
MEETUP CULTURE AT WPI

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 on: May 31, 2018

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This report represents the work of WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review.

ABSTRACT

This project quantifies student-centered benefits of attending special interest meetings called “meetups”, and identifies barriers that impact student attendance to meetups, in order to provide recommendations for improving extracurricular education at WPI. Our objective is to ensure that WPI students understand the benefits of attending meetups in the greater Boston area that relate to their academic interests and professional development. The results of 322 student survey responses and multiple interviews suggest that WPI students are generally unaware of meetups and the benefits of attending them, but that the small percentage of students who have attended meetups report significant improvements to their educational experience and career prospects.

ACKNOWLEDGEMENTS

Our team would like to extend our sincere gratitude to the following individuals for their support and encouragement throughout the duration of this project:

Our project advisor, Professor Lane Harrison, who supported our team throughout the entire duration of the project. His enthusiasm, kind attention, and diligent guidance increased our passion for the project and allowed the IQP to be as impactful as possible.

Gideon Wulfsohn, founder of the Boston Machine Learning meetup, for taking the time to be interviewed by us and inspiring our team to think along the line of creating our own meetup group at a future date.

Bret McGowen, developer advocate at Google Cloud, for taking the time after the *Serverless Boston @ Google* meetup we attended to speak with us about what it is like to be a speaker for a meetup and sharing with us his ideas of meetups in an unreserved manner.

Christine Sharry, Director of Student Activities at WPI, for taking the time to be interviewed and for providing us with information regarding the logistics of transportation to Boston by WPI as well as enlightening us on the steps needed to get approval to hold a meetup on campus.

The many students who gave us their input regarding their attendance of meetups, whether it be through our student survey, interviews, or a combination of the two. Your opinions provided us with information that has been invaluable to the completion of this project.

EXECUTIVE SUMMARY

Meetups are events where people meet face-to-face to share experiences and swap ideas about a particular line of thought in the contemporary world. Meetups provide a means to connect with people from within one's local community as well as with the global community. One of the most popular ways of knowing what meetups are and where they are taking place is through the social networking site, Meetup.com. This website brings people together in the real world around a common theme or interest. Though Meetup.com is a social media site comparatively less discussed in the society, it goes beyond Facebook and Twitter to facilitate real-life interaction in a world where so much of our communication is digital [25]. Meetups are common in big cities such as Boston and San Francisco, yet the findings of our study suggest that many Worcester Polytechnic Institute (WPI) students have either not heard of meetups or have not been attending.

The purpose of this project was to understand the benefits of attending meetups, to envisage, and determine factors that could impact attendance to these events and provide possible solutions so as to facilitate attendance by WPI students. In carrying out this project, we surveyed WPI students, both undergraduate and graduate, with an online questionnaire asking about prior experiences with meetups, the type of meetups they were interested in, and what they would like to see WPI provide that would enable them attend meetups. We conducted face-to-face interviews with students who said they had attended meetups and, in addition, we interviewed the Director of Student Activities at WPI. Our main focus was the meetups being held in Boston. The interviews helped us determine what was preventing students from knowing about meetups or attending meetups in Boston. We found that most students at WPI did not know exactly what a meetup was. Also, in terms of possible solutions to the problem of attendance to meetups, the students said they would prefer some type of monthly or weekly email update on the meetups being held in Boston, as well as the provision of transportation by WPI to and from these events.

With the knowledge gained from the survey and interviews, we were able to determine the best possible solutions and made series of recommendations to students, faculty, and WPI. Our focus was to get the word out to students about meetups and its potential benefits so as to motivate them to attend.

Barriers to Meetup Culture at WPI

Through our student interviews and survey, we identified several problems that could make it difficult for students to attend meetups:

1. Lack of knowledge about what a meetup was.
2. Lack of information about when meetups were held.
3. Lack of easy transportation to and from the meetups.
4. Unavailability of time to attend meetups due to busy academic schedules.

Campus Survey Results on Meetup Perceptions and Attendance

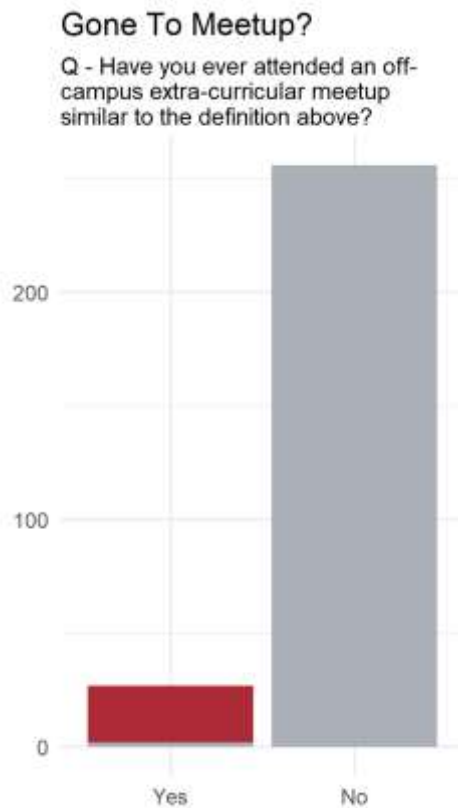


Figure 0.0: Only a very small number of WPI students have attended an off-campus extra-curricular meetup.

Figure 0.0 shows the distribution of students that had attended meetups and who had not. From the survey, we found that out of the 322 students who participated in the survey, only 25 students knew what a meetup was and had actually gone to one, while the rest

had either not heard of or been to a meetup. These results suggest that meetup culture was fairly nonexistent in WPI and raises broader issues for students, WPI, and administration.

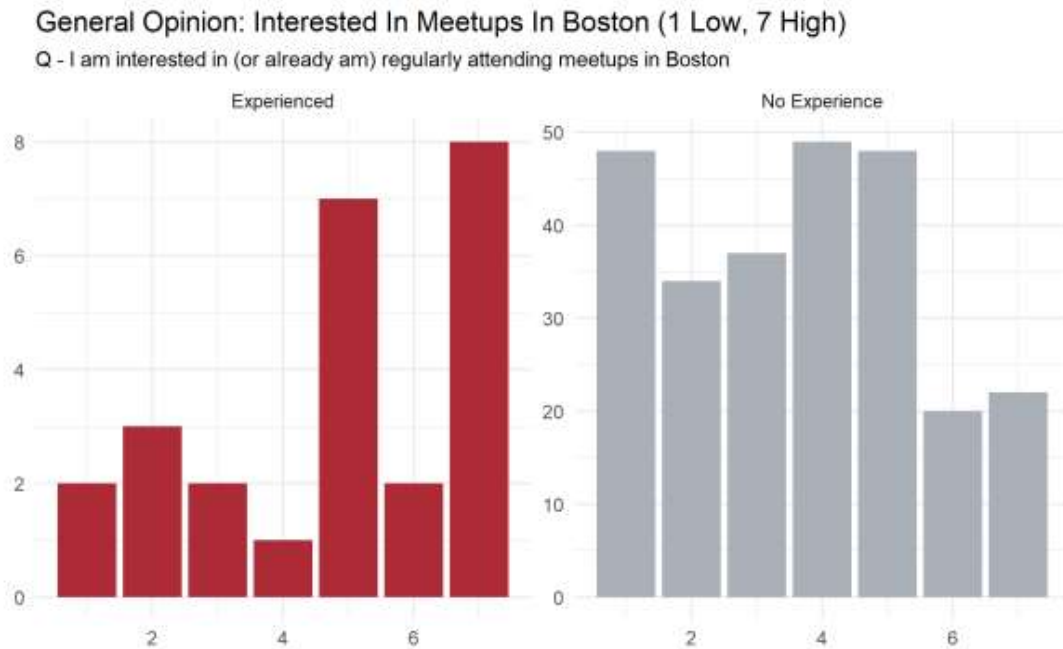


Figure 0.1: Students with meetup experience generally show high interest in (or currently are) regularly attending meetups in Boston while students with no meetup experience are generally not interested.

The figure above, **Figure 0.1**, shows Likert responses for one of the questions we asked on our survey that we sent out for students. The statement was “I am interested in (or already am) regularly attending meetups in Boston.” Based on the graph, most students who had gone to meetups agreed with the statement and on the other hand, the responses from students with no meetup experience were more diverse and more skewed towards the disagreement side. This figure is very important because it shows that students who attend a meetup are likely to attend more meetups as opposed to students who have never been to one.

