use or disposed of by a licensed contractor which can then be purchased by farmers (Cawthray, 2012).

2.2 Sustainability

Museums are well placed advocates for environmental sustainability because they are constantly changing and finding new and better ways to reduce their impact on their environments and resources (Museums in a Changing World, 2012).

Many museums, including the Worcester Art Museum, have implemented components of sustainability into their institutions. However, the term “sustainability” has many different definitions, depending on the field in which it is used. For example, in the field of economics, it is defined as “the maintenance and improvement of human standards” (Toman, 2013). In sociology, sustainability describes the ability of a culture or group of peoples to maintain their ancestral way of life and resist assimilation by the greater meta-culture. In the business world, sustainability simply means “the ability to continue doing the same thing without changing behaviors” (Collin, 2009). In 1987, the U.N.’s Brundtland Commission defined sustainability as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). This definition forms one of the cornerstones of the modern sustainability movement, and is respected worldwide (Edwards, 2005, 17).

Today, however, the phrase is colloquially used to refer to “the preservation of the status and function of ecological systems” (Toman, 2013). This definition is commonly used because it is a fixed, measurable quantity, and thus offers a standard to which sustainable practices can be compared.

The concept of sustainability is intimately connected with another oft-used term, “green.” Green is a frequently used, however, vague term. The common thread among the various definitions is that to be green means to be environmentally-friendly, or to be better for the environment than

the non-green alternative. The terms sustainable and green both deal with being environmentally friendly, while sustainability has more of a societal responsibility involved with the term.

The concepts of green and sustainability have permeated our society on a very deep and grand scale, and both initially rose out of the environmentalism movement. The modern environmental movement began in the 1960s, with the release of *Silent Spring*, Rachel Carson's famously controversial and thought-provoking book on the dangers of pesticides (Pak, 2011). *Silent Spring* intrigued the public by drawing parallels between the effects of the pesticide DDT with strontium-90, the radioactive isotope in nuclear fallout.

Riding on the new wave of public interest, the 1960s and 70s were a landmark era for environmental legislation, with the notable creation of the Wilderness Preservation Act and the Environmental Protection Agency (Pak, 2011).

Public interest in environmental matters waned in the 1980s as the Cold War wore on but in 1987, the Brundtland Commission released their famous report, *Our Common Future*, which thrust the concept of sustainability into the public eye (Edwards, 2005). *Our Common Future* received international recognition, and is commonly attributed as the definitive spark that ignited the "Sustainability Revolution," by "providing a framework for concerted action to protect the earth's life support systems while promoting both economic and social justice goals" (Edwards, 2005, 17). Gathering supporters from the remnants of the environmentalism movement and others, the sustainability movement grew support internationally through the next decade, finally gaining a surge of recognition from a younger generation with the launch of Al Gore's renowned and provocative 2006 documentary, *An Inconvenient Truth*, which brought global warming into the public eye and prompted a greater societal focus on sustainability.

In recent years, support for the sustainability movement has been growing, especially in the 18-21 year old age demographic. In a survey conducted in July 2013, by the Benenson Strategy Group, a prominent research and consulting firm, 66% of younger voters (out of a random sampling of 600) were in support of action being taken against climate change (Levin, 2013). The interest of this college-age demographic in sustainability can easily be seen through growing college organizations.

2.2.1 Sustainability on College Campuses

In recent years, colleges and universities have been expanding their commitment to sustainable practices. This increase in sustainability initiatives on college campuses is based upon the fact that the majority of college students today are “quite concerned about the wasteful consumption of natural resources and the destruction/pollution of the environment” (Emanuel, 2011, 79-92). The current college student demographic is passionate about sustainability. Charlene Easton, director of the sustainability office at the University of British Columbia, said “[We] try to create a campus-wide sustainable environment...” and “[the] students are absolutely excited by it” (Easton, 2009). During a survey conducted at colleges in Alabama and Hawaii, 57% of students in Alabama and 69 % in Hawaii answered that the “[Universities] should make sustainability a priority in campus planning, development, and day-to-day operations “(Emanuel, 2011). The majority of students surveyed, 60% in Alabama and 72% in Hawaii, said that they would be willing to participate in campus organizations, events and initiatives, on and off campus, to support the environment and sustainable practices (Emanuel, 2011). Increasing the number of on-campus organizations and initiatives allows a larger amount of information on the subject to be spread throughout the student population.

In communities where the population is primarily comprised of college educated residents, public universities face great community pressure to invest in sustainable practices in communities where the population is significantly comprised of college educated residents (Stafford, 2011). Communities containing a large population of highly educated residents are more likely to patronize or visit sustainable establishments, according to Dr. Stafford, Professor of economics and Director of the public policy program at the College of William and Mary (Stafford, 2011). With the abundance of colleges in Worcester, the Worcester Art Museum is searching for a way to incorporate sustainable practices within their institution and utilize sustainability as a tool to appeal to the 18-21 demographic.

2.2.2 Implementing Sustainability

In expanding the WAM’s awareness of and focus on sustainability, the institution hopes to include components of sustainability in all aspects of the WAM, including a large emphasis on the café which will appeal to the common 18-21 year old. In the next section we discuss more on the terminology of sustainability as well as many ways in which current companies are working

to implement sustainability components. With society's increasing concern for the environment, many companies are implementing sustainability through reduction of energy use, conservation of water, or use of organic or locally grown foods (U.S Small Business Administration, 2012).

Many companies claim to practice sustainability under the notion of a green business, but do not always comply with regulations or standards. These companies fail to fully embrace the concept of sustainability throughout their processes and business. For example, an organization that claims to be sustainable because it recycles could still release dangerous amounts of carbon emissions. "Businesses start to notice [important societal] causes when [those causes] start to affect profits," (Collin, Encyclopedia of Sustainability, p. 198, 2010) and thus the pressure on businesses to label themselves as sustainable or green is particularly large in the current sociopolitical climate. Greenwashing, the practice of claiming to be green without actually being green, is becoming increasingly widespread (Pearce, 2012).

Because of the rampant spread of greenwashing, it can be difficult to determine if a business is truly sustainable or just claiming to be (Pearce, 2012). While it is true that the practice of making the data of a businesses' environmental impact publicly available has been on the rise in recent years, "the environmental reports released by these businesses are generally poor tools for communication" (Elkington, 1996). The best way to determine if a business is sustainable is for it to receive certification from a reputable organization (U.S Small Business Administration, 2012). For example, certain federal agencies, such as the Environmental Protection Agency and the Small Business Administration; not for profit organizations, such as the National Wildlife Federation, the Forest Stewardship Council, and the Sustainable Business Council run programs certifying that businesses meet certain environmental standards (U.S Small Business Administration, 2012). Perhaps the most well-known of these is the Environmental Protection Agency's EnergyStar program, which identifies energy-efficient products and certifies the business that produces them. Other such government programs include the USDA's Organic and Bio preferred recognition programs, and the EPA's WaterSense program, which identifies businesses that conserve water (U.S Small Business Administration, 2012). These government programs often include some sort of additional incentive for meeting their requirements, such as offering loans and funding opportunities for using alternative energy sources (U.S. Department

of Energy, 2013). As such, implementing sustainable practices can even be advantageous for businesses. There is a wide range of such methods that can be adopted by businesses.

2.2.3 Utilizing Sustainability as a Tool to Improve Image

In addition to having important utility for environmental preservation, sustainability has proven to be a useful tool for improving an organization's image and creating additional revenue.

Incorporating sustainability into a museum also offers a way for the museum to educate its visitors on the importance of sustainability. There are several ways of incorporating sustainability into a business.

Although some aspects of improved sustainability can cost more, incorporating sustainable components into an organization can, at times, lower costs for companies while simultaneously yielding increased returns (Nidumolu, Prahalad, & Rangaswami, 2009). A case study with FedEx found that the company has been able to cut down its consumption of fuel by 54% while maintaining their level of commercial services (Nidumolu, Prahalad, & Rangaswami, 2009). FedEx was able to achieve this by switching their delivery vehicles out with newer, more fuel efficient vehicles. While it was an expense at first, the switch in vehicles positively affected the business' bottom line. The earlier a company begins the process of becoming sustainable, the farther ahead of competitive businesses it will be, regarding the level of sustainable practices, when government begins to enforce legislation on sustainability practices in businesses (Nidumolu, Prahalad, & Rangaswami, 2009).

Along with cutting costs, sustainability can give a company a competitive edge over a similar, non-sustainable company. For example, Margaret Steen stated, in the Stanford Graduate School of Business Journal, that "Some...consumers will pay more for the green product, though even those who won't [pay more] may choose the green product over a comparably priced non-green one" (Steen, 2009). Even a person who is not particularly passionate about sustainability may choose a sustainable product over a comparably priced non-sustainable product, if there is no decrease in functionality. The majority of consumers are aware of the importance of sustainability. This is especially true among college students. In a survey of students from three public college campuses, two colleges in Alabama and one college in Hawaii, between 95% and 92% of students answered that they were aware of the importance of working for an environmental cause (Emanuel, 2011).

Companies are beginning to identify specific areas where they can apply sustainable practices to their organization. Since identifying these areas, companies have realized that their “economic goals can be complemented by environmental and social targets” (Museums Australia, 2003). Museums are beginning to take on an educational role in the sustainability movement informing their communities of the differences and importance of sustainable practices compared to unsustainable practices. “Museums have a role in building collaborative relationships and using education and research to raise awareness, to encourage the development of new skills and the ability to embrace and adapt to change” (Museums Australia, 2003). This is also a marketing strategy to publicly display their commitment to addressing cultural and societal issues. The educational and marketing goals can be achieved through museum activities. Museums have an integral role in promoting and implementing sustainability in society” (Museums Australia, 2003).

A cafe is one possible outlet through which a museum can embrace their commitment to sustainability. Museums Australia, the leading advocacy organization for professional practices in museums, tells us that a sustainable cafe not only illustrates the museums goal in adopting sustainable practices, but can also be used as a way to educate the community on the subject (Museums Australia, 2003) and to attract a wider range of patrons. A café is a particularly effective way to illustrate the museums efforts in adopting sustainability due to the fact that cafes are becoming frequently visited establishments, especially among the younger demographic. The cafe has become an alternative, and increasingly popular, meeting place for the youth of society (Lægran, 2002). The Worcester Art Museum, in seeking to expand its commitment to sustainable business practices, is looking to implement sustainable practices into its cafe in order to increase its reach to the 18-21 Worcester demographic. In chapter 3 we will describe our methods of working with the Worcester Art Museum to achieve their goals for our project.

