

DOCUMENTING THE MELBOURNE PROJECT CENTER AND ITS IMPACTS



ABIGAIL RAUCH
CAMERON NORTON
JOSHUA EBEN
SEAN MERONE



Documenting the Melbourne Project Center and Its Impacts

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

Abigail Rauch,
Cameron Norton,
Joshua Eben,
Sean Merone

Advisors:
Professors Ryan and Aarti Madan

3 March 2023

Report Submitted to:
Prof. Stephen McCauley and Prof. Lorraine Higgins



WPI

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

Abstract

Established in 1998, the WPI's Melbourne Project Center (MPC) is rapidly approaching its twenty-fifth anniversary. Our team was tasked by the MPC Project Center Directors to create a 10-minute overview video showcasing the MPC's impact on the greater Melbourne area over the course of these twenty-five years, focusing especially on benefits to its many community partners; this video, or parts of it, will be presented at the MPC's 25th anniversary event in April 2023. By analyzing previous data gathered by past IQP teams and interviewing select community partners, we developed a cohesive narrative and drafted storyboards prior to stitching together the different audiovisual pieces of the MPC story. We also offered recommendations to future IQP groups to learn audio and video editing before starting the IQP term, consistently send materials to center directors to receive meaningful feedback, and to be in constant contact with the preparatory team. In addition, we recommended to center directors to have a preparatory team and an editing team, use the ID 2050 term to pre-production planning, and to quickly revise sent work.



Figure 1: The team on their last day of IQP

Acknowledgements

Our team acknowledges the Kulin Nations of the Boon Wurrung language group, the traditional owners of the land on which we are located.

We pay respects to their Elders past and present, and extend that respect to other Aboriginal and Elder members of our multicultural community.

We would like to thank our advisors, Ryan and Aarti Madan for all of their help during the preparatory and project terms. We would also like to thank center directors, Stephen McCauley and Lorraine Higgins for their diligent guidance. Thank you to Jonathan Chee, our local coordinator for all his support. Additionally, we would like to thank the WPI ATC, the WPI SWEET center, and WPI Marketing for providing us the tools necessary to complete this IQP.

We would like to thank everyone that participated in our interviews: Courtney Green, Berat Kaya, Dani Zebic, and Sarah Hanoona (Brotherhood of St. Laurence); April Seymore, and Neil Blake (Port Phillips EcoCentre); and Jonathan Chee and Edgar Caballero (Banksia Gardens Community Centre).

Finally, we would like to thank all of our peers, both students and Melbourne residents for their support throughout our IQP.

Watch Our Video!

[Click Here](#)

Introduction

Worcester Polytechnic Institute (WPI) is a premier engineering and science university located in the hills of Worcester, Massachusetts. WPI was founded in 1865 and has become nationally and internationally recognized for its progressive approach to higher education. In 1970, WPI adopted a project-based curriculum in which students put theory into practice—indeed, WPI’s motto of *lehr und kunst*—by completing credit-bearing projects. These experiential learning projects are known as Interactive Qualifying Projects (IQP) and are a graduation requirement typically completed in the third year of education. To complete the IQP, students travel to project centers across the globe to work in teams and engage in project-based learning.



Figure 2: WPI students working with the Port Philips EcoCentre on their IQP.

One of the many global locations is the Melbourne Project Center (MPC), located in the heart of Melbourne, Australia. The MPC has a rich history of helping the Melbourne community with the aid of its community partners, from identifying and

developing strategies and mitigating microplastic pollution to finding potential solutions and residential firefighting water supply issues. Coming up on its 25th anniversary, the MPC aspires to share its longstanding and significant impact on the greater metropolitan Melbourne area. The team’s project thus sought to demonstrate the impact of previous IQP projects, particularly in the expanding organizational capacity, building networks and providing innovative deliverables through the creation of a documentary-style video introducing to the MPC and the range of projects it has serviced over the past 25 years.

This video was created utilizing data gathered from past IQP teams as well as footage captured by the team using professional techniques for composition, lighting, narrative direction, and conducting interviews. The footage and audio were then processed through audio programs such as FL Studio and video editing software such as Adobe Pro Premiere and After Effects.

Communicating the efforts—both past and present—of the MPC is vital for continued partnerships between the MPC and its array of community partners. Distributing the MPC’s message throughout the Melbourne area will allow other organizations to become aware of the MPC, leading to collaborations with more community partners for the MPC. In addition, the video will aid future IQP students by granting them access to more options for projects through new partnerships. Finally, this video will aid WPI’s reputation by showcasing the projects WPI has facilitated over the past 25 years.

To effectively collate and disseminate the long-term impact of its work, the MPC began the process of collecting data on IQP projects from its community partners in 2016 and 2017 for its 20th anniversary. This process was repeated in 2022, keeping track of every project that has been done through the MPC through their website. This work was completed by the IQP teams in 2016 and 2017, and most recently a group (who we will refer to as the B-2022 team) was sent to continue this process for the 25th anniversary.



Figure 3: The B-Term team at the Collingwood Children's Farm.



Figure 4: The city of Melbourne, Australia

This team attended the MPC during the second of WPI's four academic terms, while our team (referred to as the C-2023 team) worked for the MPC during the third of WPI's academic terms. The B-Term team was both able to gather the necessary data on projects to keep the database complete and was able to capture footage of some of the community partner's workspaces.

Our Goal

We sought to create a documentary that highlights the MPC's impact over the past 25 years by using gathered footage shot by the B-Term team and filling in any holes with our own footage. The main objective of this project was to create a compelling narrative about the MPC through the lens of a documentary, which will serve as an outline for videos made by future IQP teams to accurately capture the MPC's impacts.

Background

Since its founding in 1998, the Melbourne Project Center (MPC) has collaborated with a variety of community partners who have sponsored student research. The MPC was established by WPI fire protection engineering professor Johnathan Barnett, and has with its partners aided over six hundred WPI students to complete over one hundred and seventy different projects. Many of the earlier projects were led by Barnett and another WPI professor, Matthew Ward. These early projects had a more narrow focus, with many heavily centered on emergency services such as the Australian Fire Authorities. As time progressed, however, the project themes began to diversify, creating a sweeping impact across all areas of Melbourne.

The MPC currently works with over 37 Melbourne and nearby Australian organizations. About 18 student teams visit Melbourne each year to work on projects related to animal conservation and welfare; preservation of culture, history, and the arts; healthcare; energy resources; social and human services; public safety; urban planning; and more. These projects emerge from collaborative relationships with government agencies, universities, NGOs, and businesses (WPI's Melbourne Project Center, 2022).