Recommendations to Enhance Meetup Culture at WPI

To counteract the nonexistent meetup culture at WPI, we propose several recommendations:

Students & Meetups:

1. Log onto Meetup.com to look for meetups in your interest area
2. Student clubs could send out weekly or monthly list of meetups
3. Plan the month or week around an interesting meetup
4. Discuss meetups with friends and other students about upcoming meetups and how to attend
5. Get approval to go to a meetup as a club and talk to Student Activities about possible transportation
6. Organize carpool as a means of transportation to meetups

Faculty & Meetups:

1. Incorporate the attendance and advertisement of meetups related to courses in the curriculum
2. Adapt homework assignments around group attendance of meetups.

WPI Administration & Meetups:

1. Incorporate the advertisement of meetups talks by faculty and students into the school infrastructure
2. Provide means for students to propose and advertise meetups across campus
3. Plan and organize meetups on campus, for example at the new Foisie Innovation Studio
4. Provide finances for transportation from WPI to meetups and back

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1 INTRODUCTION

The meetup culture in Worcester Polytechnic Institute (WPI) deserves more recognition from students and faculty across campus. The goal of a meetup is to allow people to be more involved with offline groups which share the ideas and activities that matter to them in order to encourage people to get together and be at their best.

Since Boston is the biggest hub in the Northeastern area, many meetup events have been organized in the area with a wide range of purposes from technical discussions to casual social gatherings. Despite various meetups about key topics in the academic fields, many students at WPI are not aware of these useful events and, as a result, miss the opportunities to develop their own skills or expand their repertoire. According to our survey, only about 8% of the students are experienced with Meetup, and more than 80% either do not know anything about or have not been to these events. Since any meetup is a great chance for students to develop their personal skills and obtain various benefits such as job opportunities and insights from people of their major fields, missing out these events due to lack of awareness, is a huge loss.

Several universities, such as MIT and Harvard University, have the advantage of distance as most of the meetups are organized within or near to their campuses, hence the students in these universities would not miss out much on these events and would enjoy the benefits that these meetups may bring. The occurrence analysis of meetups in Boston indicates that many meetup events are located on the MIT campus or in nearby area of the city. Many other universities near to the area have also been successful in encouraging students to attend meetups. For example, Clark University launched a meetup to promote ballroom dancing during the year of 2012, inviting, for a small fee, both students and adults. Another example will be the Toastmasters meetup group which is organized by MIT students and faculties to encourage and instruct the art of public speaking.

Despite several top universities recognizing and promoting meetup culture to the student body, WPI has yet to assess why many students miss out on the opportunities to attend these events which will be hugely beneficial for their personal development. As a matter of fact, many WPI students are not actively engaged in meetup events because there is a lack of necessary information and facilitation to raise the awareness of the students and support them in going to these events. Consequently, WPI students lose out on potential

learning experiences of their study interests, as well as job opportunities that may be available for them if they choose to attend these events and meet people in the industry.

For the project, we gathered data and quantified the current meetup attendance through wide-scale survey and interviews and put forward a set of carefully constructed recommendations with the hope of improving the meetup culture in WPI.

In this project, we investigated Meetup.com, a social media website. We took cognizance of its rudimentary background, as well as its notable successes in accommodating interactions between people of the same field of interest. We also looked into current extracurricular activities in WPI that show some resemblances with the nature of meetup and discerned the differences between these forms of social gathering in order for the readers to gain a better understanding of meetup culture.

After gaining basic knowledge about meetups, both from the website and from attending an actual meetup, we generated surveys targeting WPI students of all majors and carried out interviews with students and industry experts to support our study. We analyzed the data we collected by focusing mainly on the level of awareness of students toward meetups and their experiences at meetups and other events that are similar. In addition, we focused on student's opinions regarding how WPI could promote meetup culture to the students. The results of this analysis allowed us to provide recommendations that should encourage WPI students to participate in the meetup culture and enjoy full benefits of meetups.

2 BACKGROUND

Meetups are events that have been around for some time and have been the center focus of a few articles and studies. Here, we will use those materials to discuss the significance of offline communities and a website, Meetup.com, whose importance is paramount to the history of meetups. Meetup.com can help someone find meetups that are local as well as in more distant places. Also, we will compare meetups to other extracurricular activities that students at WPI have participated in.

2.1 OFFLINE AND ONLINE RELATIONSHIPS

Americans use the Internet to enhance their daily routines [19]. The Internet is a medium where people access information; chat, discuss, and confide in one another [20]. Initial interactions in the online community promote the need for individuals to meet in the physical world with those who have similar interests and backgrounds [32]. Past research has found that members who attend events where people come together in the physical world often benefit from strengthened interpersonal ties, enhanced bonding, and ‘alloy’ social capital (social capital embedded in relationships maintained both online and off) [14, 23].

A widely-reported 2006 study [15] argued that since 1985, when gatherings in the virtual world increased, Americans have become more socially isolated, the size of their discussion networks in the physical world declined, and the diversity of those people with whom they discuss important matters decreased. In particular, the study found that Americans have fewer close ties to those from their neighborhoods and from voluntary associations [9].

Meetups are a blend of the offline and the online communities. They are events created and organized online where multiple, seemingly unrelated online community members meet physically to share information and form meaningful interpersonal connections [12]. The idea of meetups was coined through the website Meetup.com.

2.2 ABOUT MEETUP.COM

Meetup.com is an online social networking website that facilitates in-person group meetings in various localities around the world. Meetup.com allows members to find and join groups unified by a common interest, such as hobbies, technology, games, politics, or health [1].

History

Meetup.com was founded in June of 2002 by Scott Heiferman, Matt Meeker, and Peter Kamali. It came to national attention, when an employee pushed Heiferman to meet with the Governor of Vermont, at the time, Howard Dean, to discuss how the Governor might make use of the site for his 2004 Presidential campaign. Governor Dean agreed to say, “Join your local Howard Dean Meetup,” after each speech, thus pushing the site into the forefront of online political organizing and national prominence [6]. Even Barack Obama, the 44th President of the United States, also used the website when he initially campaigned for a position in U.S. Congress, as a Senator from Illinois. This in particular, helped burnish Meetup’s brand [27].

In 2005, Heiferman and his team decided to charge its meeting organizers a flat rate of \$19 a month to create a viable revenue stream and hopefully get rid of the low-quality meetups that were sometimes held. When this change was made, Meetup.com lost 95% of its website activity. However, in the years following the announcement, Meetup.com recovered. The website now has two types of fees required of meetup organizers: a “Basic” subscription fee of \$9.99/month for up to 4 organizers and 50 members, and an “Unlimited” subscription fee of \$14.99/month for unlimited organizers and members. Meetup.com has become a profitable business with an estimated growth of 50% in quality meetups [27].

Usage

Within two years of starting Meetup.com, there was over one thousand Meetups and within six years, there was more than 10,000 [31]. By November 2017, Meetup.com had over 35 million members who participated in nearly 300,000 different meetup groups that hosted 500,000 meetups every month in over 180 countries [16]. Meetup.com has greatly expanded the meetup culture both locally and otherwise. The website has greatly increased the number of meetup groups and their usability, thus buttressing the effectiveness of the Internet in promoting community experience in the modern era [17].

Functionality

To find a meetup, users enter the topic that they want to know more about and the city in which they live. The website will help them locate a group which they can arrange to join. For users who only enter a location with no topic, possible meetup groups will also be available. For example, if a Worcester Polytechnic Institute student wanted to find a Computer Science related meetup in Boston, Massachusetts, the student would type “Computer Science” within “50 miles” of “Worcester, MA” in the appropriate search fields, and then click the search icon. Meetup.com would then return several meetup groups, from which the students can explore and choose meetups of his or her interests [21].

Registration for this website is free and registered individuals then log in as members. To join a group, one is required to click on the button that says, “Join us!” on the right-hand side of the meetup group page. Depending on the meetup group, a user might be required to fill out information about oneself and then wait for approval to join the meetup, or the approval may be optional, and the user can join without any restrictions. Usually, a user is required to join the meetup group before signing up for one of their meetups.

To sign up for a particular meetup within a group, some groups require one to just click the “Join” on the right-hand side of the meetup page while others may require one to also RSVP, that is to notify the meetup organizers that one will indeed be coming to the meetup. For the meetups that are free for attendance, that is all it would take to sign up for a meetup.