METHODOLOGY

The purpose of our project was to determine “what the Worcester Art Museum (WAM) can do to increase attendance of 18-21 year olds to the Museum and what components of a sustainable museum café would be most appealing to this age demographic?” In order to answer this question, we analyzed the current and potential Worcester Art Museum visitors through strategic surveying. This will allow the Museum to improve its current café by incorporating sustainable measures to attract a new audience based on our recommendations. This was strongly appreciated by the Museum specifically because of its constant movement toward commitment to sustainability. In order to answer the above questions, we achieved the following five objectives:

1. Identify and characterize the museum staff’s opinions of Worcester Art Museum’s current efforts to attract the 18-21 year old demographic and suggestions for improvements.
2. Identify the expectations of current museum visitors and their satisfaction or desire for museum improvements to increase attendance to the museum and its café.
3. Identify the preconceptions and biases of 18-21 year old potential museum visitors to determine what might increase their interest in the Worcester Art Museum.
4. Identify the components of sustainability to be added to the Worcester Art Museum café that would be most successful in increasing visitor attendance.
5. Based on our data analysis, provide recommendations to the Worcester Art Museum for development of an eco-café, and for improvement of museum strategies to attract visitors from the 18-21 year old demographic.

We describe each objective as well as the necessary tasks for completing each objective in the sections below. A full timeline of tasks for the project is listed in Appendix F.

3.1: Objective 1: Identify and characterize the museum staff’s opinions of Worcester Art Museum’s current efforts to attract the 18-21 year old demographic and suggestions for improvements.

In order to identify the best actions for the Worcester Art Museum to increase attendance of 18-21 year olds in the museum and the café, we first took into consideration the opinions and

expectations of the museum itself on their current practices. We did not want to make any recommendations or research any alternatives that do not meet the standards or expectations of the museum and its staff. Consequently, we conducted interviews with museum staff members and utilized WAM records and archives in our research.

3.1.1 Interview Staff

To understand the opinions of the Worcester Art Museum staff, we conducted semi-structured interviews with current Worcester Art Museum staff members. We chose face to face interviewing because it is a strong method of gathering opinions and individual information from participants. We also chose interviewing because we could observe additional information from participants that other methods, such as surveying or polls, do not offer. For example, during interviews, one can observe a raised eyebrow or an uncomfortable shift by the participant which can infer information that we could not have observed on paper (Ordini, 1968). In the case of our topic of museum improvements and increasing audiences, we would have been more likely to observe a large smile or the interviewee sitting up straighter indicating excitement and passion about a question or a potential improvement.

In section 2.1, we reviewed other museums (small, midsize, art, history, etc.) and their strategies for increasing and maintaining attendance and revenue, but our project and our recommendations are specific to the Worcester Art Museum. Therefore, it was necessary to investigate the perspective of this unique institution.

We were interested in the staff members' opinions on the current strategies that the Worcester Art Museum uses to attract 18-21 year olds and if/how the strategies could be improved. In order to obtain a wide range of responses and perspectives, we interviewed as many individuals as possible from the widest range of positions at the museum as possible taking into consideration staff schedules. We have omitted the names and positions of the staff members so that they might share their opinions openly. Our sponsor helped us connect with staff members.

Interviewing members of the Worcester Art Museum staff was most important in obtaining information from those who have expertise and opinions that inspired great recommendations for changes in the museum.

We conducted semi-structured interviews which involved a predetermined set of questions with allowances for new ideas and directions throughout the conversation (Berg, pg. 112, 2012). This

type of interview also allowed for a more personal connection with the interviewee while still maintaining professionalism. Interviewing served our needs because we had specific questions that we were sure to ask, however, we were still able to allow the interviewee to move the conversation and introduce new ideas, which inspired topics that we had not previously considered.

We conducted 15 to 30 minute interviews on site at the Worcester Art Museum at the convenience of the museum staff members, keeping in mind their busy schedules. In each interview, we tracked answers to questions on our Worcester Art Museum Staff Interview Form (Appendix B) and through the Dragon recording software (Dragon Recorder Application, 2013). We posed questions on the following topics:

- The interviewees history with the museum
 - (Length of time working, department, schooling history, etc.)
- Ways in which the museum currently works to attract 18-21 year old visitors
 - (Exhibits, events, promotions, café/shop, etc.)
- The museum café and its potential for attracting college students
- The implementation of sustainability in the museum café and ways in which it can be used to attract 18-21 year old visitors.

These questions resulted in quantitative and qualitative answers which we analyzed in two different ways. We were able to interview 11 full time staff members out of 66 total full time staff members and one additional part time staff member, meaning that our data is qualitative based on our exploratory research.

3.1.2 Qualitative Analysis

For the questions that we asked the interviewee that resulted in a free form answer, we analyzed the answers qualitatively. This included identifying themes throughout the data and defining specific categories that each piece of data could be sorted into. By calculating these responses, we were able to strengthen our overall recommendations by introducing new themes.

3.1.3 Quantitative Analysis

The rest of the questions were analyzed quantitatively. These were answers in the form of a rating, multiple choices, or select one answer. By having quantitative information, we were able

to use the data to understand what participants feel has worked to increase attendance and what strategies should be implemented.

To analyze this data, we imported all results into Microsoft Excel and analyzed by determining the best choice based on the highest percentage of responses. The quantitative data was easy to analyze in an Excel worksheet because we conducted 12 interviews, whereas our tasks for meeting Objective 2 and 3 (Sections 3.2 and 3.3) involved a higher number of participants and therefore required use of data analysis software.

The museum staff provided us, not only with their personal insights on the museum, but also with an abundance of useful resources to enhance our research.

3.1.4 Use of Museum Resources: Records and Archives

To better understand the current status of the museum, we utilized attendance data compiled by the Worcester Art Museum and results from previous WAM surveys. The previous surveys were conducted by museum interns over the 2013 “Free Summer” promotion in order to give the museum an idea of how their promotion was affecting attendance. This information helped us to strengthen our data collection and frame proper survey questions. By understanding the current attendance numbers, specifically of 18-21 year olds, we were able to build upon the findings of previous surveys. We analyzed the attendees from the museum attendance data, categorizing their college/university and its proximity to the museum to understand if distance from the museum is a factor in attendance. We used this data to search for other commonalities that may have affected museum attendance such as school breaks, school majors sections (i.e. number of arts and humanities majors) or school clubs (i.e. Art, drama, history, green, environmental) and addressed these potential issues in the framing of our survey questions (discussed in sections 3.2, 3.3 below). These data helped us to understand, quantitatively, which of the museums previous marketing strategies were effective in attracting new visitors.

3.2: Objective 2: Identify the expectations of current museum visitors and their satisfaction or desire for museum improvements to increase attendance to the museum and its' café.

It was important that we gain an understanding of the expectations, satisfaction, and desired improvements from the current population of visitors to the Worcester Art Museum. As we

gathered data and researched ways to attract a new demographic to the Worcester Art Museum and its proposed eco-café (café with sustainable components), we wanted to ensure that we did not pose recommendations that would affect any aspects of the museum that are most appealing to its current visitors. The Museum's target demographic for our project was the 18-21 year old demographic of visitors, however they wanted to satisfy and understand current visitors opinions on what enhancements they would like to see, as well as gain a better understanding of what attracts them to the museum and café (Stacy, 2013).

3.2.1 Survey Current Attendees

In order to achieve our goal of better understanding current visitor expectations, satisfaction levels, and desired improvements, we surveyed current visitors. We surveyed in person at a station in the Lancaster lobby of the WAM for three weeks to gather information from WAM visitors by surveying them in person from a station inside the museum.

We chose surveying as our primary method of gathering information from this population for several reasons. By surveying any interested patrons in person at the entrances of the Worcester Art Museum, we were able to ensure that our data would reflect our target audience for this survey: the current attendees of the WAM and the museum café. Surveys allow for a predetermined set of strategic questions and the participant can only choose from a set of pre-provided answers, or in some cases enter their own response. This allowed us to more comprehensively gather and quantify large amounts of data, (by allowing us to survey large numbers of visitors). One-on-one interviews were not feasible for targeting large numbers of people, and email questionnaires were less practical for our purposes for three important reasons. Email questionnaires could not be so precisely targeted to reach the intended audience of recent visitors to the Worcester Art Museum, it was difficult to send out mass emails to individuals who have not already provided their email to an organization for the purpose of receiving email from that organization without violating spam laws (U.S. Bureau of Consumer Protection, 2009,) and the details of the surveyed subject's recent museum trip would not be nearly so fresh in their minds. Surveying in person neatly avoided all of these problems. Using surveys allowed our group to gather the maximum amount of information from our target demographic. We chose to build, distribute and analyze our survey using the Qualtrics Research Suite described below at the end of this section.

We worked carefully with our project sponsor to develop an effective set of questions in order to make our survey as brief and streamlined as possible while still covering all of the necessary topics. A recent market research study performed by the survey giant SurveyMonkey shows that the shorter and easier a survey is to take, the more people will take it.

“The more questions you ask, the less time your respondents spend, on average, answering each question. When your respondents, in methodological terms, begin ‘satisficing’—or ‘speeding’ through a survey—the quality and reliability of your data can suffer.” (Chudoba, 2011)

For this reason, we wanted to keep our survey as concise as possible and remain conscious of the fact that our participants were donating their time. We pre-tested the survey several times to ensure of survey collected all of the necessary data. Some questions included in our museum visitor survey, as well as our staff interviews and college student survey, do not specifically pertain to our project goal. Our sponsor asked us to include these questions because it was information that our sponsor wanted to know. This information will be provided to our sponsor in a separate report, along with our primary report of our findings.

The museum’s busiest days were Wednesday through Sunday, peaking on the weekends, and as such these were the days we surveyed attendees. We set up our survey station at a sponsor-provided location in the Lancaster Lobby of the museum, as this location had the most foot traffic throughout the museum. Furthermore, we surveyed visitors over a range of different times throughout the day. With these tactics, we maximized the amount and diversity of attendees surveyed.

We covered the following topics in our visitor survey:

- Basic demographic information: age of visitor, distance from WAM to visitor’s residence, and college and/or major, if applicable.
- The visitor’s reasons for attending the Worcester Art Museum and/or the museum cafe.
- How the visitor discovered the Worcester Art Museum and/or the museum cafe.
- If the visitor visited the museum, did they visit the cafe? If the visitor visited the cafe, did they visit the museum? Why or why not?
- What aspects of WAM they like and/or dislike and what changes they would like to see

- What kind of changes to the Worcester Art Museum and/or the museum cafe would the visitor like to see?
- How important is sustainability to the visitor, and what components of sustainability would they like to see in the museum café?

A full list of the questions in our Worcester Art Museum Visitor survey is attached in Appendix C.

When we began surveying, we realized a need for a paper version of our survey for visitors who were uncomfortable using an iPad or laptop. A large portion (46% of 113 surveys) of visitor participants preferred to use a printed copy of the survey. Advertising ourselves became necessary with the use of posters and signage in the lobby of the museum to be sure visitors noticed our station and wanted to take part in our survey. We were able to survey 12.8% (113 people) of the total visitor population, which was 881 people. This is a high percentage of visitors due to the fact that we could not survey visitors under the age of 18 years old as well as repeat museum visitors.