Figure 5: Joanthan Barnett at WPI, circa 1985

These projects have been incredibly beneficial to WPI students in these contexts, with a previous study conducted in 2016 finding that 68% of students working at the MPC found the IQP to have greatly impacted their cultural awareness and a similar amount of students reporting that the projects had impacted their professional goals and work (Henson et al., 2016)



Figure 6: Statistic from 2016 IQP (Henson et al.) showing cultural awareness of IQP students

Alongside the great impact these projects have had on WPI students, they also have made a significant impact on the MPC's community partners and, with that, the Melbourne and surrounding communities. The 2022 B-term IQP team attained data regarding past project impact on community

partners, which in conjunction with the data provided by a 2017 IQP team (Carlson et al.) has been pivotal for the MPC. The data has allowed them to see how effective WPI students have been in positively altering the Melbourne area as well as how the students themselves have developed culturally, both of which are primary stated goals for the MPC: to "help students understand technological problems in their social, cultural, and political contexts," all with the intent to "yield tangible outcomes that benefit partnering organizations and the wider community" (Melbourne Project Center). Additionally, to document the effect that the MPC projects have had on the

Melbourne community over the past 25 years, the 2022 B-term team collected testimonials from community partners in video interview format, along with video footage from organizations and community partners of the MPC. The 2017 IQP team also collected testimonials and interview quotes to highlight the various areas of impact of the MPC.

The information collated by these teams serves as an excellent database of previous impacts. With the 25th anniversary of the MPC this year, we were tasked by the MPC directors, Stephen McCauley and Lorraine Higgins, to create a promotional video that synthesizes this information to be shared on the MPC website and at the 25th anniversary event. This charge required our team to create a meaningful narrative from that information, and to supplement B-roll footage, animations, and short interviews as necessary to more effectively highlight impact trends.

2.1 Integration of Community and Cultural Involvement

The MPC's first term in Melbourne was focused on improving the fire protection services and healthcare abilities of the city. Over the past 25 years there has been considerable evolution in the scope of projects as well as the involvement of the community and culture of the local people. In its first decade, the MPC diversified its project involvement into environmental issues, organizational processes, and education, to name a few. The MPC has also developed its range of projects with individual community partners. Where it had initially focused on improving organizational processes for many organizations, it has since included utilizing these resources to generate interest in more culturally involved matters with many of these partners.



Figure 7: Person and Person from the Center for Education and Research in Environmental Strategies (CERES) talking about the 2019 IQP that did a film study of Indonesian culture and climate.

One such partner is the Centre for Education and Research in Environmental Strategies (CERES). Beginning the partnership in 2011 with a focus on generating supplemental teaching materials, the MPC projects with CERES have since developed a far greater involvement in cultural awareness and community education. Several projects over the past dozen years have gradually included more of this philosophy. In 2016, CERES collaborated with two MPC teams to create village exhibits highlighting different cultural groups from the Australian population. One of CERES's more recent MPC projects was the Ethnographic Film Study of Indonesian Culture and Climate, made in 2019. This film study aimed to capture the pressing matters of Indonesian culture and their climate at the time through interviewing members of the Indonesian community of the Melbourne area.

Another example of this development in community partners is the Australian Fire and Emergency Service Authorities Council. The partnership began in 2001 with a heavy focus on developing core processes. Earlier projects such as water supplies for residential firefighting in 2001 and developing key

performance indicators for computer fire modeling in 2004 were examples of analyzing processes that were vital to the organization. Later projects shifted to involve fire-related processes affecting more focused communities such as the assessment of fire safety in Australia's international student housing in 2009 and the analysis of preventable fire fatalities in older people and people with disabilities in 2011.

Through efforts by the MPC and its partners, these projects and many more have paved the way for the MPC to be a leader in cultural change of the Melbourne area.

2.2 Best Practices for Filming

Of the many forms of film prevalent in the medium, the MPC Introductory video is structured around the format of a promotional documentary. Where promotional documentaries differ from more traditional film is in the subject matter and how it's presented. Where traditional documentaries center around a singular question and delve into related topics in an attempt to answer it, promotional documentaries center themselves around a singular subject. This single subject style is always accompanied by past works of the subject, highlighting their characteristics, promoting the subject in the process.

When creating a promotional documentary, it is important to take into account a plethora of preparatory practices and strategies. Of these practices, the initial consideration of the resources at hand, and thus realistic outcomes, is a crucial step. Peter Simcoe, a professional multimedia design consultant, states that when creating a promotional documentary one must take a realistic approach to the final product, and that it is "all about getting the best from the people and surroundings you have access to" (Simcoe, 2012).



Figure 8: Our team making use of our learned interviewing skills

In our team's position, it was imperative to assess the skills and technology we initially possessed in order to frame our own realistic approach. Another core development process outlined by Simcoe is the requirement for ample preparatory time for any interviews involved in the creation of the promotional documentary. This includes sending the interviewee all questions ahead of time, choosing an appropriate and effective location, and ensuring the interviewee is prepared to give answers multiple times in the interest of collecting the best possible take. Barry Hampe mirrors this importance in preparation in his book *Making Documentary Films and Videos* (2007), discussing at length the methods taken to prepare for interviews. Simcoe additionally is careful to not mince the importance of collecting an abundance of "cut-away" footage, or footage to be displayed over interview audio, in order to show the meaning of any quotes or narration given, rather than just telling. He also stresses that it can "often be a life saver if [an] interview requires a lot of small edits", as the cutaway footage can mask the edits made (Simcoe, 2012). For our team, this was mirrored in our production process as we took careful consideration of the material provided to us, and where the material could be supplemented and enhanced. This preemptive structuring provided a strong base for our production choices.

Video Process

All methods that were used in this project are qualitative, meaning that they focused on observable qualities, like descriptions of a certain action or object, rather than precise measurements (Berg & Lune, 2017). Multiple types of qualitative methods were used in the course of this project.

The group interviewed individuals partnered with the Melbourne Project Center (MPC). While some of these interviews were already completed by the B-2022 team, we conducted additional interviews to diversify visual elements and hear the stories of community partners in an aesthetically compelling format with professional compositional, lighting, and video and audio techniques.

Lastly, we used storyboarding to format the separated video and audio into a coherent narrative that portrays the MPC's impacts to all current and future community partners. Drawing on our collective skills with audio and video editing programs, we structured the narrative around several themes that emerged through our analysis of prior reports, of footage taken by other sources, and of footage we captured (which can be found in section 4.1).

3.1 Storytelling

By analyzing gathered and captured footage as well as the B-2022 and 2016-2017 team reports, we found trends and themes within the answers provided by community partners. We then needed to structure this information into an engaging narrative.

3.1.1 Initial Considerations

Before leaving for Melbourne, we received footage from the B-2022 team. The B-2022 team's interview questions covered broad topics involving WPI students' involvement with the community partners, as well as similarly broad questions about project process and success. Their interviews and findings showed impacts of projects affecting organizational and community levels mainly, while also having individual and systemic impacts. After meeting with the B-2022 team, we came to understand that more filming was necessary. While the B-2022 team's footage effectively highlighted general trends, the specifics required to create a strong narrative needed to be fleshed out.



Figure 9: Cameron and Sean at the Brotherhood of St. Laurence setting up for an interview.