However, not all meetups are free. For example, the Boston Online Marketing Group usually holds their meetups at Impact Hub Boston and occasionally in other locations. At other locations, the meetups are free for everyone, however, if the meetup is held at Impact Hub Boston, attendance is free for Impact Hub Boston members, and \$15 for the general public. Usually coordinators of the meetups have one pay the money through Eventbrite tickets or at entrance to the location of the meetup. Some meetups allow one to RSVP through the Eventbrite website. Eventbrite is a website that meetup coordinators use to register their event and where users can buy their registration ticket. It helps event coordinators to keep track of who registered and whether the users paid the ticket price, if needed.

Bought by WeWork

On November 28, 2017, it had come to public attention that WeWork Cos., known for bringing people together in common spaces to work or live, bought Meetup.com for reportedly less than \$200 million [29]. Meetup.com's Chief Executive Officer and co-founder, Scott Heiferman says that the new goal for Meetup.com's 35 million-member platform is to transform it into "a new type of billion-member social service -- one that cements the intimate connections between people in a way that makes us feel more connected" [10].

2.3 EXTRACURRICULAR ACTIVITIES AT WPI

In WPI, there are many opportunities for students to participate in extracurricular activities in a form of social gathering for both academic and recreational purposes. Many forms include: Hackathons, Workshops, Conferences, and Club Meetings. Understanding these types of social gathering would allow us to recognize their similarities and/or differences from a meetup event.

The common characteristic for these events is that most of them are on-campus events. These events usually take place either in the lecture halls (e.g. Upper/Lower Fuller Hall) or in outdoor areas around the school (e.g. the Quad), depending on the nature of the events. Due to this, students are more likely to attend the events as they do not have to worry about transportation. Moreover, events generally occur during the late afternoon when most students are already done with their classes, or during the weekends, thus students can usually fit these events into their own calendars without being worried too much about time conflict. However, these events do not substitute for meetups, except for in the case of a hackathon meetup.

Hackathon has been very successful in WPI since there is a good number of students participating in the event. Often tailored for students in Computer Science or Robotic majors, Hackathon in WPI is a 48-hour event where students can come together and form a group to build anything or do any project that they want to be recognized by. Hackathon manages to capture the attention and interest of students that, in fact, there has been over 200 colleges hackathons with 65,000 participants sponsored by Major League Hacking across the US [8]. One reason that makes hackathon successful is that students get to have fun around people of the same interest while learning as they proceed with their projects. Within a limited amount of time, the hackathon allows students to exert

their creativity and bond with their teammates in order to achieve a common goal. Many of the skills and experience from the hackathon are crucial for them to develop themselves and be prepared for their future endeavors within the field. Hackathon is not perfect, however, as some students find it bothersome to work on tight schedule and have little sleep. Moreover, many are not confident about their current skills and feel that they may hinder the progress of the group [8].

Workshop, while similar to Hackathon, is much more formal and is usually carried out in a classroom, a conference room, or in a big common area where participants are trained and provided instructions. In WPI, there are many workshops available for different majors, unlike a Hackathon which mainly targets students with coding background. Students who attend workshops seek for new knowledge, and the workshop environment allows them to interact with each other and share ideas to improve their learning processes [28]. Since workshop has a lot of focus on hand-on practices, participant-involvement is greatly required and thus may not be fitting to certain topics where such practices are not applicable.

Conference is another form of academical gathering that has been fairly common in WPI. Similar to workshop, it is a formal meeting that is not limited to any certain fields and is monitored by the expert(s) of the field. Different from workshop, conference progresses with the experts delivering their opinions, following with a session where the speaker and the audiences exchange their views [30]. On one hand, most of the interactions are between the participants and the experts, hence the participants do not interact with each other as much as the former forms of gathering. On the other hand, a discussion with the expert is effective in confirming our current knowledge and encouraging higher level of thinking, thus making conference a valuable learning experience. Since people who attend conference usually have a certain degree of knowledge regarding the topic of the conference, those who are still new to the field may find it difficult to grasp the new information introduced in the conference.

Lastly, a group meeting is probably one of the most common variations of social gathering in WPI as there are many groups and societies in WPI for students to join in and interact with others. These group meetings are relatively informal with more flexible meeting schedules and locations. The discussion that is held during a meeting can vary from a serious training or planning towards some events, to just a moment for its members to hang out and talk about their daily lives. Some of the group meetings also welcome new people outside of the groups, and in some rare occasions outside speakers

are invited to help with skill training. Since members of the same group share similar interest, group meeting is very effective in fostering bonds between participants and allow them to enjoy having social interaction outside of the classroom. However, since many group meetings are not necessarily strict about its planning, participants may be more likely to skip out many meetings for their personal stuffs such as school projects or homework.

In summary, we found that WPI has been fairly successful in having many extracurricular activities for students to participate and develop themselves. However, most of these events are held within the campus, and we felt that WPI students would appreciate exposure to the community outside of the campus to further enriching their knowledge of the field. As Meetup is a suitable medium for WPI students to explore even more opportunities from the community outside of WPI, we believed it is necessary for WPI to promote Meetup culture in WPI and facilitate students in attending meetup in Boston as to benefit their learning experience.

3 FORMATIVE RESEARCH: EXPERIENCING AND EVALUATING MEETUPS IN BOSTON

The goal of this project was to collect data and determine whether a meetup culture existed in WPI or not, and what factors led a student to either not know about or not attend a meetup. Before we conducted deeper research, we needed to fully grasp the concept and purpose of a meetup with its underlying benefits. At that time, our individual knowledge in meetup culture was lacking so we took it upon ourselves to use Meetup.com to research several meetups and collect data from January 2016 to December 2017. Meetup.com has a complete list of meetups for each meetup group dating back to its inception [13]. We recorded information such as the type of meetup, the number of members in the meetup group, the start and end times of the meetup event, the price of the meetup, and the various locations where the meetup had been held with the associated addresses. Some of this data can be seen in **Figure 3.0**.

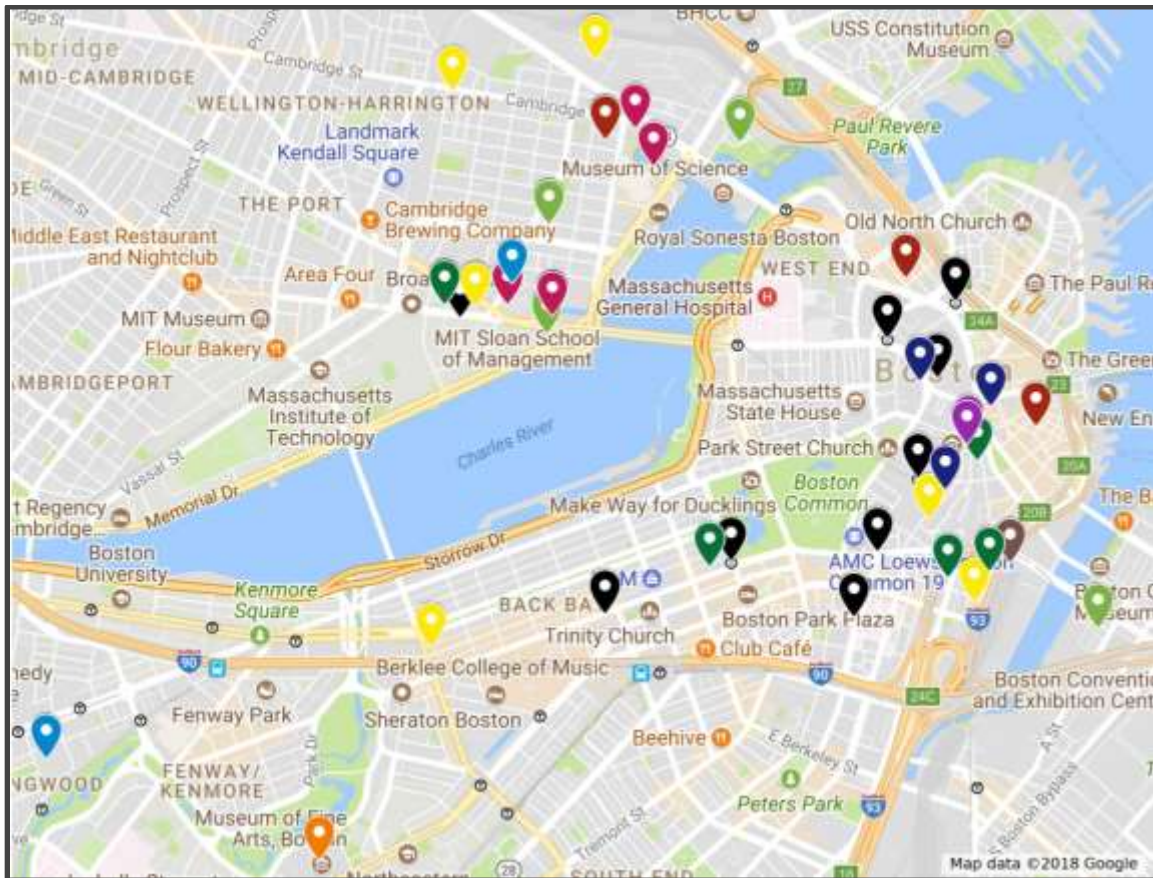
Figure 3.0: To assess the diversity and frequency of meetups in Boston, we researched and categorized meetup groups and events from 2016-2017.