Following the quantitative data that we gained from these surveys was compiled and analyzed through the Qualtrics Research Suite. We chose to use the Qualtrics Research Suite because it made the analysis of the data easy to organize as well as allowing us to create visual representations of the data. This allowed us to present it in an organized fashion and make recommendations based on our findings. In order to facilitate data analysis, we used the Qualtrics Research Suite for creating and utilizing surveys.

3.3: Objective 3: Identify the preconceptions and biases of 18-21 year old potential museum visitors to determine what would increase 18-21 year old visitor interest in the Worcester Art Museum.

The Worcester Art Museum finds great value in understanding the perspective of its current visitors on how WAM can attract 18-21 year olds, but WAM is also very interested in the opinions of their target audience. Additionally, our project sponsor believes that students who attend schools that are located in close proximity to the Worcester Art Museum are more likely to attend the museum (Stacy, 2013).

3.3.1 Survey Local College Students:

In order to understand the Worcester Art Museum's target audience (18-21 year olds) and their opinions on museums, WAM and the sustainability movement, we surveyed the population of local college residents. Again, we believe that a survey serves as the most effective method for us because surveys have the capacity to reach a large population and a wide range of individuals within that population. Surveys are also an efficient method for data collection because it allowed us to collect our desired information while only taking up 5-10 minutes of the participant's time. We chose to build our survey using the Qualtrics Research Suite described in section 3.2.2.

The Worcester Art Museum wants to increase the attendance of the 18-21 year old demographic because, with all the colleges and universities in Worcester, the museum feels that it is missing out on a large portion of the local community.

Given the large number of universities (10 schools) in the Worcester area, we were not able to include participants from all of the colleges in our research. Consequently, we identified seven schools to focus our surveying efforts on based on proximity to the museum and overall full time student enrollment (Colleges and Universities, 2013). By using a map of the area surrounding the Worcester Art Museum (Figure 2) and university websites, we identified seven Worcester

colleges where we would focus our surveying efforts. We planned to survey students at the following seven schools:

Assumption College

Becker College

Clark University

College of the Holy Cross

Quinsigamond Community College

Worcester State University (WSU)

Worcester Polytechnic Institute (WPI)

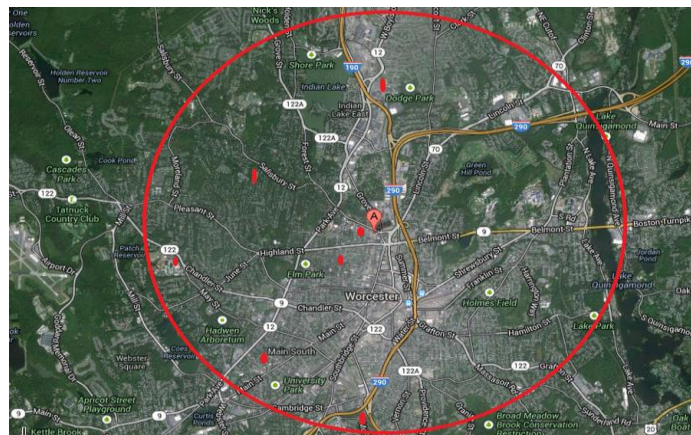


Figure 2: Map of colleges within a 4 mile radius of the Worcester Art Museum

Figure 12 (Appendix A) displays population and proximity information that determines which colleges we surveyed. The seven schools that we surveyed were all very close to the Worcester Art Museum, within four miles, and had a full time population of over 2000 students. We planned to visit the campuses of the seven selected schools and survey the students on campus. However, after calling and emailing these schools' offices, we found that each school had strict policies on campus surveying. These policies prevented us from visiting any of the campuses, except WPI, to survey students in person. We then began researching methods to survey the students online. We decided to send out the survey through a mass email to the student body at each school. This would ensure that we reached the largest population of students possible. However, we found that all seven schools denied us access to their email services for distribution of our survey. Unfortunately, surveying outside of WPI was not as easy as we had hoped. There has been a surge in use of online surveying, and an increased desire to survey student populations. Consequently, colleges and universities have become more reticent to allow external researchers to survey their students. New regulations at these schools, including WPI, restrict student researchers from distributing surveys through campus wide email. We anticipated that access to the students via e-mail may be restricted. For example, Jane Reynolds, Vice President of Student Affairs at the College of the Holy Cross informed our team that mass emails to students from outside sources are prohibited through official Holy Cross email channels (Reynolds, 2013) .

Since we were unable to send a mass email, our course of action was to attempt to reach out to the green teams, art clubs and student government associations at each school. We believed that green teams and art clubs would have valuable insight on matters such as which aspects of sustainability they look for in establishments or what aspects of the art museum we could incorporate into the sustainable café. We conducted online research of all of our target schools to find relevant campus organizations that may be interested in our research and willing to distribute our survey. Contact information was found via the school's website or contacting the school's student activities office.

We chose organizations based on availability of contact information, size, and which would be most interested in the Worcester Art Museum and its goal to incorporate environmental

components. We believed that our project would be of significance to them and our survey would reach a wide range of students.

Additionally, we reached out to the selected colleges and universities using social media outlets, such as Facebook. We invited club members to participate in the survey and also requested the clubs distribute the survey on their campuses. Figure 17 (Appendix F) displays the organizations that we contacted by school and method of communication.

We also reached out to WPI's sustainability coordinator, Elizabeth Tomaszewski, to see if she had contacts with sustainability officers at area schools and would be able to help us get the survey distributed via student groups that would have a vested interest in the research. She connected us with individuals from Assumption College, Clark University, Worcester State University and the College of the Holy Cross. Many of these contacts were helping in distributing our survey to local college students. Through her contacts, we were able to distribute our survey to many more students at different schools.

Along with contacting Elizabeth Tomaszewski in an attempt to disseminate our survey to other schools, we printed out 150 posters and hung them around the campuses of the surrounding schools. The posters were appealing, eye catching and had a brief statement of our project goal, as well as a link and QR code to our survey. We researched popular coffee shops and restaurants around each of our target schools, identifying establishments that college students would most likely visit. We hung the posters in any of the selected businesses that allowed us to do so, which was a high percentage due to the fact we were working with the WAM, a prominent establishment in the community.

Our responses from the other schools (schools other than WPI) drastically increased after our contact with Elizabeth Tomaszewski and after hanging the posters around the schools. However, the number of responses was still significantly less than the number of responses that we received from WPI students.

We had received a significant amount of responses from the WPI student population. However, we decided that table sitting in the Camus Center, a frequently visited building on the WPI campus, would yield significant results in terms of survey responses. Our first attempt did not, however, yield many responses. Students seemed uninterested in our table. The next day, we

worked on the aesthetic appeal of our table. We put up a color sign stating who we were and our goal, along with a bowl of candy. The changes had a tremendous impact on the number of students that visited our table. The number of responses more than doubled from the first day to the second day.

The topics that we focused on in the college student survey were the importance of sustainability, the student's knowledge of museum programs and events, and the student's interest in the museum and what it has to offer. The purpose of this survey was to identify what type of improvements the museum could make in order to attract more college students. If the student had been to the museum, we were interested in what the student thought was done well at the museum, as well as any suggestions the student had for improvements. If the student had not been to the museum, we were interested in the reasons why the student had never been in addition to what changes would attract them to visit the museum (See Appendix D for a full list of survey questions).

We received 248 responses from college students to the Worcester College Student Survey including students from Assumption (1.6%), Becker College (2.4%), Clark University (4.4%), College of the Holy Cross (2.0%), Quinsigamond Community College (1.2%), Worcester Polytechnic Institute (85.8%), and Worcester State University (2.4%) which shows the results of our various efforts.

The college student population of Worcester served as an exploratory sample size for the 18-21 year old age demographic because of the high concentration of colleges in Worcester. This data also allowed us to understand what recommendations for improvement we could offer the museum to satisfy our final objective below (Section 3.5). In order to analyze the collected data we used the Qualtrics Research Suite as well as personal analysis of the data from free form answers (section 3.1.2). See section 3.2.2 for discussion on how this data was analyzed through the Qualtrics Research Suite.

3.4: Objective 4: Identify the components of sustainability to be added to the Worcester Art Museum café that would be most successful in increasing visitor attendance.

The Worcester Art Museum has implemented an awareness of sustainability in their institution which they would like to extend into their museum. We interviewed museum staff and surveyed museum visitors as well as members of the 18-21 year old demographic to understand which components of sustainability in the Worcester Art Museum café would attract 18-21 year olds.

3.4.1 Interview Staff

In the semi-structured interviews that we discussed in section 3.1, we asked the members of the Worcester Art Museum staff to share their opinions on WAM's movement toward sustainability. We were interested in understanding which components of sustainability would attract the most 18-21 year old visitors. Examples of such components are energy efficient lighting, low flow water faucets, recycled flatware, or locally grown food products. Many more components of sustainability are described in section 2.2. See Appendix B for sample Worcester Art Museum staff interview sustainability questions.

3.4.2 Survey Current Visitors

We surveyed current visitors of the Worcester Art Museum as described above (Section 3.2.1) regarding how effective they feel the implementation of sustainability into the museum café will be at attracting 18-21 year olds. We discovered which components of sustainability they feel would be most effective in increasing attendance of the 18-21 year old demographic in Worcester. See Appendix C for more sample sustainability survey questions in the Worcester Art Museum Visitor Survey.

3.4.3 Survey Potential Visitors

We surveyed the potential visitors in the age demographic, 18-21 years old, by reaching out to local college campuses as described above (Section 3.3.1). If the student had previously visited the museum, we asked them what components of sustainability would be most effective in attracting other students like them to the museum café. Conversely, if the student had never visited the Worcester Art Museum, we asked them what, if any, components of sustainability would attract them to the museum café. See Appendix D for a full list of sustainability questions in the Worcester College Student Survey.

3.5: Objective 5: Based on our data analysis, provide recommendations to the Worcester Art Museum for development of an eco-café, and for improvement of

museum strategies to attract visitors from the 18-21 year old demographic based on our data analysis.

Following our interviews with museum staff members, surveys with local college students, and surveys with current museum visitors, we analyzed all the data as described in sections 3.1.2, 3.1.3, and 3.2.2.

3.5.1 Report and Presentation of Results

Following the completion of our surveys and interviews, we analyzed the data by categorizing the responses and identifying similarities within the data. We then began to organize our findings, using the data from the surveys and interviews as support. We first tried to organize our findings by the area of the WAM that the finding affected. We quickly realized that this approach would be confusing and difficult to follow. We decided to organize the findings by recommendation. We believe that this method work much more effectively as well as being clear and easy to follow. We used findings from each of our information sources, the college student survey, the museum visitor survey and the staff interviews, to support each of our recommendations to the museum.