While our team was able to ascertain these general trends from the B-2022 team, we determined that we needed to conduct additional semi-structured interviews to bridge the narrative gaps. Semi-structured interviews offer a unique window into qualitative information, for they allow a natural narrative to emerge, unbothered by the rigid walls of a fully structured interview. This method allows interviewees to express their answers holistically, while also potentially revealing unanticipated details that would have been lost without the free flow nature behind this semi-structure, details critical to tell a good story. Where a fully structured interview would offer the most direct answers to questions, it would mask the full context that most questions require to fully breach the truth as individual responses and reactions provide the most telling data (Berg & Lune, 2018). This method of interviewing lent itself incredibly well to our goal for the interviews, which was to supplement the information gathered by the B-2023 and 2016-2017 teams, while allowing a throughline to form.

To capture the full story of WPI's impact in Melbourne, we interviewed MPC community partners who work in a variety of different areas. We spoke with two youth workers for the Brotherhood of Saint Lawrence—Sarah Hanoonah and Danielle Zebic—as well as Courtney Green, a senior manager for the Youth Team; we chatted with Jonathan Chee and Edgar Caballero Aspe from Banksia Gardens Community Services; and, finally, we interviewed April Seymour and Neil Blake, who are, respectively, the CEO and the founder of Port Phillip EcoCentre.

We created specific questions for each interview to emphasize how each organization's projects have been affected by MPC students' efforts and their results. We recorded these interviews in the first four weeks to get as much footage as possible to start the editing process quickly. Conducting these

interviews in the semi-structured manner described above allowed the team to employ a more recursive narrative process as well.

3.1.2 Recursive Narrative Process

Conducting the interviews described above in the semi-structured manner allowed us to employ a recursive narrative process. Multiple methods exist that can achieve this sort of constructed narrative, however, structuring the development process around an iterative process was most practical for our focus. Extracting trends from data and footage provided by the

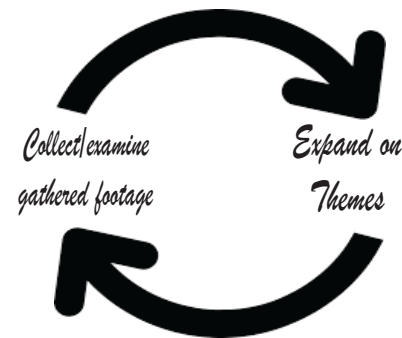


Figure 10: The team's narrative construction process

B-2022 and 2016-2017 teams left us seeking to expand on these trends presented. Using the trends as a guide for interview questions, we collected footage that allowed the team to synthesize themes from all data gathered. While collecting footage, the team had to take into consideration the need for planning the narrative. This was done with the guidance of the trends found by the previous teams, while still allowing for deeper themes to emerge, as the team could not predict all that was to come out of the interviews.

The process of filming is much more than capturing footage. Rather there is a significant process that must be followed, with constant interaction by the crew to give the film meaning. Taking an active part in showing the story and choosing between which footage to use while providing visual evidence of the question is critical to creating a meaningful product (Hampe, 2007). However, the most important of these rules is that the documentary needs to be grounded in truth, as the foundation must be stable to support any additional

weight.

This was further shown by Hampe when discussing the production and filming of documentaries with an unknown outcome. When filming with an unknown outcome, the documentarian must be open to the story that develops and ensure the truth of the matter is known to the viewer. This includes pivoting the focus of the documentary to ensure a compelling story is still conveyed. What this makes clear is that in the case of unknown outcomes, it is imperative that as much footage as possible is captured so the most complete picture of the subject is procured.

In attempting to display the lasting legacies of the MPC's projects, our team often shifted the focus of filming as new themes emerged, ultimately synthesizing them into a coherent and cohesive narrative.

3.1.3 Synthesis

After the group collected visually and narratively compelling material, the final step was synthesizing all the themes that had emerged into a strong throughline. We examined the footage from each community partner—from both the B-2022 team and ours—to find a consistent narrative line through them.

As discussed in Viewmakers (2011), a video on storytelling in documentaries, taking the collected film and information and formatting it so that it has numerous distinct sections elicits a strong desire in viewers to engage with the information being presented to them, especially when combined with strong thematic ideas. These concepts provide structure to the video, with the distinct sections allowing for natural progression in the narrative. Our video is thus divided into three sections: an introduction to WPI, IQPs and the MPC, a section highlighting different themes present throughout MPC

projects, and a segment showcasing the lasting legacies of these projects. All material captured was reviewed so that in each section certain concepts are seen throughout the MPC Introductory video. The structure is further complemented by effective utilization of assertive filmmaking. Assertive filmmaking involves a greater number of engaging aspects that acclaimed film director Mark Bone describes as four essential components: (1) a character with a desire, (2) a strong theme, (3) a proper narrative structure, and (4) a human voice at the beginning of the film to allow the audience to listen in. This assertive filmmaking extends past the structure of the film and into the gathering of material, including interviews.



Figure 11: Graphic depicting the MPC Introductory Video's three sections

3.1.4 Ethical Considerations

Interviews were carefully assessed to ensure a high ethical standard was met. Before any interview was conducted, the group asked for consent by use of a consent form (see supplemental materials section 2.0). Interviewees were not interviewed without this form filled out. Interview questions were non-invasive to ensure no trauma or psychological harm was inflicted. One method of ensuring non-invasive interviews, among others, is to begin the interview by asking easier questions, as it helps “warm up” the respondent to the interviewer while establishing a rapport between the two. Warm-up questions allow for more difficult questions to be less invasive to the

interviewee (Harvard University). Another tactic in this consideration is ensuring the interview has a semi-planned flow. As Barry Hampe (2007) said in his book *Making Documentary Films and Videos*, no interview should be “unscripted”.

While it is important to keep a natural flow, allowing the interview to run untethered could lead to an unpredicted course that could inflict unintended psychological harm on the interviewee. Although interviews were semi-structured and acted as a conversation with a relaxed, interpersonal tone, our team sent the questions to the interviewee before the interview to determine if there were any questions the interviewee was not willing to answer. In addition, if during the interview the interviewee decided not to answer a question, the group moved on, not pressuring an answer out of them. The importance of this is highlighted by the results of Stanley Milgram’s experiment in 1963 on authority. Its results showed that people are easily influenced by a position of authority asking questions or instructing them (Berg & Lune, 2018).

3.2 Technical Procedures

It is imperative that all footage collected or gathered to be edited is done so with proper technical procedures behind it and is edited through the proper methods. This includes all aspects of the process; including proper techniques in capturing footage, incorporating proper lighting methods and compositional shots, as well as editing techniques that focus on normalizing audio levels or correcting errors in footage.

3.2.1 Interview Considerations

There are an abundance of ways to record, set up, execute, and edit a video interview, as well as a large range of equipment that can be used. The equipment that our team utilized in Australia included a GoPro Hero7, a tripod, lavalier microphones, and a handheld microphone, all of which were borrowed from WPI’s Academic Technology Center. In addition, the team purchased a stabilizer for the GoPro to receive more stable footage. To produce a quality video interview, the subject was placed in front of a meaningful or neutral background. For example, employees of the Port Phillips Eco Centre were filmed outside of the community center. If the subject is stationary, the video camera was placed on the tripod to ensure stabilization, and the interviewer stood next to the camera to ensure that the subject had a positive angle in the footage when asking questions. The subjects wore lavalier microphones to capture the most quality audio possible.