Group Size	Location Name	Address	Meetup Title	Start Date/Time	End Date/Time	Price
540 Impact Hub-Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	Summer Friday Lunch and Learn: Social Media for Growth	Fri Aug 11 12:30 PM	Fri Aug 11 1:00 PM	\$15
540 Impact Hub-Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	Digital Marketing Fall Lunch & Learn: Google AdWords	Fri Sep 29 12:30 PM	Fri Sep 29 1:00 PM	FREE
540 Impact Hub-Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	Digital Marketing Fall Lunch & Learn: Google Analytics	Thu Nov 9 12:30 PM	Thu Nov 9 1:00 PM	\$15
540 Impact Hub-Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	Digital Marketing Fall Lunch & Learn: 2016 Digital Trends	Fri Dec 1 12:30 PM	Fri Dec 1 1:00 PM	\$15
1794 Museum of Fine Arts	2101 Commonwealth Avenue, Brighton Campus of Boston	2101 Commonwealth Avenue, Brighton Campus of Boston	Etalabon Live: The Abstract Cabinet Exhibit	Sat Nov 4 2:00 PM	Sat Nov 4 4:00 PM	FREE
1794 Museum of Fine Arts	405 Huntington Avenue, Boston, MA 02115	405 Huntington Avenue, Boston, MA 02115	MFA First Friday Social Art Evening	Fri Nov 3 5:45 PM	Fri Nov 3 9:00 PM	\$25
1794 Lunder Arts Center	1801 Massachusetts Avenue, Cambridge, MA 02140	1801 Massachusetts Avenue, Cambridge, MA 02140	Maughan Oliver: Walking Backwards Exhibit	Sun Oct 22 2:30 PM	Sun Oct 22 4:00 PM	FREE
1794 Mount Auburn Cemetery	560 Mt Auburn Street, Cambridge, MA 02138	560 Mt Auburn Street, Cambridge, MA 02138	Exploring Mount Auburn (Cemetery): Cultural Landscape - Leaf-peeping	Sun Oct 15 10:30 AM	Sun Oct 15 12:30 PM	FREE
1794 Holmes Library	180 Main Street, Andover, MA 01810	180 Main Street, Andover, MA 01810	Color and Light: Watercolors from the Collection	Sat Oct 14 2:30 PM	Sat Oct 14 4:00 PM	FREE
1794 Museum of Fine Arts	405 Huntington Avenue, Boston, MA 02115	405 Huntington Avenue, Boston, MA 02115	MFA First Friday Social Art Evening	Fri Oct 6 5:45 PM	Fri Oct 6 9:00 PM	\$25
945 Fab@C/C	121 Devonshire Street, Boston, MA 02108	121 Devonshire Street, Boston, MA 02108	#Fab@CFriday	Fri Sep 29 5:30 PM	Fri Sep 29 7:00 PM	FREE
945 Fab@C/C	121 Devonshire Street, Boston, MA 02108	121 Devonshire Street, Boston, MA 02108	Fab@C/C Halloween Workshop	Wed Oct 11 5:30 PM	Wed Oct 11 7:00 PM	\$10
945 Fab@C/C	121 Devonshire Street, Boston, MA 02108	121 Devonshire Street, Boston, MA 02108	Fab Fourth Friday	Fri Jul 26 5:30 PM	Fri Jul 26 7:00 PM	FREE
945 OC Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	OP & ART Launch Party	Fri May 5 5:30 PM	Fri May 5 7:00 PM	FREE
2021 #eWork South Station	745 Atlantic Avenue, Boston, MA 02111	745 Atlantic Avenue, Boston, MA 02111	HackerNed Boston August Tech Social	Tue Aug 16 6:30 PM	Tue Aug 16 9:00 PM	FREE
2021 OC Boston	50 Milk Street, Boston, MA 02110	50 Milk Street, Boston, MA 02110	HackerNed Boston October Tech Social	Thu Aug 4 6:30 PM	Thu Aug 4 9:00 PM	\$10
2021 Zenc	27 Water Street, Cambridge, MA 02143	27 Water Street, Cambridge, MA 02143	HackerNed Boston November Tech Social	Tue Nov 15 6:30 PM	Tue Nov 15 9:00 PM	FREE
2021 Alumnus Asylum	10 Tyler Street, Somerville, MA 02143	10 Tyler Street, Somerville, MA 02143	HackerNed Boston January Tech Social	Thu Jan 19 6:30 PM	Thu Jan 19 9:00 PM	FREE
2021 Plug Cambridge Crowing	618 Cambridge Street, Cambridge, MA 02141	618 Cambridge Street, Cambridge, MA 02141	HackerNed Boston February Tech Social	Mon Feb 27 6:30 PM	Mon Feb 27 9:00 PM	FREE
2021 Zaplin	25 First Street, Cambridge, MA 02141	25 First Street, Cambridge, MA 02141	HackerNed Boston March Tech Social	Tue Mar 28 6:30 PM	Tue Mar 28 9:00 PM	\$5
2021 #eWork South Station	745 Atlantic Avenue, Boston, MA 02111	745 Atlantic Avenue, Boston, MA 02111	HackerNed Boston May Tech Social	Tue May 2 6:30 PM	Tue May 2 9:00 PM	\$5
2021 #eWork South Station	745 Atlantic Avenue, Boston, MA 02111	745 Atlantic Avenue, Boston, MA 02111	HackerNed Boston June Tech Social	Mon Jun 11 6:30 PM	Mon Jun 11 9:00 PM	\$5

3.1 MAP OF MEETUP LOCATIONS

Included below is a map, **Figure 3.1**, that showcases some of the locations where meetup groups hold their meetups.

Figure 3.1: Map of meetup groups with their various meetup locations and nearby transportation



Map was created using Google Maps.

Key: Meetup Groups	
<ul style="list-style-type: none"> ● Boston AI Meetup ● Boston CSS ● Boston Art ● HackerNest Boston Tech Socials ● Serverless Boston ● Boston Android Meetup 	<ul style="list-style-type: none"> ● Boston Online Marketing Group ● Boston Machine Learning ● CIC Cambridge
Key: Public Transportation	
<ul style="list-style-type: none"> ● South Station ● MBTA stops 	

Each meetup group is assigned a color that is pinned to some of its past locations; for example, HackerNest Boston Tech Socials, a meetup group that holds monthly meetups, is denoted with yellow. On the map, one could see that this meetup group holds its meetups not only in Boston, MA, but in Cambridge, MA as well. Some of its popular locations include WeWork South Station and Cambridge Innovation Center Boston (CIC Boston).

Not all the locations of meetups could be included on the map, for example, Boston Art, represented by an orange pin, is a meetup where people over the age of 21 look at art together in Boston art galleries and neighborhood open studios. On our map, one can see that one of their meetups was held at the Museum of Fine Arts, Boston, but there have been other locations such as the Lunder Arts Center in Cambridge, MA, and the Holmes Library in Andover, MA, where meetups have been held, but were not included in the map.

Some meetup groups are based in the Boston area, but the particular event might be held in a nearby city such as Cambridge, MA because of the location of the sponsors such as Google. Also, in order to attract students from colleges such as Massachusetts Institute of Technology (MIT) and Harvard University, meetup groups can decide to hold their events in cities other than Boston.

South Station is denoted by the brown pin and the MBTA stops are indicated by the black pins. We included these public transportation sites to show how close they are to the meetup locations. We expect that knowledge of the public transportation sites would encourage students to attend meetups, especially if they do not have private means of travel.