As we completed of our data analysis using the Qualtrics Research Suite, we compiled this written report to give to the Worcester Art Museum. This report included tables and graphics created with our newly found data in order to give readers a clear visualization of our results. We supported all of these tables and graphics with the comments and reactions from our participants. We also had the report categorized into demographics such as Worcester Art Museum staff, college students, local residents, museum visitors, etc. This will allow the museum to better understand how to attract certain demographics, such as 18-21 year olds, and what the museum could do to improve attendance of this target audience. We then compiled a summary of recommendations and findings for the WAM. Our recommendations are detailed in chapter 4.

We also provided the WAM with a separate report containing all of the information that we received that did not directly pertain to our project goal. As we mentioned in objective 2, our sponsor asked us for additional information that was important to gather, but did not necessarily fall under our project goal or objectives.

In addition to the written reports, we presented our results to the WAM staff as well as the Worcester Polytechnic Institute student group that will continue with this project following the conclusion of our portion of the project.

In the next chapter, we discuss our analysis of our collected data. We explain our process which led us to make recommendations to the WAM based on our findings within the data.

FINDINGS AND RECOMMENDATIONS

Following all surveying and interviewing, our team reached our final objective (Section 3.2) by completing an analysis of all collected data and identifying our findings and eventually offering the following seven overall recommendations:

1. Advertise the café, events and promotions that cater to students using social media and direct communication with college students
2. Extend café hours; offer lower priced food options and a wider range of food options
3. Change the layout of the museum café
4. Offer night programming and hold museum events geared toward college students
5. Cycle through exhibits more frequently
6. Implement sustainability into the museum café
7. Implement specific components of sustainability into the café

We describe each recommendation below as well as details on how to fulfill each one and any necessary research that we suggest be completed.

4.1: Recommendation 1: Advertise the café, events, and promotions that cater to college students using social media and direct communication with college students.

During our surveying, we highlighted questions regarding use of the café and current advertising methods to college students. Based on our survey and interview data we found that students are not well informed about the WAM.

4.1.1: Students are not well informed about the WAM

From the 302 college students surveyed, 39% had never been to the museum galleries. Of the 116 college students that have not attended, 25% never attended because they were completely unaware of the museum. These pieces of data clearly show that the current advertising methods are not reaching the targeted audience of Worcester college students. Of the 156 students who answered the question “What, if any, changes would increase your interest in the Worcester Art Museum?” 74% of students said that they would like to see more advertising on their campuses.

4.1.2: Students who have attended the museum have enjoyed their experience

The 156 students that indicated that they have attended the museum were asked to rate their experience with the museum on a scale of 1 to 5, 5 being the best. The average rating of the students' overall experience was 4.34. Therefore, students who have attended the WAM enjoy their experiences but many students are unaware of the museum due to inadequate advertising.

4.1.3: Museum advertises on campuses about the WAM, not about specific events or museum dining

Similarly, 11 of the 12 staff members that were interviewed believe that more could be done to advertise on college campuses. Currently, the museum only advertises for the institution as a whole to college campuses and through student activities.

Due to the fact that the students that have attended the museum clearly enjoy it, but a significant percentage of students are not aware of the museum, we believe that advertising to this demographic is an area that definitely needs to be improved. We recommend advertising the café and events specifically in order to not only appeal to the college students, but to make them aware of the café and events as well.

Overall, the WAM and the museum café need to expand their advertising efforts. An increase in advertising to college students as well as an increase in advertising specifically for the café, events, and promotions run out of the WAM and the WAM café would increase interest and awareness of the museum and the café to their college student audiences.

4.2: Recommendation 2: Extend café hours; offer lower priced food options and a wider range of food options.

One of the core components of our project was to determine how to increase attendance to the café (Figure 3), both by college students and by the museum's current clientele.

4.2.1: Visitors and students both want an extension of café hours.

Our findings show that one of the most needed changes to the café, according to both museum visitors and college students, is an



Figure 3: Worcester Art Museum Cafe: Photo taken by Tristan Richardson

extension of the café hours on weekends and evenings. We found that 49% (of 35 visitors) of the museum visitors (Figure 1) and 32% (of 47 students) of college students (Figure 2) surveyed who attend the café said that they would like to see the café open later. Visitors surveyed also expressed interest in having the café open on Sundays for brunch. Similarly, another 15% (of 63 visitors) of the visitors and many college students who had not attended the café did not do so because of the current hours of operation. One student commented, "If the museum [café] were open later on a given weekend evening, I may have more time available to go." These concerns are shared by 100% (12 employees) of the museum employees we interviewed; each and every one agreed that the café would get greater attendance if its hours of operation were extended later into the day beyond their current 11:30-2:00 range. Considering that the museum would have expressed interest in use the café to attract college students, and since existing visitors have expressed interest in weekend hours, we recommend that the museum café stay open until the galleries close on weekdays, and open on Sundays for brunch.

4.2.2: Current and potential visitors desire increased variety of food options over a wider price range.

We found that the museum’s existing visitor base and college students alike are interested in a greater variety of menu items and the inclusion of lower-priced options. Most existing café customers expressed great satisfaction with the current menu items, finding them to be of “good quality.” However, as one visitor put it, “It would be nice to have one or two lower cost entree choices.” Out of the survey of existing café customers, nearly half said they would like to see lower prices in the café as did over half of college students who had been to the café, as shown in Figure 3. Moreover, our data shows that a great deal of museum visitors and college students who did attend the café expressed interest in expanding the variety of menu items offered, to accommodate lower priced options and just to provide more options. (Figure 4) Furthermore, a significant amount of visitors and college students surveyed did not attend the café solely because the prices were too high. When asked why he would not go to the WAM café, one college student replied that he found the food offered by the cafe "costly for average lunch."

| Population Surveyed | Lower Prices | More Variety |
|--------------------------------|---------------------|---------------------|
| Total WAM Café Customers | 46% | 31% |
| Students who attended WAM Café | 51% | 38% |

Figure 4: WAM Cafe Survey Results.

From these findings, we have formed our initial recommendation that the museum café expand its hours of operation and add a greater variety of lower-priced food choices to its menu.

4.3: Recommendation 3: Café layout options

4.3.1 *The café features desired by the 18-21 year old demographic do not align with the desires of the current café customer base.*

The current WAM café audience appreciates the café and its atmosphere, giving it an average score of 4.17/5 for overall experience (Figure 5).

Conversely, of WAM’s target demographic of 18-21 year olds, only 19% of those that had been to the café viewed it as a nice place to spend time or study, a fact that we will examine in greater detail in the next section. As such, for our next recommendations, we will present three different options for ways to continue to improve the museum café and potentially serve both audiences.

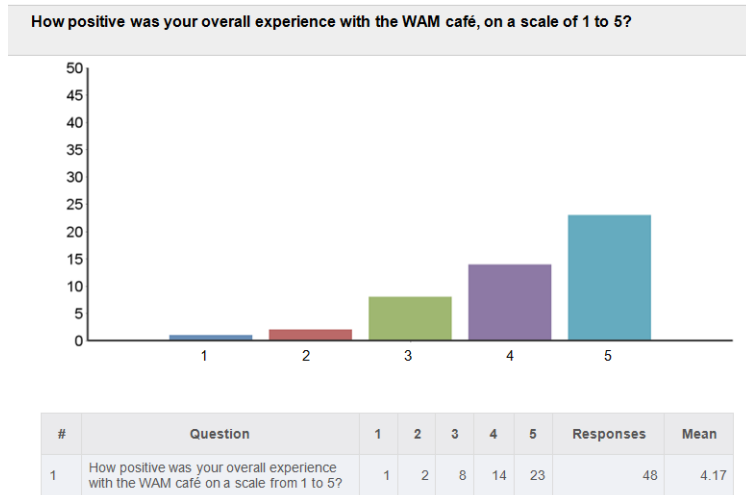


Figure 5: WAM café visitors rating of overall experience

Café Recommendation option 1: *Discontinue table service entirely; offer a more comfortable, open space for leisure and work.*

Researching how to attract college students to the museum café has been the primary focus of our project. This recommendation outlines a way to change the café with the primary intention of attracting college students.

4.3.2: *College students do not currently use the museum café.*

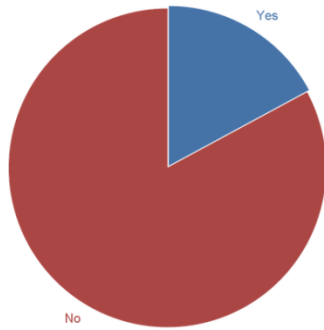


Figure 6: College Student Survey Results: "Have you ever been to the WAM cafe?"

As we stated in the previous section, we found that college students currently underutilize the museum café. In fact, 83% of students surveyed had never been to the museum café (Figure 6), and 100% of the Worcester Art Museum employees we interviewed felt the museum café is underutilized by the college student demographic.

4.3.3: The current café does not appeal to college students.

However, we also found, as discussed above, that the current museum café does not appeal to college students, as only 17% of the students surveyed had been to the café, and only 3.2% thought the café was a comfortable space to study or spend time. As you can see from the feedback provided by college students in the above section, we found that college students would be more attracted to a more hip, open, and modern cafe. As such, for this option, we recommend the construction of a new order-at-the-counter-style café with open, walk-in seating and features designed to create a more casual, student-friendly atmosphere.

4.3.4: The 18-21 year old demographic would be more attracted to a more casual, modern café.

From our college student survey, we found that the majority of college students do not feel that the café is an appealing space. As stated, only 19% of students who have been to the cafe (which is out of only 3.2% of the total number of students surveyed) felt the café was a comfortable space to study or spend time. As one student puts it, “The cafe is often closed when I am there, and its overall atmosphere with respects to location and design is very unwelcoming, and does not fit [a] café setting. It seems more like an awkward restaurant in the middle of the museum.” Other students have echoed this sentiment, declaring, “It looks like the Olive Garden. Why don't they take advantage of all those windows? And it feels dated. Museums need something sleek and hip. The [Institute of Contemporary Art] in Boston has a small but hip little cafe. [The] WAM should be able to do that too.” The museum employees that we interviewed seemed to agree; over half agreed that the café needed to be changed if it were to appeal to college students,

describing the current café as “stuffy” and “too formal” and stating that it would need to be more “modern and hip” to attract college students.

Ultimately, the café is not currently a space designed to attract college students. We recommend the space be opened up; the current café forces all visitors to enter and exit through a single choke point right next to a museum guard, and this creates a restrictive, confining atmosphere. Allowing customers to enter and exit more freely by removing some barriers and unbarring the glass doors to the lobby would go a long way to making the café a more appealing space. Furthermore, the current café has table service, which is more representative of a formal restaurant than a café, and in order to create a more comfortable, casual space for students to spend time, the table service should be replaced with a counter from which food may be ordered. We also recommend an overhaul in décor and atmosphere of the café; the student group working on the next phase of this project could look at cafés popular with Worcester college students (such as the Bean Counter or Acoustic Java) for inspiration on making a more “hip and modern” environment to attract college students.