Figure 12: All audio and visual equipment used.

To tell an engaging narrative, the documentary cannot consist of solely still shots of the subject. Pre-production planning was a must with each subject and community partner. Hampe (2007, 6) described the importance of pre-production planning, gathering visual evidence, and performing a non-static interview by describing the range of techniques that can be used when filming a subject. These techniques

include following the subject around the location as they answer interview questions, as well as allowing them to expand on the features or stories involved with the location, instead of interrupting them to move on to the next question.

We also captured traditional sit-down interviews. These incorporated professional lighting, highlighting the subject's face with as many light sources as possible. We sought to integrate professional compositional techniques into our inter-

our interviews such as the rule of thirds, the Fibonacci Spiral, and radial mass. The rule of thirds splits the compositional framework into three identical columns, with the point of focus located at the intersections of these columns. The Fibonacci Spiral centers the point of focus at the center of an infinitely curving spiral. Radial mass restructures the focus slightly below the center of the frame, with any other additional points of focus spreading out directly beside the main subject.

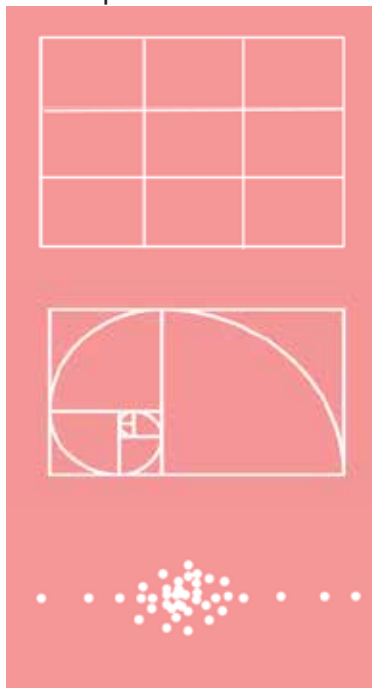


Figure : The Rule of Thirds (Top), the Fibonacci Spiral (Middle), and Focal Mass (Bottom)

Conducted interviews also involved prior research on each community partner and tailoring the interview questions to the accomplishments and features of each community partner's location. Additional features that helped diversify the documentary include B-roll footage taken on location, still photos taken on location or provided by the community partners, and environmental audio captured using wide-range microphones.



Figure 13: Edgar Caballero (Left) and Jonathan Chee (Right) being interviewed by the team using Rule of Thirds

3.2.2 Video and Audio Editing

After storyboarding the overall documentary and combing through the material to decide what was useful, we edited all the footage to create professional lighting, sound, and color quality. Then, we weaved all these techniques together in a smooth and visually compelling documentary that displays the size and scope of the impacts the MPC has had on the Melbourne area. Video and audio editing software used in the making of this introductory video include Adobe Premiere Pro, Adobe After Effects, and FL Studio 21.

To edit video, we used Adobe Premiere Pro. both for its capabilities in creating a quality product and for its ease in doing so. First, we downloaded clips needed for the documentary to a laptop and imported them into a Premiere Pro project. This project included all interviews, B-roll film, voice overs, songs, and transitions made in Adobe After Effects. When a video clip was imported, the audio and video of the clip was unlinked, separating them into two distinct objects, which simplifies editing either part. If a video clip was too long, the cut tool was used to shorten it. If the audio from the

video was not needed, it was easily deleted. If an audio clip was imported, it was shortened using the clip tool. If a song needed to fade out, the crossfade effect was used, and if a video needed to fade out, the dissolve effect was used.



Figure 14: Courtney Green's interview edited in Adobe Pro Premiere.

When editing the audio and creating the soundtrack through FL Studio 21, several practices were employed to ensure a quality product. The first task to tackle was the speech captured in our interviews. This process almost always involved three major practices of speech editing. First, the frequency spectrum was analyzed using a parametric equalizer to determine the main dynamic range of the voice in question. The outside frequencies were then cut off to ensure no high- or low-pitched noise would come through. Next, a multi-band compressor was added to the audio. The compressor ensured that the natural dynamic amplitude of recorded voice would be suppressed, or “compressed”. Compressing audio allows for a more natural listening experience and is more pointedly dialed in when using a multi-band compressor, as opposed to a single band. The last major step used in editing the voice recordings was employing a de-esser. The



Figure 15: Audio for the MPC Introductory video edited in FL Studio 21.

de-esser targets the frequencies that create harsh sounds in a microphone when speaking an ‘s’ sound or similar and dampen the effect.

The effective implementation of these methods allowed our team to create high quality footage and transitions. Thus, our team was able to effectively illustrate the themes synthesized in our recursive narrative process from the B-2022 and 2016-2017 teams.

Themes

The MPC is often viewed as a resource in the eyes of community partners, with the value of this resource being determined by the projects completed and the impact they make in Melbourne's diverse communities. This trend became obvious when viewing the gathered data. Our team sifted through the findings from the B-2022 and 2016-2017 teams as well as images captured by multiple sources, including WPI's marketing division, over the years. The B-2022 team

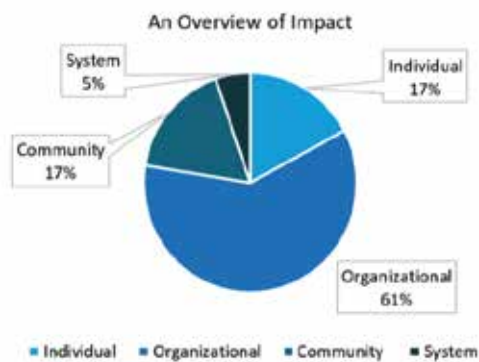


Figure 16: B-2022 team's graph on IQP target impacts

determined that the impact of MPC projects could be divided into four distinct groups: (1) on the organization, (2) on the community, (3) on the individual, and (4) on an organization's system. To identify the most salient outcomes from these ongoing relationships, our team combined these findings with our own interviews with community partners, in which we asked about the work that MPC students have completed as well as what value the MPC offers to their organizations. The most prevalent outcomes were utilizing students for projects to test new ideas, having the students offer fresh perspectives, and observing the unexpected benefits of these projects, in particular the relationships formed between students and staff or community members.

4.1 Expanding Organizational Capacity

“We’ve only got four staff and the caliber of the work the students have done is always really good”

***- Siusan McKenzie
Emergency Services Foundation***

Whereas many organizations look to MPC students to supplement existing programs or to complete field research, others see the MPC students as additional personnel to test new initiatives that community partners couldn't allot the proper time towards due to other responsibilities. According to Siusan Mackenzie from the Emergency Services Foundation (ESF), for example, “We've only got four staff and the caliber of the work the students have done is always really good and so for me it's a valuable set of hands.” With the time and people-power that the students provide the community partners, these new project ideas are able to be developed and brought to fruition. For example, in 2018 the ESF partnered with the MPC to re-evaluate their relief and support system for their staff, with the students making several recommendations to the ESF which were then applied, positively impacting the organization.