3.2 OUR MEETUP EXPERIENCE

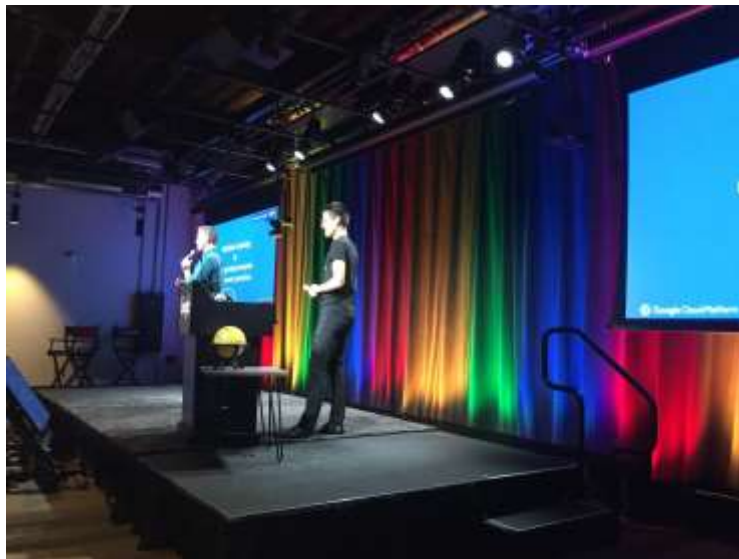
After researching some of the meetup groups and the start and end times of some of the meetups held, we got a slightly better understanding of a meetup. But we knew that our understanding could not be anywhere near complete without experiencing a meetup for ourselves. So, we picked a meetup that was coming up from the list of meetups that we gathered. We logged onto Meetup.com to find a meetup that fitted our schedules and that we were interested in. We hoped for one on the weekend, but we settled for one on a

weekday. The meetup was called *Serverless Boston @ Google* and it was held on November 2nd, 2017.

On that day, our team met in the Fuller Labs building at WPI at about 3pm. We requested an Uber car as transportation from WPI to the Union Station. From there, we took a train to the South Station. From the South Station, we took the Massachusetts Bay Transportation Authority (MBTA) to the Kendall/MIT stop, and then walked about three minutes to reach the Google Cambridge location.

When we entered the building, there was no security check. We were just given badges that already had our names on them, and a man named Bret escorted us to the room the event was going to be held in. The room had a stage with a velvet rainbow curtain backdrop, two projectors: one on each side of the stage with several chairs facing it.

Before the presentation by the speakers, there was a small social event. We ate the food provided, which was vegetarian friendly, and talked to the meetup organizers, Bob Balaban and Wayne Scarano; two female students from Northeastern University; as well as some of the other people who were there. Following the eating and mingling, was the presentation.



Two Google Cloud Developer Advocates, Bret McGowen and Yufeng Guo (pictured in **Figure 3.2**), collaborated to make the presentation. They talked about machine learning in a serverless world and also about the Google product TensorFlow, Google's fast, reliable, and scalable software library for dataflow programming across a range of tasks.

Figure 3.2: To situate ourselves to study meetups, we attended the *Serverless Boston @ Google* meetup. In this picture we see speakers Bret McGowen and Yufeng Guo presenting the topic of machine learning in a serverless world [24].

Even though the talk started 20 minutes late, it ended exactly at 8:30pm, which was the scheduled time for the talk to end. Some people decided to stay back and talk to the speakers and with one another. We waited for about 30 minutes until we were able to talk to the main speaker, Bret McGowen, in the form of an interview. By the time we finished the interview, it was past 9pm and we hurried back to make it onto the train, thus arriving at Worcester sooner than anticipated.

About 65 people out of 100 people that signed up to attend the meetup showed up. Some of the attendees can be seen in **Figure 3.3**. As mentioned by Bob, one of the meetup's organizers, usually only about 50% percent of people who RSVP for this meetup groups' events show up. However, Bob said that this meetup had the most attendees he had seen at one of his meetup events. According to him, the usual crowd size was approximately 30 people, but that day it was more than double the usual.



Figure 3.3: These are some of the attendees of the *Serverless Boston @ Google* meetup we attended. About 65 people, including students and industry experts, attended. The picture shows them watching the speakers present the topic of machine learning in a serverless world [22].

Our trip to the meetup took 2 hours and 30 minutes, the meetup itself including the interview with Bret took about 3 hours and 15 minutes, and the trip back home took about 2 hours and 32 minutes. The total time taken was 8 hours and 17 minutes, approximately 8 hours.

Table 3.0 shows a breakdown of the pricing for each method of transportation that we took to and from the meetup and the amount that each of us paid for the trip.

Table 3.0: The cost of attending a meetup is a possible barrier. It should be taken into consideration when planning a meetup. This is a breakdown of our expenses for the *Serverless Boston @ Google* meetup trip.

Serverless Boston Meetup Trip Pricing	
From WPI to Google	
Method of Transportation	Price
Uber (split 3 ways)	\$2.13
Train	\$11.50
*MBTA (w/ CharlieCard)/ MBTA (w/o CharlieCard)	\$2.25/\$2.75
To Google Total:	\$15.88/\$16.38
From Google to WPI	
Method of Transportation	Price
*MBTA (w/ CharlieCard)/ MBTA (w/o CharlieCard)	\$2.25/\$2.75
Train	\$11.50
**SNAP	FREE
From Google Total:	\$13.75/\$14.00
Trip Total: \$29.63/\$30.38	

* *CharlieCards are durable, plastic cards that may be used to pay one's own fare on the bus and subway. One can load any amount of money for one-way fares on it and also store any amount of money on it as a pass (1-Day, 7-Day, Monthly) for the bus or subway [4].*

** *WPI's Student Night Assistance Patrol (SNAP) that transports students from on-campus and off-campus sites to other on-campus and off-campus sites within one mile from WPI.*

Reflecting on Our Meetup Experience

Below are our individual reflections of our meetup experience. The three of us had different perspectives entering the meetup. Some of the things we felt and noticed were different:

Amanda

- Didn't know what to expect from the meetup because she had never been to one neither had she ever attended a conference. In addition, she knew nothing about the topic.
- Was excited to visit Google and interested in learning about serverless and machine learning.
- Noticed that there were five female attendees out of the approximately 65 total attendees.
- Noticed that people wanted to socialize and get to know one another: socialization seemed informal
- Felt that Bret and Yufeng were very informative, captivating speakers, who provided easy to understand demos.

Overall: Amanda really enjoyed the meetup and would attend another in Boston, but most likely will go by car because going from Worcester to Boston by train and using the MBTA took a long time. However, the meetup was worth the time and money spent.

Hung

- At first, didn't want to go because he had a homework assignment that was due one day after the meetup
- On the day of the meetup, he felt nervous and worried about the homework which somewhat overshadowed his anticipation of the meetup
- First time going to Google and was instantly awed by the Cambridge location, but was still distracted by worry over his homework
- Noticed that many of the people there had previously been to a meetup. He said he had lots of fun talking, socializing with new people, and completely forgot about previous worries.
- He said the speakers were hilarious and friendly and made complex topics seem easy to understand. The speakers had technical issues during the presentation, but he noticed that they handled it promptly and nicely.

Overall: Hung said he had a meaningful, eventful day, learnt many new things, and everything worked out fine. There was no disappointment and the meetup was worth the money and time spent.

Quyen

- Was experienced in going to talks and conferences, was familiar with the topic of machine learning, and had been to the Google Cambridge location before
- She said in comparison to conferences, people had more time and were more willing to socialize
- The talk was also technical and light-hearted.
- Presenters were professional speakers (their job was to present Google products)
- Found the presentation good and the demo, with example scenarios, were clear and easy to follow
- Thought it ended a little late, she noticed that many people were willing to stay behind and talk to others

Overall: Quyen found the meetup to be one of the best talks she had been to since it had a good mix of technical, non-technical, demo, and leading examples. She said a meetup is totally worth it, especially if planned ahead of time.

Our Overall Meetup Experience: As a team, we all agreed that the meetup we attended was a good, informative one with an interesting topic and easy to follow demo. This meetup, in our respective opinion, was worth it.

4 STUDY 1: CAMPUS SURVEY OF WPI STUDENTS' KNOWLEDGE AND OPINIONS OF MEETUPS

4.1 SURVEY METHOD

Due to the nature of our project which relied on the input of the student body for a satisfactory response, we prioritized survey generation and distribution as our main and vital method of data collection. Since the survey had high importance in identifying the core issues of meetup culture in WPI and making the appropriate suggestions for improvement of the current matter, we aimed to cover all of the questions regarding prior experience, attitudes toward meetup culture, and opinions on methods of improvement. While we wished to obtain as much answers from each student, we ensured that our survey was as brief and direct as possible so as not to discourage students from taking it. Moreover, we organized questions into appropriate sections in a logical order mainly to provide a coherent structure to the survey as a whole and to make the direction of the survey clear to the students. The questions that we asked on the survey can be viewed in **Appendix A**.