4.3.5: The current café clientele is happy with the café

The disadvantage of this recommendation, however, is that we found that the majority of current café users were quite happy with the café. In fact, when asked to rate their experience with the WAM café, current café users rated it an average score of 4.17 out of 5, and 27% of café users declared that the atmosphere was their favorite aspect of the café. It is clear that the desires of the 18-21 year old demographic do not align with the desires of current WAM café user in terms of what they want to see in the museum café. This brings us to our second option.

Café option 2: *Keep the current “restaurant” café; replace the SIP cart with a permanent, more open lobby café with more comfortable seating*

Since the current café needs to be completely redesigned in order to appeal to the college student demographic, but already has a devoted clientele who would likely become ostracized if the café were changed, this recommendation is designed to create a space to keep both groups happy.

Thus, in order to appeal to both demographics we recommend that the museum keep the current restaurant-style café open, in order to appeal to the existing clientele, and replace the SIP cart in the lobby with a permanent café counter and seating area with a more open, contemporary, and

welcoming atmosphere and a layout designed to be a place to spend time and study (perhaps with music and couches) in order to appeal to college students.

4.3.6: The café's current clientele do not want to see it changed.

As we stated above, we found that the museum café is quite popular with its current clientele. Changing the café to appeal to 18-21 year olds risks alienating this demographic, as less than one-fifth of this demographic expressed any interest in changing the atmosphere or layout of the café, and this is why, for this option, which focuses on satisfying the desires of both groups, we recommend leaving the current café relatively unchanged.

4.3.7: The SIP Cart underutilized and not profitable.

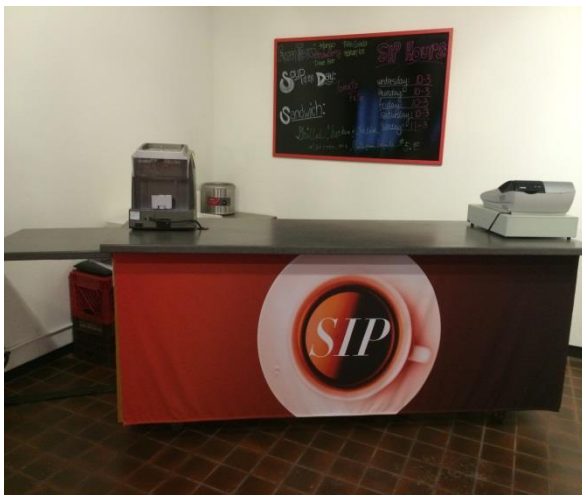


Figure 7: WAM Lobby SIP Cafe Cart

Since we are suggesting the construction of a new café without renovating the old one, the obvious question arises: where could we put such a café? We found that the SIP cart in the lobby (Figure 7) is only used by 26% of museum visitors, and only by 4% of college students surveyed. In fact, not many people are aware that the SIP cart exists; 75% of college students surveyed did not know about the cart, and even 63% of museum visitors surveyed (who were all surveyed less than 100 feet from the SIP cart) did not know about it. As such, and

because 31% of visitors have expressed dissatisfaction with the current level of seating in the lobby, we feel that the SIP cart's corner of the Lancaster lobby would be ideally suited as the location of the proposed new café. Since the SIP cart is not well recognized, we recommend that the proposed new café counter and accompanying designated seating area be far more prominent, designed to dominate the area and draw more attention—and customers.

The drawback of option 2 is that it requires the construction of an additional, new café space, while still maintaining the old café as well. Such development, with construction, the hiring of new employees, expanded overhead, and more, could potentially be prohibitively expensive. A cost analysis (potentially performed by the student group working on the next phase of this

project) is certainly warranted before the museum undertakes this option. However, the ultimate advantage of this option is that it satisfies the conflicting desires of both the 18-21 year old college student demographic and the current café clientele, and thus attracts the most people overall.

As we discussed above, we found from our research that the 18-21 year old demographic sought by the museum would like a more open, modern café with counter service. In order to become a place where students would come to study and spend time, the café would need to have a more casual and “hip” atmosphere, with less of a formal restaurant feel and with a greater variety of food items offered. Inversely, the café’s current customers are satisfied with the café as it is (as stated in the previous section), and enjoy the table service, atmosphere, and food offered by the current restaurant.

Café option 3: *Create a “hybrid” café in the current café space that makes use of both counter service and table service*

One option that we explored was the creation of a hybrid-style café in the current space that satisfies the desires of both groups, with half the space used for an open seating space with couches, more modern décor, and counter service. The other half of the café would then be a “formal dining” section that keeps the current table service and overall atmosphere of the current café. Ultimately, however, we do not recommend this option as the most effective choice. While the compromise is desired, the current café space is simply not suited to accommodate this model; adding a café counter and open seating section would leave very little room for a table service section. The current café (Figure 8), has very narrow walls in the kitchen area and would have to be disconnected in order to create a casual café counter space.

Finally, it would be difficult to create a space with a casual, modern, and hip

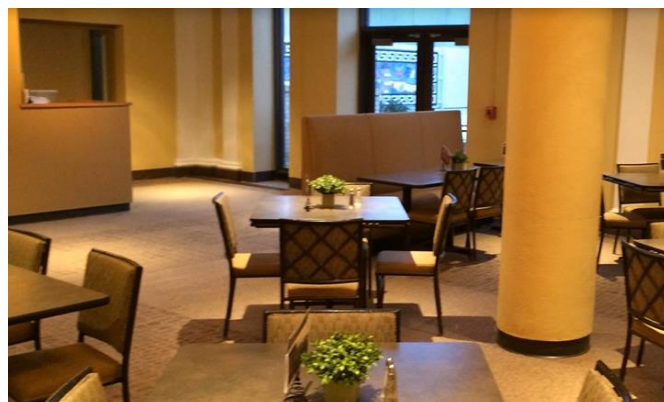


Figure 8: Worcester Art Museum Cafe: Photo taken by Tristan Richardson

atmosphere in such close proximity to a space with a more formal atmosphere without either of them clashing. For these reasons, we believe that combining the desires of both groups and

implementing option 2 would please the most audiences. Option 1 is likely to be most cost effective and additional research is recommended to determine the most cost effective option that will meet the needs of the café and its audiences.

4.4: Recommendation 4: Offer night programming and hold museum events geared toward college students

One of the main goals of our project was to identify ways in which the WAM could increase their attendance of the 18-21 year old demographic. Our findings focused on college student’s utilization of museum events and how it can be improved.

4.4.1: Current museum programs and events at the WAM are not appealing to college students

Through analysis of our data we found a good representation of the population of the 18-21 year old demographic do not utilize the events that the WAM holds. Only 10% of surveyed students that have been to the WAM have attended a program, such as a class, or event. Of that 10%, only 6% of students enjoyed their experience with the program or event.

4.4.2: Students are interested in night programming at the WAM

**Improvements to the WAM
(College Students)**

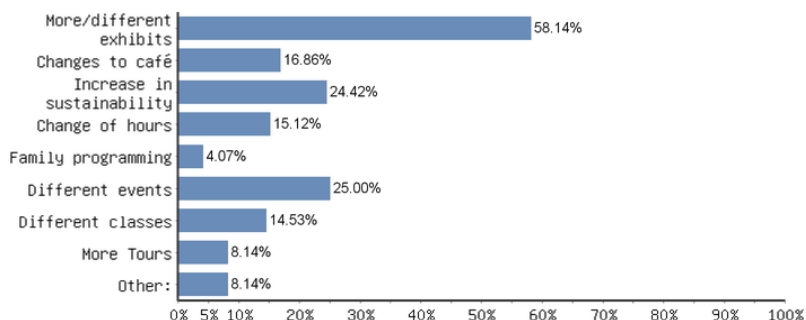


Figure 9: College student responses; Museum Improvements

The College Student Survey results show that 25% of 167 students surveyed reported that they would like to see new events, preferably in the evening (Figure 9). Students gave answers such as, "I would love a setting where there are culturally relevant talks/lectures, film

screenings, performance art, or even

cocktail hours in the museum open to the public" as well as, "maybe have late night hours...or have special college nights, possibly with free food." There were many more responses similar to these examples in our data, suggesting that college students would be interested in programs and events held later in the evening with topics that are current and relevant to them. Suggestions from staff members on what these programs and events could be were varied. The responses

ranged from open discussions on current topics that engaged the students to a live music event with a cash bar. One of the more popular responses among the 12 staff members interviewed was a “college night,” with a guest speaker on art history or relevant topics of the day. One staff member gave the example of a street artist giving an interactive talk on his works in the local community.

Our results showed an overall popularity of the idea of later programs and events with relevant topics among the college students as well as support from members of the staff. Figure 9 identifies an increase in events directed toward the college students as a more popular improvement to the WAM than an increase in sustainability. The museum currently offers some night programming, however, based on our data analysis, we recommend that the WAM incorporate additional night programming with events that target the college students by covering themes that are trending with the demographic. We recommend further research on the specific tastes of the target demographic to frame such events. These events would increase interest significantly in the programs and events that the museum offers to college students.

4.5: Recommendation 5: Cycle through exhibits more frequently

A focus of our surveys was ways in which the museum could improve and attract new audiences. Below we highlight two main improvements that the museum could do including a faster cycle of more modern exhibits and an increase in college specific programming.

4.5.1: The Worcester Art Museum galleries are underutilized by local college students

One of the motivations for completing our research was due to the underutilization of the WAM galleries by college students in comparison to their large population in Worcester. Assistant Curator of Education at the Worcester Art Museum, Katrina Stacy feels that because of the large population of students in the Worcester area, there should be a larger attendance to the museum by this demographic (Stacy, 2013). Through our interviews, we found that many museum staff members have the same perception that the WAM is currently underutilized by college students. Of the 12 staff members that we interviewed, 9 staff members reported that college students are not taking advantage of all that the WAM has to offer.

4.5.2: College students and current museum visitors would prefer faster cycles of more modern exhibits

We found, by analyzing our collected data, that college students and current museum visitors would prefer faster cycles of more modern art exhibits. The data also suggests that college students and current visitors enjoy the art work currently at the WAM, with 57%

WAM Improvements (Museum Visitors)

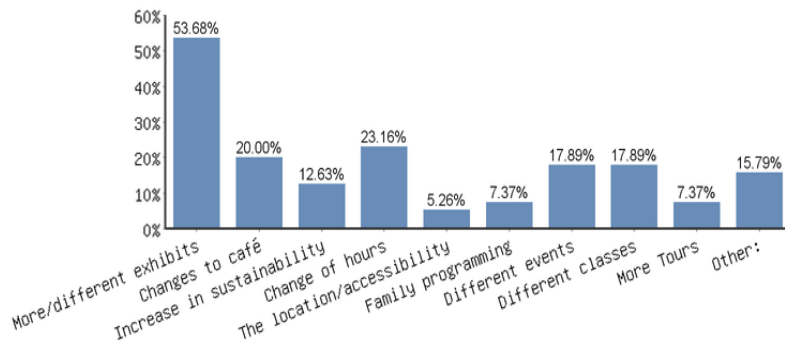


Figure 10: Museum visitor responses; Museum Improvements

of 187 surveyed college students that had been to the WAM reported that the art was the most enjoyable aspect of the WAM. Similarly, 42% of 113 visitors reported that the art was the main reason for visiting the WAM. However, we found that college students and museum visitors are not satisfied with the rotation of artwork through the WAM. The data shows that 59% of students (Figure 9) and 54% of visitors (Figure 10) would like to see new temporary exhibits in the WAM. Currently the WAM cycles through roughly seven temporary exhibits per year. One student responded "The only thing I would love is more/different art exhibits to look at to keep things fresh, even though the current artwork in the museum is awesome", when asked for an improvement for the WAM. From this information, we determined that college students and museum visitors enjoy the artwork in the WAM, but would like to see something new or different on their next visit.