Without the MPC as a resource, these alterations would not have been feasible to pursue for the ESF.

These types of projects have typically led to one of two outcomes; the community partner realizes that the idea is not worth pursuing any further—without expending the organization’s own resources—thanks to the efforts of the students. More commonly, the results of the project are positive, allowing for the community partner to continue developing the project following the recommendations of the students. Courtney Green from the Brotherhood of St Laurence highlighted this by explaining that “[the students] have always been really valuable for us to look at who we can partner with to really test out ideas so that we can [...] take those conversations further.” Additionally, Jaime De Loma-Osoria Ricon reflects that “WPI projects have been catalysts for new initiatives at Banksia Gardens.”

4.2 Fresh Perspectives

“[A] bunch of bright students coming, they’re gonna bring fresh ideas”

- Peter Johnson, ARUP

Over the course of four site visits and sifting through previous reports and footage, our team found that community partners perceive the fresh perspectives offered by WPI’s IQP students to be incredibly valuable. Projects often change over the course of the term, with radical shifts in direction

being brought about by changing goals for a project, or because of the new viewpoints that the students offer—some of which the community partners had yet to even consider. These perspective shifts often come from having an outsider’s lens into an organization, with entirely different expectations between each group. Jonathan Chee—Chief Storyteller at the Banksia Gardens Community Centre—agreed, explaining that MPC students bring “fresh perspectives and ideas and the opportunity to discuss things that we might just not do day-to-day because we’re running programs, and to have the opportunity to reflect and discuss and consider things that we might not have...that is super, super valuable.”



Figure 17: BSL IQP team brainstorming ideas with BSL.

These fresh ideas can come about because of other factors, such as age or different majors. For many community partners, the MPC students’ age is a massive benefit as the organizations often work for the benefit of young people. Carly Siebentritt from the Commonwealth Scientific and Industrial Research Organization describes that “the joy is also that [the students] are quite, in some ways, closer to the age groups that we are working with. [They] are closer to teenagers than most of us.” Thus, the students’, youths’, and organization’s experiences are enriched by the

relationships and understandings that would not be otherwise available.

Incoming students also offer a seemingly endless amount of new ideas: “[A] bunch of bright students coming, they’re gonna bring fresh ideas. They’re not only looking at engineering aspects of problems, but looking at social and other aspects” said Peter Johnson from Over ARUP & Partners. The students often take these ideas, applying them with fervor to their projects, which can often lead to the development of networks.

4.3 Building Networks

When asked if any surprising benefits had arisen from the projects completed by WPI students, an many community partners spoke about deep bonds and connections that had formed throughout the duration of the projects. A majority of these connections lasted even after the end of the project, with many students keeping close contact with project liasons through social media.

“[Our organization had] the students doing that deep research and work alongside the campaign where I was meeting lots of different people, liaising with different stakeholders... local councils, MPs [Members of Parliament], and [the] community.”

- Anna Langford, Friends of the Earth

Outside of personal relationships, community partners similarly found that through the MPC projects, students—and through them, community organizations—were able to expand their network. Anna Langford, for example, says this about Friends of the Earth’s growing network, “[Our organization had] the students doing that deep research and work alongside the campaign where I was meeting lots of different people, liaising with different stakeholders... local councils, MPs [Members of Parliament], and [the] community.” While some networks are built by the resources and connections students provide, many others are formed from the combined efforts of the students working between each community partner. The simultaneous work completed by the MPC students can is often shared between community partners through a variety of differing methods, which leads new relationships between these organizations. Developed relationships lead to developing programs, such as the Banksia Community Gardens’ own project, Reengagement in Education and Learning (REAL), a program focusing on understanding and implementing flexible learning options. This program is a flagship for a network of sixteen local schools and other community providers. Further examples of network growth are seen in the



Figure 18: Abigail and Sarah Hanoona talking post-interview

Port Phillip EcoCentre, as explained by the founder Neil Blake: “the projects actually caused us to engage with certain individuals or organizations which we haven’t had really tangible

connections within the past.”

These connections—both personal and professional—are direct results of the projects orchestrated by the MPC and its community partners. These connections and more are featured prominently in the MPC Introductory video, described in section 5.1.

4.4 Providing Innovative Deliverables

While many projects center themselves around producing a tangible deliverable, many also produce recommendations for their community partners following an extensive research period. The value of research was exemplified by the responses of community partners such as Siusan Mackenzie, the CEO of the Emergency Services Foundation, “This kind of work is what keeps us running. A lot of research projects that the WPI students do underpin the campaigns we are doing so we know we are running our campaigns through evidence-based facts.” The value of the research holds true not just for the MPC but for all research project centers around the globe. The research conducted by the students is invaluable to the organizations that receive it, as the recommendations of the students lead to the improving of internal processes.



Figure 19: Banksia IQP student soldering heat sensors for their deliverable

The recommendations provided by MPC students can range from smaller suggestions, optimizing pre-existing processes, to much larger overhauls or massive research reports that define an entire field of study.

After completing a research project with Zoos Victoria, the IQP students provided a list of recommendations that entirely overhauled the organization’s methods of teaching, stated by Cyrelle Field, the education manager for Zoos Victoria, “[the recommendations were] a huge change, we had been teaching the same way for forty years... We went through the process of change following the project.” Similarly impactful research was the Hoarding Fire Safety Study conducted in 2016 by MPC students with the Metropolitan Fire and Emergency Services Board (MFB). The research conducted in this study were “used in the Coroners Court of Victoria; they’ve been cited in the press; they’ve been cited in international journals; they’ve been cited in international publications,” as stated by Julie Harris, MFB’s manager of At Risk Groups.

The research completed by IQP students, both at the MPC and abroad, is always positively reflected by the term’s end, with the final deliverables produced.

Project Outputs

The deliverable produced over the course of our IQP was a single 11-minute long video highlighting three specific outcomes from the MPC's 25 years of collaboration with community partners: expanding organizational capacity, building networks, and improving processes. It features the many community partners that work with the MPC. We focused on displaying interview footage captured by multiple IQP teams, both past and present, emphasizing powerful quotes from community partners.¹ These foci were chosen for how effectively they display the narrative our team formed from the material both collected and supplied. The MPC Introductory video functions as a template for videos to be completed by future MPC IQP teams and even for other WPI IQP Centers interested in creating anniversary videos that capture their Project Center's local and global impact. In addition, the team has provided organized interview, b-roll, and audio files, supplemented by a guidance document that includes all partners and subjects interviewed in both the B-2022 and C-2023 to the MPC center directors for use in future video IQP projects.