We put a lot of attention on our target audience for the survey as we wanted our project to have wide coverage to almost all majors within our school. Based on our observation, most of the available meetups were more focused on the topics relating to technology and engineering and not many events were geared towards the science and humanity department. Thus, we planned to include all majors in our survey demographic, as we wanted to validate our prior observation on available meetups and analyze the trend of meetup cultures with respect to the fields of study of the students. Additionally, we wanted to make sure that our data was exhaustive, so we would be able to propose a solution that would benefit all students of different departments.

We also discussed the inclusiveness of all levels of class standings within the school, both undergraduate and graduate students. While focusing on the upperclassmen within the school might give more insight since they would have spent a significant amount of time within their fields of study and therefore, would be more likely to expose themselves through many related events, we were curious about the current awareness of students

from different class levels towards the meetup culture. By including all class standings in our survey, we believed that the data we collected would be more representative of the school body. Moreover, if the students had not heard about meetups, our survey would serve as an opportunity for them to learn about the existence of meetup culture.

Initially, we had planned to include the faculty as another potential target audience for the survey, as we believed their experience and opinion regarding the meetup culture at WPI and its benefits to the students would be extremely valuable. We also prepared a separate survey form for faculty so that we could get appropriate responses that aided our project. Unfortunately, we did not proceed with distributing the survey to the staff, since doing so would take more time than we expected. Moreover, our topic was more geared towards the benefits of the students, therefore, we came to a decision of putting more attention to the distribution and data collection of the surveys for the students.

As we aimed to perform a lot of data analysis and visualization regarding the trends and opinions of students towards the meetup culture, we chose Google Forms as our choice of survey because we could easily link the collected data to Google Sheets, which was convenient for data wrangling and data analysis procedures such as cleaning, organizing, labeling and exploration. Students also have a substantial amount of familiarity of Google Forms. Moreover, Google Forms provided sufficient features that we could utilize for our survey with low complexity. One feature that we found important was the ability to divide the survey into sections, allowing us to organize the survey questions in an easy-to-follow manner. Another noteworthy feature was the ability to choose different input types. For example, when asked about the type of meetups they had attended, the student could select more than one option since it was realistic that many would have attended more than one type of meetup in the past. On the other hand, questions that utilized the Likert Scale to understand students' degree of opinion only allowed one choice. Lastly, since many big companies had been using Google Forms as their choices of data collection, we knew that the system was trustworthy and could perform the job well.

Prior to the official survey distribution to the whole WPI student body, we launched the preliminary survey to a few people outside of WPI, in particular a small group of students from Denison University, Temple University, Clark University, William College and Carleton College. Since they had no connection to the WPI culture, we believed their responses as well as feedbacks regarding the survey formats would be useful as an unbiased and foolproof quality check of our survey. From the suggestions, we realized that we had assumed too much about the student's knowledge and awareness of the

meetup culture, and some of the questions were too similar to each other. The preliminary survey participants also felt that the survey was not straightforward and did not grasp the purpose of our survey. In response, we successfully cut down the unnecessary or repetitive questions, added more descriptions to our survey and reorganized our sections and the questions that were in each of them based on the recommendations that we got after the preliminary launch.

For our finalized version, we divided the survey into six sections, and each section had to be completed in order to proceed to the next section. There was a total of 34 questions, including optional questions for all sections. We believed that the number of questions was sufficient and the information that we obtained from each question fully served its purpose in our project. The detail of each section is as follows:

- **Section 1** was a brief introduction of our project, a description of one example meetup to set a theme for our survey, and an insurance on the validity and anonymity of the survey.
- **Section 2** was dedicated to gaining background information of the survey takers, in particular genders, class standings and majors.
- **Section 3** went into details of meetup by informing the participant about the definition of meetup as well as some benefits from attending meetup and served as a knowledge check of whether the student had attended such events in the past.

If the student indicated that he had attended a meetup before, the student would be linked to **Section 4**.

- **Section 4** was about the details of the meetup events that the student had attended along with the experience from the event, in particular the form of transportation, topic of the meetup, location, budget, and personal opinion regarding the event. This section, in particular, was only applicable to students who indicated that they had attended a meetup in the past. Regardless of whether the survey taker had completed this section or not, the student could proceed to **Section 5** and **Section 6**.
- **Section 5** was another general section and it focused on the general opinions about meetup culture as well as setbacks that would deter one from attending the meetup

events. Students could also voice their opinions regarding ways to improve on their current circumstances.

- Lastly, **Section 6** was a prompt for the end of the survey, along with a thank-you note for completing the survey.

In the cases that the participants wished to be interviewed by us, they were redirected to a separate form for interview registration and we contacted them personally for the arrangement of time and place. As a token of our appreciation, each of them received an Amazon gift card for helping us with the research.

Since we aimed to include students from different majors and difference class standings, we had to look into different methods of survey distribution that would include a wide demographic of WPI students. Based on our own experience as well as other researches in the past, we came up with several ways to approach WPI students effectively

- **Email:** the most basic form of informing WPI students. In order to be as exhaustive as possible, we sent our survey invitation to the aliases of as many majors of the school as possible. While this method had the potential to reach out to every student at WPI, we reasoned that students might view the students might view the survey invitation as spam and as a result, choose to ignore it. Another problem of the method was that our email could have gotten lost in the many other emails that might have been received by the student on the same day. Overall, we received great responses through email, as evident in the high number and the good distribution of majors in our survey data.
- **Facebook:** another popular platform for survey distribution. We posted the survey link along with a short description of what the survey was about to the respective Facebook groups of different class years. We received great responses from WPI students through Facebook as students as they were active on the website and we could observe the number of students who had seen the posts.
- **Slack:** a popular platform for on-campus students groups or class members to communicate. We posted our survey link to the Slack channels of our courses and our clubs. We received good responses as students were more likely to help people they know. However, we were limited by the number of active members of each Slack group.

- **Reddit:** one of the platform that was suggested by the seniors who had experience in survey distribution to WPI students. Due to the veil of anonymity, we received mixed responses from WPI students but overall, we received a decent number of up-votes for visibility.
- **Personal approach:** probably the most effective and most direct way of reaching out to other students. We first approached our friends and asked them to recommended others to help with our survey.

Initially, we planned to put up the survey from the middle of B term to the middle of C term in the case that we did not have enough data. However, since we got so many responses in approximately a week after launch, we decided to close the survey earlier than planned and shifted our focus towards interview and data analysis. Our survey was active from December 7th to January 10th with a total of 322 responses, according to Google Forms.

4.2 SURVEY RESULTS

4.2.1 Data Overview

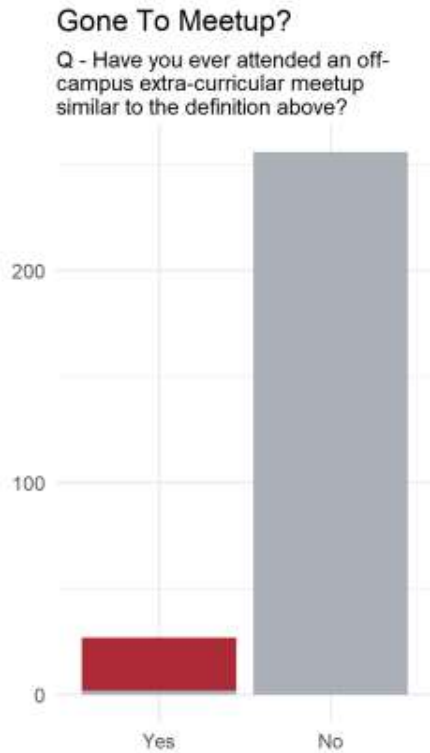


Figure 4.0: Only a very small number of students have attended an off-campus extra-curricular meetup

We received a total of 322 responses for our survey. From analyzing the responses, we learned that the data contained 25 responses from students who had gone to meetups, 258 responses from students who had never gone to a meetup, 25 responses from students who misunderstood what meetups were and 14 responses that were noises.

In our analysis, our data only included responses from students who had gone to meetups and students who had never been to one. We categorized them as “Experienced” and “No Experience” respectively. The distribution is shown in **Figure 4.0**.