One method to attract more college students to the WAM is to cycle through art exhibits more frequently. Additional research would need to be completed to identify the specific mediums and types of exhibits that this demographic would be interested in.

4.6: Recommendation 6: Implement sustainability into the museum cafe

One of the main focuses of our surveys and interviews was to gauge the potential addition of sustainability to the Worcester Art Museum café. Although the addition of sustainability could be a large expense, the museum has expressed interest in this change due to their institutional

movement toward sustainability. We worked to identify college student and museum visitor interest in this change.

4.6.1: College students and visitors have a strong interest in sustainability.

Our results showed that survey participants support sustainability as any function of operation which minimizes long-term effects on the environment. Of the 334 overall survey responses, college students and visitors identified their interest in sustainability as an average of 3.96/5 and only 8% of these respondents gave their interest in sustainability a score of less than 3 out of 5. One student mentioned that “Any and all types of sustainability efforts are good ones”. One visitor commented that “Anything sustainable with good quality is a positive”.

When asked about adding sustainability to the museum café, 54% of surveyed students feel that it would increase the café’s appeal to them. One surveyed student encouraged our research by commenting that “...a sustainable café would be a great addition to the museum”. Similarly 7 out of 12 employees interviewed believe that the addition of sustainability in the museum café would attract more college students.

Because of the overwhelming interest in sustainability and specifically its popularity among the target demographic of 18-21 year olds, we recommend that the museum café utilize sustainability as a means of attracting college students and new visitors.

4.7: Recommendation 7: Implement specific components of sustainability into the café

With the recommendation of adding sustainability into the museum café, we offer suggestions of which components of sustainability would be most effective in attracting college students and new audiences.

4.7.1: Students are interested

*in of locally grown food,
recycled plates and cups,
recycled paper materials,
and energy efficient lighting*

Of the offered sustainability components in the College

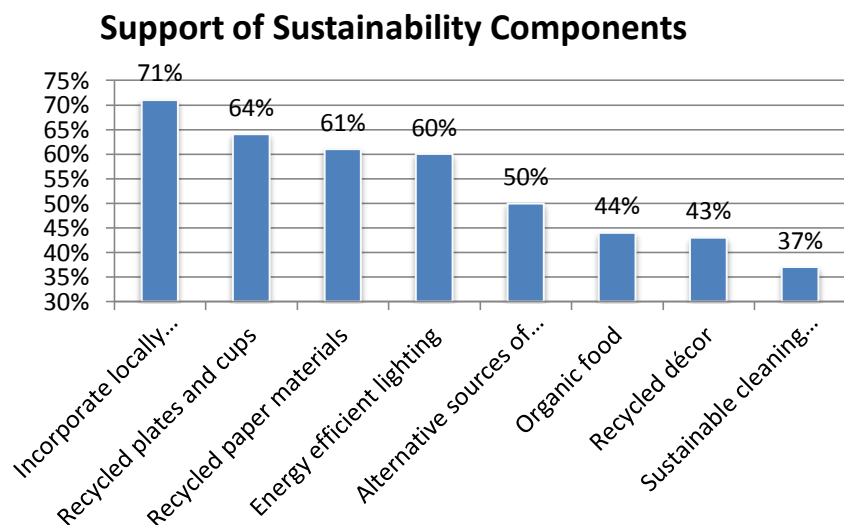


Figure 11: Sustainability Components Overall Survey Results

Survey (Appendix D) and the Visitor Survey (Appendix C), the most popular of the 354 survey responses were the incorporation of locally grown food, recycled plates and cups, recycled paper materials, and energy efficient lighting. Our sponsor expressed interest in identifying the top 4 popular components of sustainability. The complete results are listed in Figure 11. Our data concludes that the highest percentage of the 354 surveyed participants prefer the incorporation of locally grown food, recycled plates and cups, recycled paper materials, and energy efficient lighting. The results from the staff interviews list the same top 4 components as well. Therefore, we recommend these components be implemented into the café.

However, the most popular component of sustainability may not be the most cost effective. For example, utilizing sustainable cleaning supplies is of lesser popularity among participants, but is extremely inexpensive, easy to implement and could even save the café money. In 2012, Dan Wagner of the International Sanitary Supply Association reported that "...a growing body of evidence has documented that comprehensive green cleaning programs, in addition to sustainable building practices, have led to significant savings on energy, water, chemicals and waste" (Wagner, 2012). Therefore, a cost analysis should be completed by the next group of WPI students that will be continuing this project, on the offered recommendations and their cost effectiveness in regards to their popularity.

Based on our data and findings, we offer the recommendation of implementing sustainability into the museum café in the form of the incorporation of locally grown food, recycled plates and cups, recycled paper materials, and energy efficient lighting or any of the other popular components based on a cost analysis of the options. These additions will appeal to local college students as well as strengthen the interest of current visitors.

CONCLUSION

Museums hold a strong cultural and social importance in their communities. They serve as a conduit for making art and culture accessible to different audiences, play a key role in education, provide insight to the past, and maintain humanity's treasures for future generations. The Worcester Art Museum (WAM), one of the largest art museums in New England, takes its duty to educate and raise the cultural capacity of its community seriously. The Worcester Art Museum believes that their institution is currently underutilized by local 18-21 year olds. The museum is also in the process of implementing a new sustainability initiative, and is looking for ways to apply that to the museum café. By surveying museum visitors and local college students, as well as interviewing museum staff members, our project gathered information to help the museum achieve these goals.

Our research showed that the museum needs to increase advertising on college campuses, and that the advertising needs to cover specific museum events, not just the WAM in general. We recommend an extension of café hours, as well as the addition of a variety of lower-priced menu options. Ultimately, we found that the current museum café does not appeal to the 18-21 demographic, and requires significant changes in order to attract this audience. As the museum has expressed interest in attracting this demographic, we offered two different recommendations to achieve this: either replace the current café with a new cafe designed to appeal to the younger demographic, or keep the current café to retain its current audience, and construct a second café with different décor in the lobby to appeal to the 18-21 year old demographic. We also recommend that the college student demographic could be attracted by offering more night programming and by cycling through exhibits more frequently. We found that sustainability is an issue that is important to both college students and current museum visitors alike, and provided recommendations as to which components of sustainability their target audience would most like to see in the museum café. By implementing these recommendations, the museum can improve its appeal to the younger demographic and reinforce its position as a vital cornerstone of Worcester's culture for years to come.

REFERENCES

- Advocacy*. (2013). Retrieved October 10, 2013, from American Alliance of Museums:
<http://www.aam-us.org/advocacy>
- Alzheimer's Cafe*. (2011). Retrieved October 11, 2013, from The Children's Museum of New Hampshire: <http://www.childrens-museum.org/cmnh2010/programs/content.aspx?id=986>
- American Alliance of Museums. (2013). Retrieved October 10, 2013, from <http://www.aam-us.org/advocacy>
- American Association of Museums. (2008). *Museums & Society 2034: Trends and Potential Futures*.
- Barry, F., Henze, L., Lamb, D., & Swank, K. (2010). *Cultivating Lifelong Donors: Stewardship and the Fundraising Pyramid*. Blackbaud.
- Berg, B. (2011). *Qualitative Research Methods for the Social Sciences*. Pearson.
- Brundtland, G. H. (1987). *Report of the World Commission on Environment and Development: "Our Common Future"*. United Nations.
- Cawthray, J.-L. (2012, January 16). *Reducing Food Waste*. Retrieved September 13, 2013, from Museums Association: <http://www.museumsassociation.org/museum-practice/museum-cafes/16012012-reducing-food-waste>
- Chudoba, B. (2011, February 14). *How much time are respondents willing to spend on your survey?*. Retrieved from http://blog.surveymonkey.com/blog/2011/02/14/survey_completion
- Collin, R. M. (2009). *Encyclopedia of sustainability*. Santa Barbara: Greenwood.
- Dean, D. K. (1996). *Museum Exhibitions*. London, GBR: Routledge.
- Dobrzynski, J. (2013). Museum, Remodeled. *Wall Street Journal*.
- Dragon Recorder Application*. (2013). Retrieved November 10, 2013, from Nuance Communications: <http://www.nuance.com/dragon/recorder-app/index.htm>

- Easton, C. (2009). Sustainability a growing movement at colleges, universities across Canada. *The Canadian Press*.
- Edwards, A. (2005). *The Sustainability Revolution*. Philadelphia, PE: New Society Publishers.
- Elkington, J. (1997). Cannibals with forks: the triple bottom line of 21st century business. *The Journal of Sustainable Product Design*, 1(7), 61-63.
- Emanuel, Richard, Adams, J.N, (2011) "College students' perceptions of campus sustainability", *International Journal of Sustainability in Higher Education*, Vol. 12 Iss: 1, pp.79 - 92
- Environmental and Energy Study Institute. (2012). Sustainability Plans Popular on College Campuses.
- Falk, J. H., Dierking, L. D., & Foutz, S. (2007). *In Principle, In Practice: Museums as Learning Institutions*. Rowman Altamira.
- Geissler, G. L., Rucks, C. T., Edison, S. W. (2006) *Understanding the Role of Service Convenience in Art Museum Marketing: An Exploratory study*, *Journal of Hospitality & Leisure Marketing*, 14:4, 69-87, DOI: 10.1300/J150v14n05_05
- Hennessey, R. (2012). 3 Reasons Why Starbucks Still Shines, Despite Market Shortcomings. *Forbes*.
- Howard, G. R. (2007). *Responding to Changing Demographics*.
- Hughes, P. N. and Luksetich, W. A. (1999), The Relationship Among Funding Sources for Art and History Museums. *Nonprofit Management and Leadership*, 10: 21–37. doi: 10.1002/nml.10103
- Kagan, A. (2013). Museum Cafe Showcases Native American Cuisine. *Boston Globe*.
- Kaplan, F. (1994). Museums and the Making of "Ourselves": the role of objects in national identity. xi-430.
- Lægran, A. S. (2002). The petrol station and the Internet cafe: rural technospaces for youth. *Journal of Rural Studies*, 18(2), 157-168. doi: [http://dx.doi.org/10.1016/S0743-0167\(01\)00036-5](http://dx.doi.org/10.1016/S0743-0167(01)00036-5)