5.1 MPC Introductory Video

The MPC Introduction video that we created introduces WPI, IQPs, and the MPC in the first section, serving as

exposition. This information, as background knowledge, is integral towards displaying the broad range of impacts that the MPC has held. The first section of the MPC Introduction video consists of our animations and footage as well as B-2022 footage and photos from past Melbourne projects. The MPC Introduction video displays several statistics found by the B-2022 and 2016-2017 teams, including the number of community partners the MPC has collaborated with, the number of projects completed by the IQP teams, and the total number of hours students and faculty have given to these projects over the past 25 years.

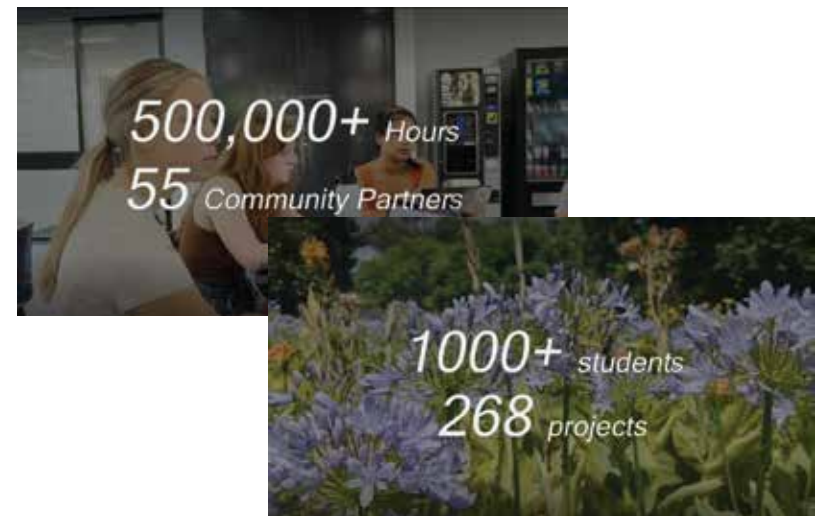


Figure 20: Screenshots of the MPC Introductory Video detailing MPC statistics

1. All quotes are available in supplemental materials section 3.0. Supplemental materials for this report can be found by searching for the project title at <https://digital.wpi.edu/>

Once the introduction section ends, the MPC Introduction video displays three of the many themes the MPC projects have focused on. These themes are presented through animated bubbles that flow and drip as transitions between each section. First is expanding organizational capacity, which features footage from the Brotherhood of St Laurence with accompanying quotes from Courtney Green. Additionally featured are quotes from Friends of the Earth Melbourne and Museums Victoria, with each quote being presented on a still image with photos of MPC teams.



Figure 21: MPC Introductory Video theme transition

A transition to and from the theme bubbles occurs and the MPC Introduction video begins its segment on building networks. The segment displays footage from Banksia Gardens Community Centre highlighting some of their past projects completed with the MPC, with a quote from Jonathan Chee narrating the footage. Additional quotes from Friends of the Earth Melbourne, once again accompanied by still images and pictures of the MPC students.

A final theme bubble transition occurs and the final theme segment begins, now focusing on improving processes. No live footage is displayed to include a more diverse group of community partners. Instead, quotes from Zoos Victoria, Emergency Services Foundation, and the Metropolitan Fire and Emergency Services Board as well as narration is shown and heard with accompanying stills of the organizations and the

students.

A quick narration is heard, explaining the lasting impact and legacies created by the MPC which fades into a montage of photos of community partners and their projects, with quotes from the Metropolitan Fire and Emergency Services Board, the Moreland Energy Foundation, and AFAC and Fire Protection Association Australia.

After the lasting legacies segment, the narrator is then heard asking a quick interview question: “If you had to describe the MPC in one word, what would it be?” This question is then followed by a montage of answers from the community partners, with each varied answer serving to bolster the reputation of the MPC.

Finally, a quiet transition to a still image background with an acknowledgement of the land is displayed, mirroring the beliefs of the organizations that the original inhabitants of the land, the native aboriginals, have the right to the land, and thanking them for the ability to use it.

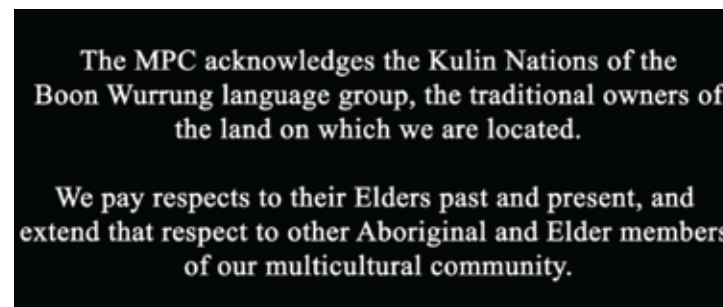


Figure 22: MPC Introductory Video acknowledgement of land

5.2 List of Quotes

Supplementing the MPC Introduction video, our team supplied a list of quotes in supplemental materials section 3.0 gathered from the community partners, organized to facilitate future teams' efforts to create additional themed videos for the MPC projects. The quotes included were collected by our team, the B-2022 team, and the 2016-2017 teams. We selected quotes with a range of observations, with many discussing past projects the MPC has completed or has aided the community partner in completing, while many others focused on what the MPC has been able to consistently offer the organization, whether through the aforementioned projects or simply having the MPC as a resource to utilize; alternately, we selected them for their ability to display the mission of community partners.



Figure 23: Quote used in the MPC Introductory Video

Many quotes were not utilized in the MPC Introduction video as they were not as applicable to an introductory video, but would be more readily applicable to a video themed around specific challenges, such as marine life or environmental conservation. If future teams wish to utilize these quotes in their future projects, the provided document of interviewees states whether it is required that they reach out to the community partners in question to attain permission.

5.3 Database of B-roll Film and Interview Footage

To create the MPC Introduction video, the team traveled to the site of several community partner organizations to collect footage for the documentary. The footage was captured utilizing professional compositional, lighting, and audio-visual techniques described in section 3.2.1. To organize these high-quality assets, our team created a database with all the raw video and audio acquired for the completion of our video. All footage will thus be accessible to future MPC teams tasked with creating additional themed videos that highlight the MPC's legacy in Melbourne, Australia.

The footage was divided into two distinct categories, each with their own divisions within them. The two main categories are listed as B-roll Film and Interview Footage. B-roll film is footage captured with the distinct purpose of displaying the sites themselves and any other interesting film that was used to illustrate the narrative being told in the MPC Introductory video, usually with any vocal audio existing as narration. Interview footage of numerous community partners was captured with the express purpose of supplementing the B-2022 team's footage. Interview footage is comprised of video footage taken from one unchanging angle, with multiple other short clips simultaneously taken from a multitude of differing angles. All of the footage captured was split between subdivisions depending on the device it was captured on. The footage was captured on the GoPro Hero 7 as well as the iPhones 12 and 13. The team utilized stability enhancing equipment including a tripod and Phone cage—both provided by the WPI ATC—and a gimbal stabilizer bought with the team's own funds, to be paired with the GoPro.