4.2.2 Demographics

To understand our data distribution, we collected general background information from all participants. We had a relatively good distribution in genders, class standings, and majors offered at WPI. The implication is that our data fairly represented the student demographics at WPI.

Figure 4.1 shows the gender distribution of our data. Even though there are more male students in the group that have never gone to meetups (“No Experience” group), there are more female students in the group that have meetup experience (“Experienced” group). Since the male to female ratio at WPI is 3:1, this suggests that female students may be more engaged in meetups than their male counterparts.

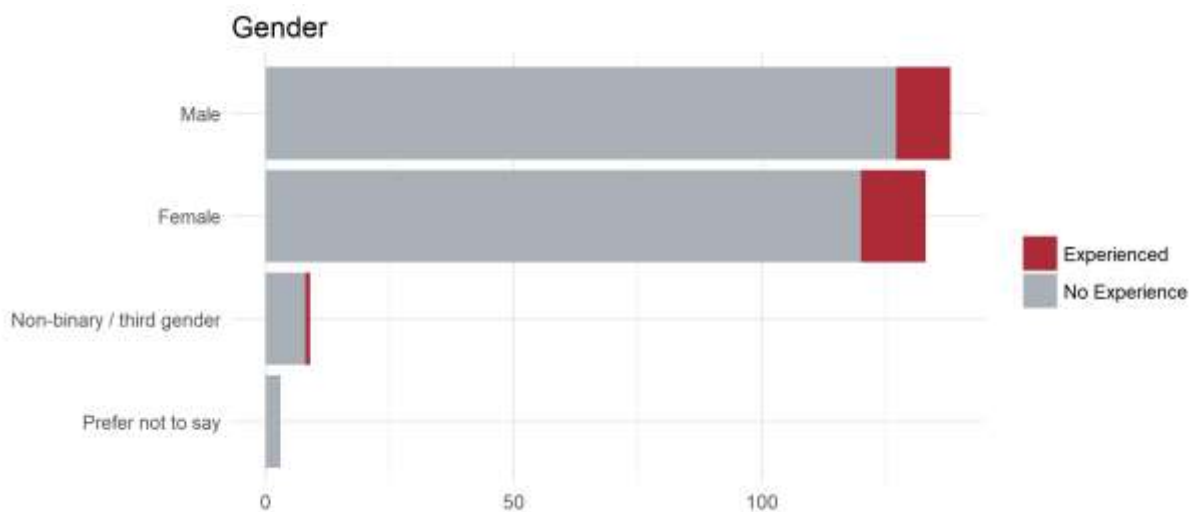


Figure 4.1: Gender distribution of survey respondents is balanced between male and female

Figure 4.2 shows the class standing distribution of our data. Even though we received slightly more responses from undergraduate underclassmen, the distribution as a whole was still very good. The number of students who have gone to meetups was significantly higher for undergraduate upperclassmen, as there is only one underclassmen who has gone to meetups. This implies that undergraduate upperclassmen and graduate students may be more aware of and/or more willing to go to meetups.

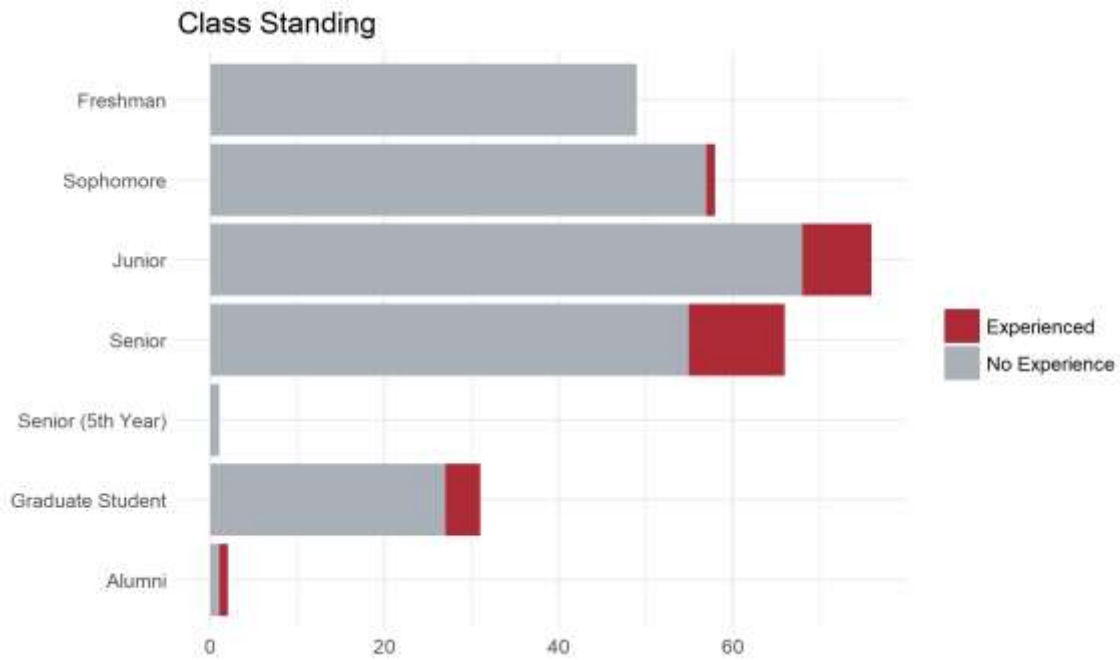


Figure 4.2: Most responses for both groups are from undergraduate upperclassmen

Figure 4.3 is the distribution of our data according to majors. We only took into account the students' primary field of study. We received responses from almost all majors offered at WPI. While Computer Science, Mechanical Engineering, and Robotics Engineering are the top three majors for responses from students that had never gone to meetups, the top three majors for responses from students who had gone to meetups are slightly different and consist of Computer Science, Robotics Engineering, and Biomedical Engineering.

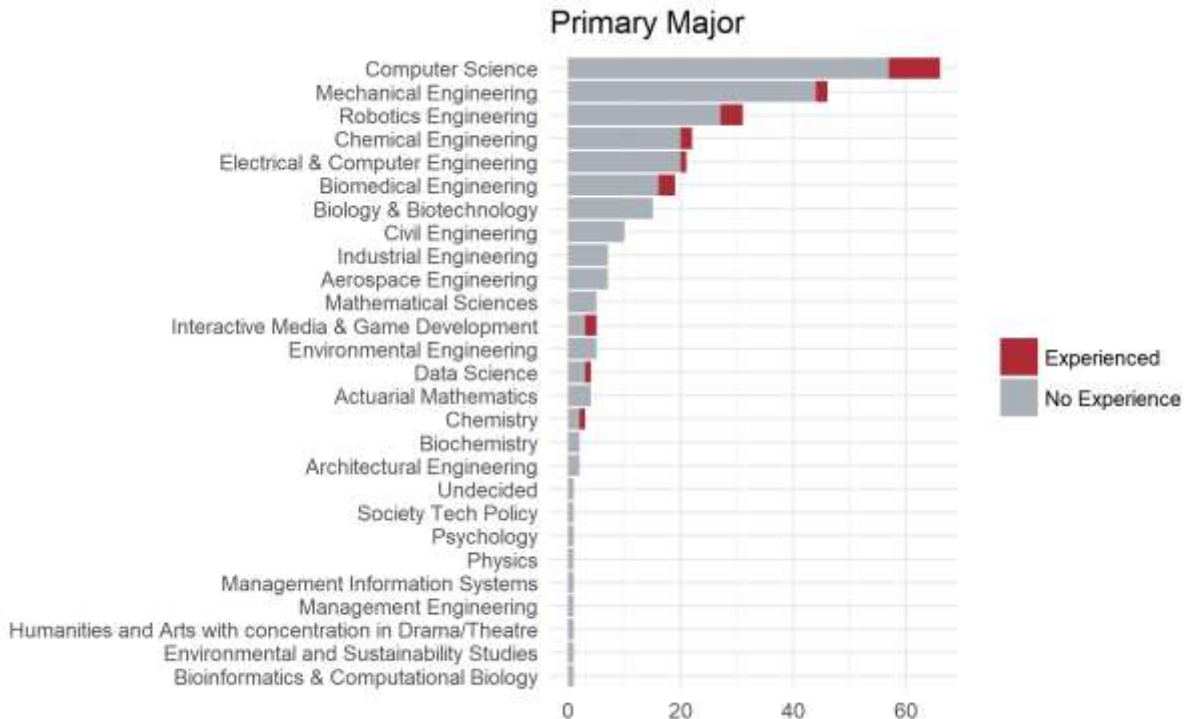


Figure 4.3: The major with the most responses for both groups is Computer Science (CS). This is likely due to the fact that CS is one of the most popular majors at WPI, but it also possible that it is because there are many CS related meetups.