- Levin, A. (2013). Recent polling on youth voters. *Benenson Strategy Group*, Retrieved from <http://www.lcv.org/issues/polling/recent-polling-on-youth.pdf>
- Museums Australia. (2003)
<http://www.museumsaustralia.org.au/userfiles/file/Policies/sustainability.pdf>
- Museums in a Changing World*. (2012). Retrieved October 11, 2013, from International Council of Museums: <http://network.icom.museum/imd2012/imd-2012/museums-in-a-changing-world/>
- National Endowment for the Arts. (2010, 2012). Annual Report. 11.
- Nidumolu, R., Prahalad, C., & Rangaswami, M. (2009). *Why Sustainability is Now the Key Driver of Innovation*. Harvard Business Review.
- Olsen, E. (2013 March). Looking for Ways to Groom Repeat Visitors. *New York Times*.
- Ordini, L. (1968). *Personnel Journal; Why Interview?*
- Pak, M. S. (2011). Environmentalism then and now: From fears to opportunities, 1970-2010 (†). *Environmental Science & Technology*, 45(1), 5-9. doi:10.1021/es101424p
- Pearce, G. (2012). Greenwash” Big brands and carbon scams. Collingwood, AU: Black Inc.
- Reynolds, J. (2013, September 27). Email Communication.
- Rohter, L. (2010). After the Putti, the Baby Calamari. *The New York Times*.
- Smee, S. (2011). Worcester Art Museum, poised for change. *The Boston Globe*.
- Stacy, K. (2013, September 23). Project Sponsor Interview .
- Stafford, S. L. (2011), How Green is Your Campus? An Analysis of the Factors That Drive Universities to Embrace Sustainability. *Contemporary Economic Policy*, 29: 337–356. doi: 10.1111/j.1465-7287.2010.00231.x
- Steen, M. (2009). The Psychology and Economics of Green Business. *Stanford Graduate School of Business*.

Toman, M. (1999). Defining sustainability. *The RFF Reader: In Environmental and Resource Management*.

U.S. Bureau of Consumer Protection. (2009). *Can-spam act: A compliance guide for business*. Retrieved from <http://www.business.ftc.gov/documents/bus61-can-spam-act-compliance-guide-business>

U.S. Department of Energy. (2013). *Funding opportunities*. Retrieved from <http://energy.gov/public-services/funding-opportunities>

U.S. Small Business Administration. (2012). *Green business guide*. Retrieved from <http://www.sba.gov/green-business-guide>

Worcester Art Museum. (2012). *Worcester Art Museum Annual Report*. Worcester, Massachusetts.

APPENDIX

Appendix A: Worcester College Proximity and Population Information

| College/University | Address | Full Time Undergraduate Enrollment | Distance from Worcester Art Museum |
|--|-------------------------|------------------------------------|------------------------------------|
| Anna Maria College | 50 Sunset Ln Paxton, MA | 1,500 | 8.8 miles |
| Assumption College | 500 Salisbury Street | 2,079 | 2.1 miles |
| Becker College | 61 Sever Street | 2,081 | 0.8 miles |
| Clark University | 950 Main Street | 2,246 | 2.9 miles |
| College of the Holy Cross | 1 College Street | 2,891 | 3.7 miles |
| Massachusetts College of Pharmacy | 25 Foster Street | 1,131 | 0.9 miles |
| Quinsigamond Community College | 670 W. Boylston Street | 8,922 | 3.3 miles |
| University of Massachusetts Medical School | 55 Lake Avenue North | 589 | 2.8 miles |
| Worcester Polytechnic Institute | 100 Institute Road | 3,841 | 0.2 miles |
| Worcester State University | 486 Chandler Street | 3,973 | 2.7 miles |

Figure 12: Worcester College Population and Proximity Information

(Anna Maria College, 2013) (Assumption College, 2013) (Becker College, 2013) (Clark University, 2013) (Colleges and Universities, 2013) (College of the Holy Cross, 2013) (Massachusetts College of Pharmacy, 2013) (Quinsigamond Community College, 2013) (University of Massachusetts Medical School, 2013) (Worcester Art Museum, 2013) (Worcester Polytechnic Institute, 2013) (Worcester State University, 2013)

Appendix B: Worcester Art Museum Staff Interview Form

worcester
art museum

WORCESTER ART MUSEUM STAFF INTERVIEW FORM

We are a group of students from Worcester Polytechnic Institute in Massachusetts and we are working with the Worcester Art Museum to target new audiences and develop designs for a new sustainable café and your participation is greatly appreciated. Currently, we are conducting an interview of museum staff members to better understand the current strategies of attracting 18-21 year olds and what, if any, improvements can be made.

| | | | | |
|---|--|---|---|--|
| Do you feel that the prices of food are reasonable for a college student? | <input type="checkbox"/> Yes | <input type="checkbox"/> No, too high | <input type="checkbox"/> No, to low | <input type="checkbox"/> Unsure |
| Do you feel the museum currently serves as a comfortable workspace for students? | <input type="checkbox"/> Yes, What aspects? _____ | | | |
| | <input type="checkbox"/> No, Why not? _____ | | | |
| Additional comments on possible café improvements that would increase 18-21 year old attendance | | | | |
| Sustainability | | | | |
| How do you feel about the institutions changes toward sustainability? | | | | |
| Do you feel the addition of sustainability in the museum café will attract 18-21 year olds? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unsure | |
| What components of sustainability do you feel would be most effective in attracting college students? Check all that apply. | <input type="checkbox"/> Energy efficient lighting | <input type="checkbox"/> Recycled plates and cups | <input type="checkbox"/> Recycled paper material (napkins, toilet paper) | <input type="checkbox"/> Locally grown food |
| | | | <input type="checkbox"/> Low flow faucets | <input type="checkbox"/> Sustainable cleaning supplies |
| | | | <input type="checkbox"/> Recycled décor (tables, chairs made of recycled materials) | <input type="checkbox"/> Other _____ |
| Additional Comments: | | | | |
| | | | | |

Figure 13: Worcester Art Museum Staff Interview Form

Appendix C: Worcester Art Museum Visitor Survey



WORCESTER ART MUSEUM VISITOR SURVEY

We are a group of students from Worcester Polytechnic Institute in Massachusetts and we are working with the Worcester Art Museum to target new audiences and develop designs for a new sustainable café and your participation is greatly appreciated. Currently, we are conducting a survey of museum visitors to better understand their expectations, satisfaction, and desired improvements

Your participation in this survey is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

Individual

| | |
|---|--|
| How old are you? | <ul style="list-style-type: none"> a) Less than 18 b) 18-21 c) 22-35 d) 35-55 e) 55+ |
| If you answered “b” to the previous question, are you a college student? | <ul style="list-style-type: none"> a) Yes b) No |
| If you answered “b” to the previous question, were you aware that Worcester Art Museum offers free admission to college students? | <ul style="list-style-type: none"> a) Yes b) No |
| How far away from the Worcester Art Museum do you live? | <ul style="list-style-type: none"> a) Less than 1 mile away b) 1-5 miles away c) Within Worcester city limits d) Outside of Worcester, but still in MA e) Outside of MA |

Museum

| | | | |
|--|---|--|--|
| Have you ever been to the Worcester Art Museum? | <ul style="list-style-type: none"> a) Yes b) No | | |
| What is your reason for attending the Worcester Art Museum? | <ul style="list-style-type: none"> a) For a specific exhibit: _____ b) General love of art c) Brought by class/organization d) Family activity e) Other: _____ | | |
| How did you learn of the Worcester Art Museum? | <ul style="list-style-type: none"> a) Through museum advertisements or promotions b) Word of mouth c) Brought by family/friend d) Newspaper/magazine article e) Other: _____ | | |
| How long is a “usual” visit to the Worcester art Museum for you? | <ul style="list-style-type: none"> a) Less than an hour b) 1-2 hours c) 2-4 hours d) 4+ hours | | |
| How positive was your overall experience with the Worcester Art Museum, on a scale of 1 to 5? | <ul style="list-style-type: none"> 5) Very positive 4) 3) 2) 1) Not very positive | | |
| What do you enjoy most about the Worcester Art Museum? | <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> The art/culture <input type="checkbox"/> The classes/education <input type="checkbox"/> The research library <input type="checkbox"/> The café/shop </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> The location/accessibility <input type="checkbox"/> Family programming <input type="checkbox"/> Events <input type="checkbox"/> Other _____ </td> </tr> </table> | <ul style="list-style-type: none"> <input type="checkbox"/> The art/culture <input type="checkbox"/> The classes/education <input type="checkbox"/> The research library <input type="checkbox"/> The café/shop | <ul style="list-style-type: none"> <input type="checkbox"/> The location/accessibility <input type="checkbox"/> Family programming <input type="checkbox"/> Events <input type="checkbox"/> Other _____ |
| <ul style="list-style-type: none"> <input type="checkbox"/> The art/culture <input type="checkbox"/> The classes/education <input type="checkbox"/> The research library <input type="checkbox"/> The café/shop | <ul style="list-style-type: none"> <input type="checkbox"/> The location/accessibility <input type="checkbox"/> Family programming <input type="checkbox"/> Events <input type="checkbox"/> Other _____ | | |
| What kind of improvements would you like to see in the Worcester Art Museum? | <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> More/different exhibits Explain _____ <input type="checkbox"/> Redesign of café Explain _____ <input type="checkbox"/> Sustainability <input type="checkbox"/> Change of hours Explain _____ </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> More events/classes <input type="checkbox"/> Lower admission prices <input type="checkbox"/> Free Tours <input type="checkbox"/> Other _____ </td> </tr> </table> | <ul style="list-style-type: none"> <input type="checkbox"/> More/different exhibits Explain _____ <input type="checkbox"/> Redesign of café Explain _____ <input type="checkbox"/> Sustainability <input type="checkbox"/> Change of hours Explain _____ | <ul style="list-style-type: none"> <input type="checkbox"/> More events/classes <input type="checkbox"/> Lower admission prices <input type="checkbox"/> Free Tours <input type="checkbox"/> Other _____ |
| <ul style="list-style-type: none"> <input type="checkbox"/> More/different exhibits Explain _____ <input type="checkbox"/> Redesign of café Explain _____ <input type="checkbox"/> Sustainability <input type="checkbox"/> Change of hours Explain _____ | <ul style="list-style-type: none"> <input type="checkbox"/> More events/classes <input type="checkbox"/> Lower admission prices <input type="checkbox"/> Free Tours <input type="checkbox"/> Other _____ | | |