Recommendations

As a result of this Interactive Qualifying Project, our team was able to synthesize themes from the data gathered by the B-2022 and the 2016-2017 teams as well as footage captured by our team. We depicted this synthesis in a video that highlights the impacts of the MPC and its array of community partners. This video will be used to highlight and promote the lasting legacy of MPC projects at the MPC's 25th anniversary event, to be held at the Melbourne Museum in April 2023. Our video will additionally be featured on the MPC website.

The MPC Introductory video will serve as a template for future video-based project teams to reference when creating their own video deliverables. Furthermore, our team created the following recommendations for the incoming MPC anniversary team, future video IQP teams, and project center directors. These recommendations were derived from our team's experience in content creation, our team's experiences during the C-2023 IQP project term working with the MPC, and the findings provided in Section 4.0.

6.1 Recommendations for the D-2023 IQP Team

Recommendation 1: Interview Neil Blake and others on past project knowledge.

Based on previous meeting between our teams, it is our understanding that one of the two themed videos created by

the D-2023 team will address Australian marine life. From this understanding, we recommend interviewing Neil and others at the Port Philips EcoCentre.



Figure 24: Screenshot of one of our conducted interviews with April Seymore and Neil Blake from Port Philips EcoCentre.

The Port Philips EcoCentre has numerous projects detailing their extensive work on improving the condition of marine life, which we believe would be immensely beneficial to your final video. We suggest taking time to interview Neil Blake, April Seymore, and Fam Charko for specific projects focusing on Marine Life early into your IQP term. Neil will have the most likely have the greatest knowledge, as he has been a part of the most IQPs of the three, however all three of them will provide valuable material for your video.

6.2 Recommendations for Future Video IQP Groups

Recommendation 1: Learn audio and video programs prior to arrival.

Due to the extensive knowledge and effort required for video creation, it is imperative to become as knowledgeable and experienced with the group's chosen programs during the preparatory term and the first stage of the IQP term. We believe that this experience will make the creation process more efficient to create a high-quality video as the final deliverable. We recommend that in order to learn these programs, the team should utilize YouTube tutorials on each program in addition to any tutorials provided by the product company (i.e. Adobe tutorials). If the team chooses to use the same programs as our team, they can also utilize our final presentation and report, where we outline some of the main methods used in our editing.

Recommendation 2: Provide center directors with concrete material frequently.

When providing center directors with updates, an IQP team working on a video should provide short clips and content as updates as soon as they are created. This will allow center directors to attain a clearer vision of the product the team is producing, and thus allow the center directors to provide more specific feedback. This will also subsequently speed up the production schedule, with a clearer vision of the final product.

Recommendation 3: Maintain frequent contact with the preparatory team.

During the ID2050 term, video IQP teams should be in contact with the preparatory team frequently. This includes discussing findings, how best to pass along materials, and any gaps in content that will need to be filled by the second team. This will provide a smooth transition between teams and ensure an agreement in focus between the two teams. This agreement in focus is imperative, as the production materials provided by the initial team will dictate the workload and direction of the following team.

6.3 Recommendations for Project Center Directors

Recommendation 1: Ensure a preparatory team provides an organization structure.

As our team found, having data organization and video production in one term can prove to be a significant workload. Our team recommends that with future IQPs of this style, the center directors should load more of the organization to an initial team, which is also tasked with the data collection of interviews, quotes, and any video or other material. The collection of this material should also keep the focus of the following term's video in mind, in order to provide relevant materials. This would provide a stable starting point for the next IQP team to use for their synthesis and subsequent video production. A concrete way to implement this could be to ensure an organization structure is one of the deliverables for the preparatory team.

Recommendation 2: Use the ID2050 term for initial theme synthesis and other pre-production processes.

Our team found that having a full production schedule in the on-site IQP term caused some planning steps and processes to be truncated. We recommend that in the future, all pre-production planning that can be moved to the ID2050 term should be. This could include synthesizing themes from the on-site team that term, writing an initial draft of the desired narrative, identifying the audience, and any other relevant materials. This would also require substantial communication between the on-site team, center directors, and the video production team during the ID2050 term through regular meetings or frequent emails. These steps would allow for a more smoothly planned process in the subsequent term and divide the workload of the production team more evenly between the two terms.

Recommendation 3: Use the ID2050 term for initial theme synthesis and other pre-production processes.

In our team's work during this term, we found that having more frequent revisions and an open line of communication with center directors aided greatly in the efficiency of the production process. We recommend that future Project Centers that aim to create similar videos replicate this practice and improve upon it. Specifically, this would include reviewing work from the IQP on a regular schedule, and subsequently providing specific feedback for the team to build on. This could be in the format of a meeting, emails, or a mutually beneficial messaging platform.

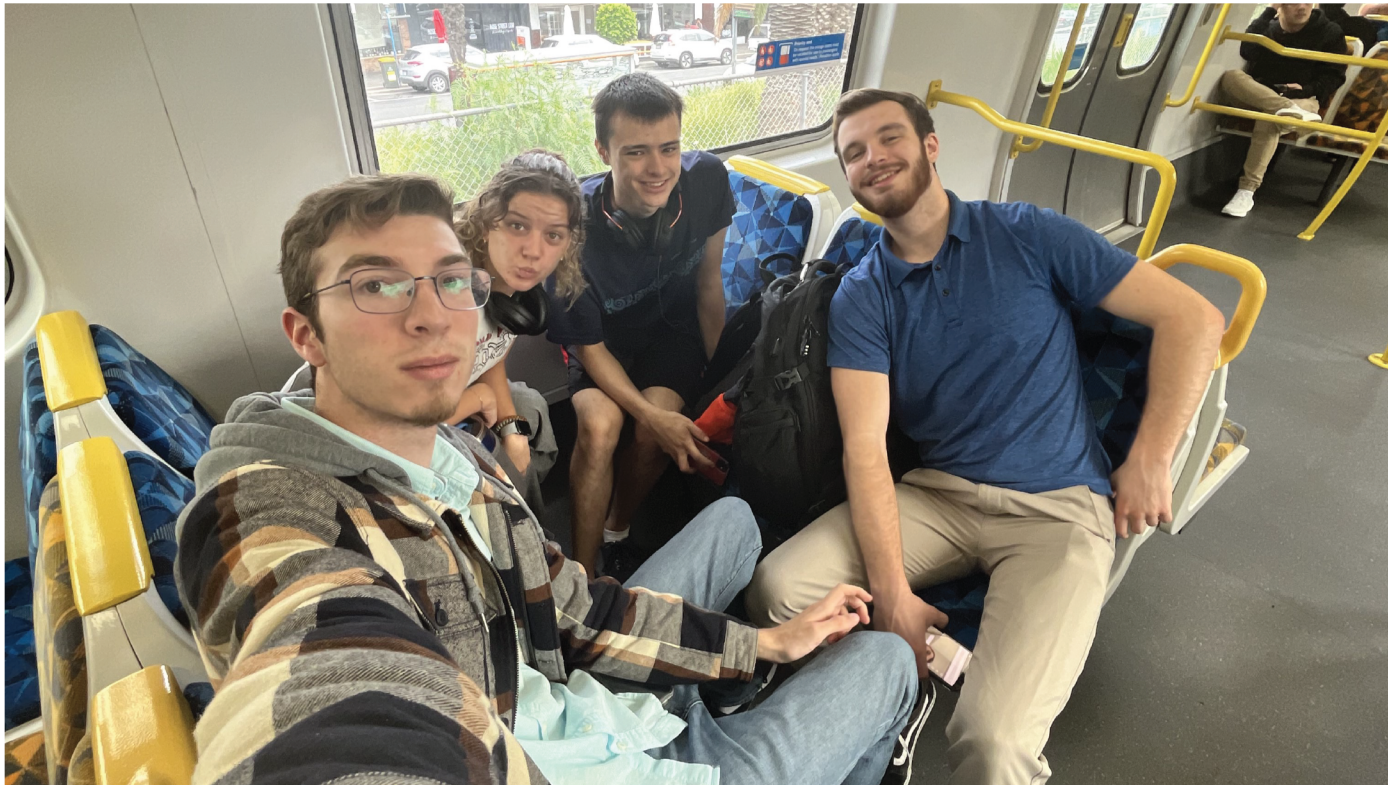
This would enhance the production process and schedule greatly and provide a more standard production schedule, as well as solidify the narrative flow of the video earlier in the term.