Café

| | | |
|--|--|--|
| Have you ever been to the Worcester Art Museum café? | a) Yes b) No | |
| What is your reason for attending the Worcester Art Museum café? | a) The location b) The food c) Was attending the museum and needed food d) It's a quiet study space e) It's a nice place to spend time f) Other: _____ | |
| How did you learn of the Worcester Art Museum café? | f) Through museum advertisements or promotions g) Word of mouth h) Brought by family/friend i) Newspaper/magazine article j) Other: _____ | |
| How positive was your overall experience with the Worcester Art Museum café, on a scale of 1 to 5? | 5) Very positive 4) 3) 2) 1) Not very positive | |
| What do you enjoy most about the Worcester Art Museum café? | <input type="checkbox"/> The food/beverage options <input type="checkbox"/> The atmosphere <input type="checkbox"/> The workspaces <input type="checkbox"/> The prices | <input type="checkbox"/> The location/accessibility <input type="checkbox"/> The hours <input type="checkbox"/> Events <input type="checkbox"/> Other _____ |
| What kind of improvements would you like to see in the Worcester Art Museum cafe? | <input type="checkbox"/> The food/beverage options Explain _____ <input type="checkbox"/> Lower prices <input type="checkbox"/> Sustainable components <input type="checkbox"/> Customer Service | <input type="checkbox"/> The location/accessibility New location? _____ <input type="checkbox"/> Layout/Design of café (aesthetics) <input type="checkbox"/> Events <input type="checkbox"/> Other _____ |
| Sustainability | | |
| How important are sustainable practices to you, on a scale of 1 to 5? | 5) Very important 4) 3) 2) 1) Not very important | |
| Do you feel the addition of sustainability in the museum café will make the café more attractive to you? | a) Yes b) No | |
| What components of sustainability in the café do you feel would be most attractive to you? Check all that apply. | <input type="checkbox"/> Energy efficient lighting <input type="checkbox"/> Recycled plates and cups <input type="checkbox"/> Recycled paper material (napkins, toilet paper) <input type="checkbox"/> Locally grown food | <input type="checkbox"/> Low flow faucets <input type="checkbox"/> Sustainable cleaning supplies <input type="checkbox"/> Recycled décor (tables, chairs made of recycled materials) <input type="checkbox"/> Other _____ |
| Additional Comments: | | |

Figure 14: Worcester Art Museum Visitor Survey

Appendix D: Worcester College Student Survey

WORCESTER COLLEGE STUDENT SURVEY

We are a group of students from Worcester Polytechnic Institute in Massachusetts and we are working with the Worcester Art Museum to target new audiences and develop designs for a new sustainable café and your participation is greatly appreciated. Currently, we are conducting a survey of Worcester College Students to better understand their expectations, satisfaction, and desired improvements for the museum.

Your participation in this survey is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

| Individual | |
|---|--|
| 1. How old are you? | a) Less than 18 b) 18-21 c) Over 21 |
| 2. If you answered “b” to question 1, are you a college student? | a) Yes b) No |
| 3. If you answered “a” to question 2, what college do you attend? | Name of College: _____ |
| If you answered “a” to question 2, what is your major? | Major: _____ |
| c) Are you familiar with the Worcester Art Museum? | a) Yes b) No |
| d) Are you aware that the Worcester Art Museum offers free admission to college students? | a) Yes b) No |
| e) Have you ever been to the Worcester Art Museum? | a) Yes b) No |
| f) If you answered “b” to question 7, skip to the next section of questions. | |
| g) If you answered “a” to question 7, how often do you visit the museum? | a) About one time per month b) Less than 10 times per year c) About one time per year d) Less than once a year |
| h) What was your reason for visiting the museum? Select all that apply. | a) Interested in the exhibits b) Something to do with friends/family c) To attend a program or event d) Art class or club visit e) Other, explain: _____ |

| | |
|---|--|
| i) Have you ever visited the museum café? | a) Yes b) No |
| j) What rating would you give your overall experience at the Worcester Art Museum? (1 being very unsatisfied, 5 being very satisfied) | a) 1 b) 2 c) 3 d) 4 e) 5 |
| k) What did you particularly like about the Worcester Art Museum? Select all that apply. | a) Exhibits b) Proximity to your residence c) Hours of operation d) Friendliness of staff e) Events or programs offered f) Free admission g) Café h) Other: explain _____ |
| l) What, if any, suggestions can you recommend to the Worcester Art Museum? | Recommendations: _____ |
| If you have never visited the Worcester Art Museum | |
| m) What are your reasons for not visiting the Worcester Art Museum | a) Lack of interest in exhibits b) Distance to the museum c) Hours of operation d) Unaware of the museum e) Other: explain _____ |
| b) Do you think implementing sustainable components at the museum would increase the museums attractiveness? | a) Yes b) No |
| c) Which components of sustainability are most attractive to you? Select all that apply. | a) Locally grown, organic food b) Energy efficient use of electricity and water c) Compostable or recycled utensils and dishware d) Other: explain _____ |
| Café | |
| e) Have you ever been to the Worcester Art Museum café? | a) Yes b) No |
| a) If you answered yes to the previous question, what is your reason for attending the Worcester Art Museum café? | a) The location b) The food c) Was attending the museum and needed food d) It's a quiet study space e) It's a nice place to spend time Other: _____ |
| f) How did you learn of the Worcester Art Museum café? | a) Through museum advertisements or promotions b) Word of mouth c) Brought by family/friend d) Newspaper/magazine article Other: _____ |
| How positive was your overall experience with the Worcester Art Museum café, on a scale of 1 to 5? | 5) Very positive 4) 3) 2) |

| | | |
|--|--|--|
| | 1) Not very positive | |
| What do you enjoy most about the Worcester Art Museum café? | <input type="checkbox"/> The food/beverage options <input type="checkbox"/> The atmosphere <input type="checkbox"/> The workspaces <input type="checkbox"/> The prices | <input type="checkbox"/> The location/accessibility <input type="checkbox"/> The hours <input type="checkbox"/> Events <input type="checkbox"/> Other _____ |
| What kind of improvements would you like to see in the Worcester Art Museum? | <input type="checkbox"/> The food/beverage options Explain _____ <input type="checkbox"/> Lower prices <input type="checkbox"/> Sustainable components <input type="checkbox"/> Customer Service | <input type="checkbox"/> The location/accessibility New location? _____ <input type="checkbox"/> Layout/Design of café (aesthetics) <input type="checkbox"/> Events <input type="checkbox"/> Other _____ |
| Sustainability | | |
| How important are sustainable practices to you, on a scale of 1 to 5? | 5) Very important 4) 3) 2) 1) Not very important | |
| Do you feel the addition of sustainability in the museum café will make the café more attractive to you? | a) Yes b) No | |
| What components of sustainability in the café do you feel would be most attractive to you? Check all that apply. | <input type="checkbox"/> Energy efficient lighting <input type="checkbox"/> Recycled plates and cups <input type="checkbox"/> Recycled paper material (napkins, toilet paper) <input type="checkbox"/> Locally grown food | <input type="checkbox"/> Low flow faucets <input type="checkbox"/> Sustainable cleaning supplies <input type="checkbox"/> Recycled décor (tables, chairs made of recycled materials) <input type="checkbox"/> Other _____ |
| Additional Comments | | |
| | | |

Figure 15: Worcester Art Museum College Student Survey

Appendix E: Worcester College Contact information

| College/University | Email | Social Media |
|--------------------|---|--|
| Assumption College | Student Activities Office | Assumption College Greenhounds Sustainability Club Assumption College Dance Team |
| Becker College | Active Minds Animal Health Club Becker Journal Online Black Student Union (BSU)/ALANA (African, Latino, Asian, Native American) Dance Club | Becker College Performing Arts Division Becker College Theatre |

| | | |
|---------------------------|--|---------------------------|
| | <p>Dance Team Drama Club Game Development Club Gay-Straight Alliance (GSA) HawkTV Mazunte Turtle Project Club Music Club National Student Nurses Association Pre Veterinary Club Ski and Snowboard Club at Becker College Ski and Snowboard Club Student Athletic Advisory Committee Traditional Gaming Club</p> | |
| Clark University | <p>Clark Respecting Animal Welfare and Rights (RAWR) Clark University Student Action for Refugees (Clark Star) Clark University Timmy Global Health (TGH) Cycles of Change (Cycles of Change) EcoReps (EcoReps) Food Truth Herban Gardeners (HG) Office of Student Leadership & Programming (SLP) ONE Campus Challenge (ONE) The Local Root Food Cooperative (Local Root) Ballroom Dance Team and Club (Ballroom Dance) Clark Musical Theatre (CMT) Clark Poetry Slam Clark University Choirs (Concert Choir) Clark University Concert Band (Concert Band) Clark University Players' Society (CUPS) Clark University Pop Rox (Pop Rox) Counterpoints (Counterpoints) Dance Society Hip Hop Collabo (HHC) Jazz Society Peapod Squad Rising Stars Shenanigans (Shenanigans!) Variant Dance Troupe (Variant)</p> | Clark University Eco-Reps |
| College of the Holy Cross | The Crusader Newspaper | Holy Cross Alumni in |

| | | |
|---------------------------------|---|--|
| | American Sign Language Club Neuronauts Holy Cross Radio Eco Action Purple Key Society Dance Ensemble Student Government Activities Board Campus Christian Fellowship Equestrian Club Ultimate Frisbee Ballroom dance | Sustainability Holy Cross Performing Arts |
| Quinsigamond Community College | Open Door Newspaper Psychology Club Psi Beta | Quinsigamond Community College |
| Worcester State University | Student Activities Office WSUR Radio Third World Alliance WSC Pride Alliance Gamma Theta Upsilon Environmental Advocacy Group | Worcester State University Dance Team Worcester State University Softball |
| Worcester Polytechnic Institute | Student Activities Office Greek Life Men's Soccer Campus Center Staff Biomedical Engineering Students Mechanical Engineering Students Industrial Engineering Students Social Committee Theatre Student Alumni Society | WPI Green Team Students for a Just and Stable Future |

Figure 16: Worcester College Contact Information

(Anna Maria College, 2013) (Assumption College, 2013) (Becker College, 2013) (Clark University, 2013) (Colleges and Universities, 2013) (College of the Holy Cross, 2013) (Massachusetts College of Pharmacy, 2013) (Quinsigamond Community College, 2013) (University of Massachusetts Medical School, 2013) (Worcester Art Museum, 2013) (Worcester Polytechnic Institute, 2013) (Worcester State University, 2013)

Appendix F: Overall Project Timeline

| Task | Week | | | | | | | |
|---|------|-----------------|----------------|------------------|------------------|------------------|------------------|-----------------|
| | PQP | 1 10/30-11/2 | 2 11/3-11/9 | 3 11/10-11/16 | 4 11/17-11/23 | 5 11/24-11/30 | 6 (12/1-12/7) | 7 12/8-12/14 |
| Verify all survey and interview questions | | | | | | | | |
| Utilize and understand museum resources | | | | | | | | |
| Interview WAM Staff members | | | | | | | | |
| Survey WAM Visitors | | | | | | | | |
| Survey College Students | | | | | | | | |
| Compile Data | | | | | | | | |
| Use Qualtrics to analyze data | | | | | | | | |
| Determine recommendations | | | | | | | | |

Figure 17: Overall Project Timeline