Figure 25: ID 2050 students presenting there plan for there IQP term.

Authorship

Due to the nature of our project, the work was evenly distributed based on individual skillsets, with Abigail Rauch, Joshua Eben, and Cameron Norton devoting a vast portion of time to the creation of the MPC Introductory video and Sean Merone writing and revising a significant portion of the IQP report. The abstract, acknowledgements, and authorship page were written by Sean Merone. The introduction of the paper was written collaboratively with all group members and was revised by Sean Merone. The background was entirely rewritten during the IQP period in Australia by Sean Merone and Joshua Eben, with revision efforts for this section led by Joshua Eben. Methodology was similarly altered to adapt to the changing methods utilized. Revisions to the methodology were written by Sean Merone and Joshua Eben. Results and deliverables were written and revised by Sean Merone. Recommendations were outlined by the entirety of the group before having been written and revised by Sean Merone. The conclusion was written and revised by Sean Merone. References were written by Joshua Eben. At all points during revision, all members of the group provided feedback.



References

- Ainley, E., Anderson, R., Morehouse, B., & Poppa, S. (2011, May 2). Supplemental Teaching Materials for CERES Community Environment Park. Digital WPI. Retrieved January 21, 2023, from <https://digital.wpi.edu/pdfviewer/9306sz86p>
- Argueta, J., Brown, N., Mittelman, D., Renda, B., Salvatori, R., & Smeal, A. (2009). An Assessment of Fire Safety in Australia's International Student Housing. Digital WPI. Retrieved February 23, 2023, from <https://digital.wpi.edu/pdfviewer/6w924c05j>
- Aufiero, M., Carlone, T., Hawkins, W., & Murdy, S. (2011, May 2). Analysis of Preventable Fire Fatalities of Older People and People with Disabilities. Digital WPI. Retrieved February 23, 2023, from <https://digital.wpi.edu/pdfviewer/05741r90h>
- Australia Bureau of Statistics. (n.d.). Australia. 2021 Australia, Census All persons QuickStats | Australian Bureau of Statistics. Retrieved November 14, 2022, from <https://www.abs.gov.au/census/find-census-data/quickstats/2021/AUS>
- Bone, M. (n.d.). Mark Bone. Retrieved February 23, 2023, from <https://markbone.com/>
- Bukowski, C., Griffin, J., McLoughlin, A., & Teixeira, A. (2016, April 29). Developing an Exhibit to Promote Cultural and Environmental Awareness in CERES's Cultural Village. Digital WPI. Retrieved January 21, 2023, from <https://digital.wpi.edu/pdfviewer/8336h226r>
- Carlson, K., Cochran, I., Day, J., & Seely, C. (2017, May 2). Legacy Down Under: Documenting and Promoting the Impacts of the Melbourne Project Center. Digital WPI. Retrieved November 29, 2022, from <https://digital.wpi.edu/pdfviewer/xd07gt05g>
- Dupis, L., Lynch, K., Prigge, E., & Zajmi, D. (2022, December 14). Assessing the Impacts of Worcester Polytechnic Institute's Melbourne Project Center. Digital WPI. Retrieved January 18, 2023, from <https://digital.wpi.edu/pdfviewer/q237hw313>
- Estrella, Z., Leonard, J., Baracchini, G. M., & Sherlock, N. (2016, December 14). Interactive Environmental Education: Developing an African Village Exhibit. Digital WPI. Retrieved January 21, 2023, from <https://digital.wpi.edu/pdfviewer/41687j22g>
- George, T., O'Connor, M., Romankiw, J., & Zhang, M. (2019, April 30). Ethnographic Film Study of Indonesian Culture and Climate. Digital WPI. Retrieved January 21, 2023, from <https://digital.wpi.edu/pdfviewer/6969z3314>
- Hampe, B. (2007). Making Documentary Films and Videos: A Practical Guide to Planning, Filming, and Editing Documentaries. Macmillan.
- Henson, K., Zuccolo, L., Filippou, S., & Callahan, A. (2016). Twenty years down under: Documenting the history and assessing the impacts of WPI's Melbourne Project Center. : Worcester Polytechnic Institute.
- Kuhn, B. D., Martino, A. M., Moseley, M. B., & Souza, M. M. (2004, March 4). Key Performance Indicators for Computer Fire Models. Digital WPI. Retrieved February 23, 2023, from <https://digital.wpi.edu/pdfviewer/8k71nh93p>
- Lustick, I. S. (1996). History, historiography, and political science: Multiple historical records and the problem of selection bias. *American Political Science Review*, 90(3), 605–618. <https://doi.org/10.2307/2082612>

- Simcoe, P. (2012, March 14). Helpful tips for improving promotional documentary video. Retrieved February 23, 2023, from <https://cgi.tutsplus.com/articles/helpful-tips-for-improving-promotional-documentary-video--ae-19449>
- Siska, M. J., Jenkins, T. D., & Schmeer, J. S. (2001, May 1). Water Supplies for Residential Fire Fighting. Digital WPI. Retrieved February 23, 2023, from <https://digital.wpi.edu/pdfviewer/xs55mc74w>
- University of Harvard. (n.d.). Strategies for qualitative interviews - sociology. Harvard Department of Sociology. Retrieved November 14, 2022, from https://sociology.fas.harvard.edu/files/sociology/files/interview_strategies.pdf
- Videomaker (Director). (2011, August 18). Documentary Storytelling: Story Basics.
- WPI's Melbourne Project Center. Melbourne Project Center. (n.d.). Retrieved November 14, 2022, from <https://wp.wpi.edu/melbourne/>