4.2.3 Opinions from Students Who Had Gone to Meetups

For students who had gone to meetups, we included some questions regarding their past meetup experience to understand more about the current meetup culture at WPI. Since we allowed multiple answers for most questions (exceptions were only for yes/no questions), the total number of responses for each question would not correlate to the total number of students who have gone to meetups.

Figure 4.4 shows meetup companion choices of students who had gone to meetups. More than half of the students in this group had attended a meetup with fellow students at WPI. At the same time, almost half had attended a meetup alone. There was also a small number who had gone to a meetup with other people who were not students at WPI, such as friends outside of WPI, siblings, or business partners. This implies that a student can have a different preference for companions for different types of meetup. Regardless, going to meetups with companions was the most popular choice for students in this group.

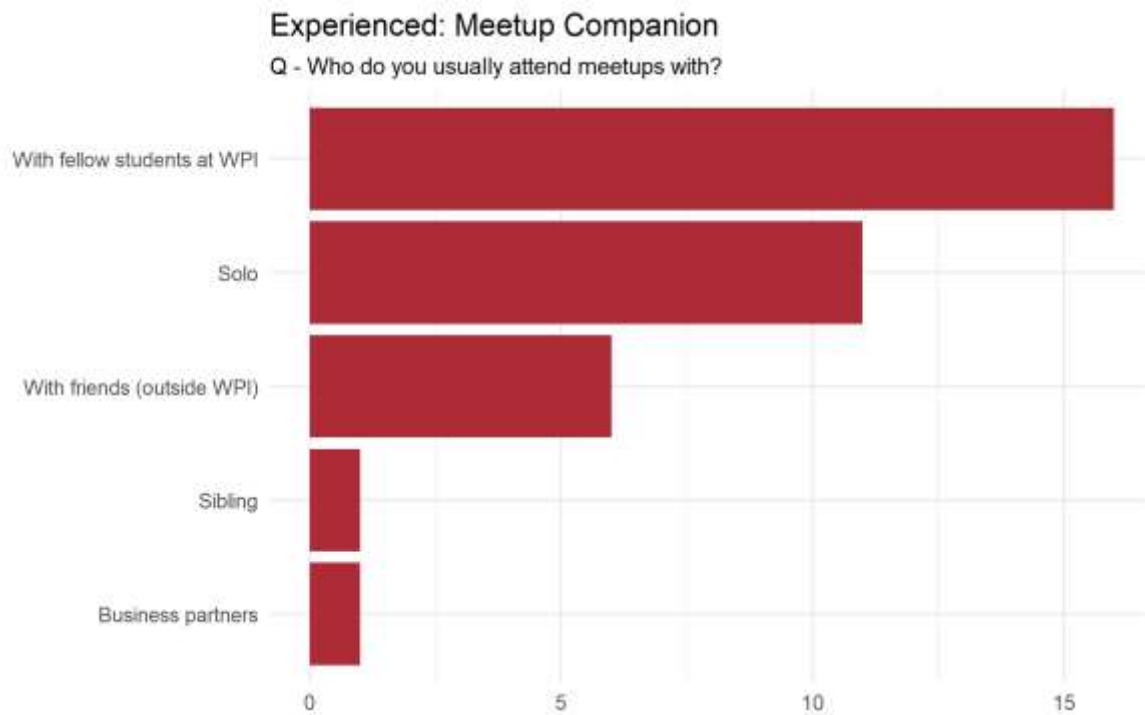


Figure 4.4: Most students who have gone to meetups usually attend meetups with companions

The type of meetups students had chosen to attend is shown in **Figure 4.5**. The students mainly went to technical presentations or social gatherings. A small number went to tutorial-type workshops and the rest went to other types of meetups, which included showcases, professional/leadership focused meetups, and hackathon meetups.

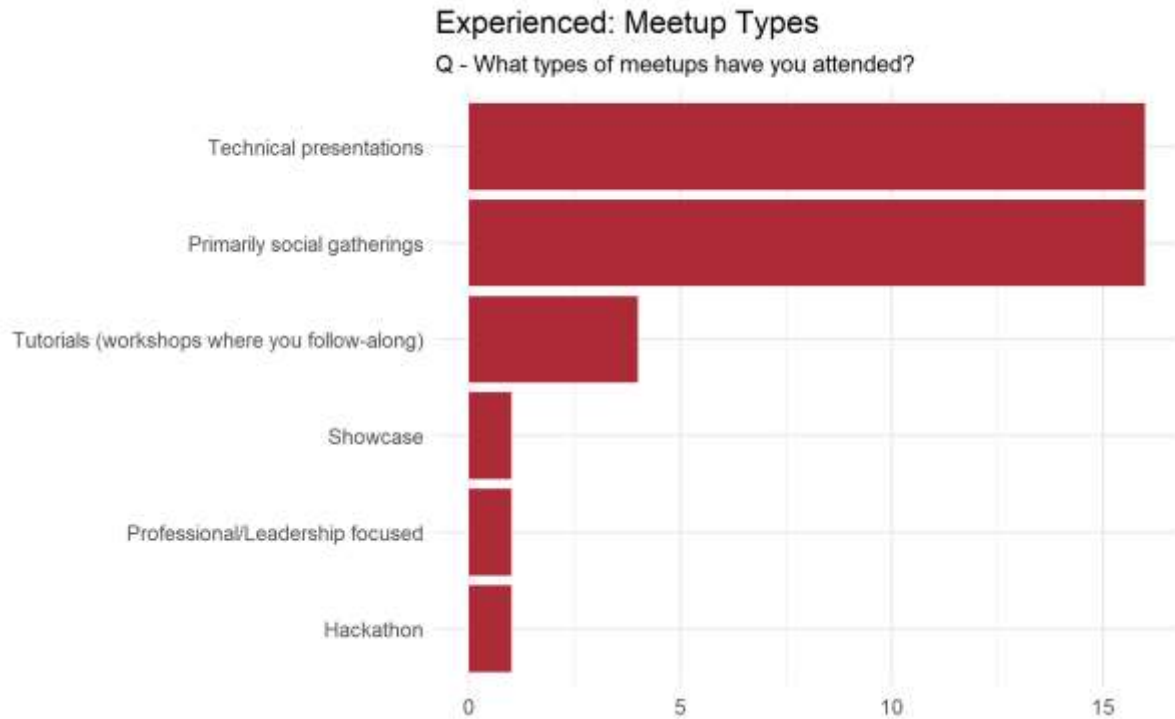


Figure 4.5: Most students who have gone to meetups prefer technical presentations or social gatherings as opposed to professional/leadership focused meetups, tutorials, showcases, and hackathons.

The group shown in **Figure 4.6** had attended a meetup related to their academic/fields of interest. This suggests that relevance to academic interest may be an important factor for attendance of meetups.

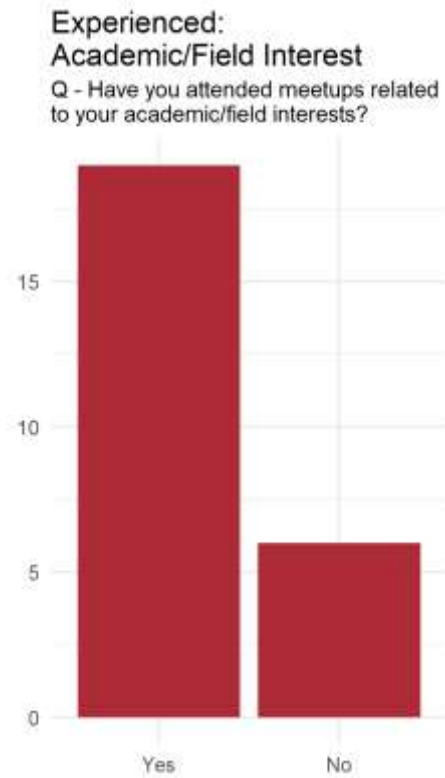


Figure 4.6: Most students who have gone to meetups have attended a meetup related to their academic or fields of interest

Figure 4.7 shows the locations of the meetups students in this group had attended. Most students had attend meetups in Massachusetts, more specifically in Boston and Worcester. Almost all meetups were held in cities in the United States, with only one held in a city abroad (Lima, Peru). This may suggest that meetups are typically held in cities.

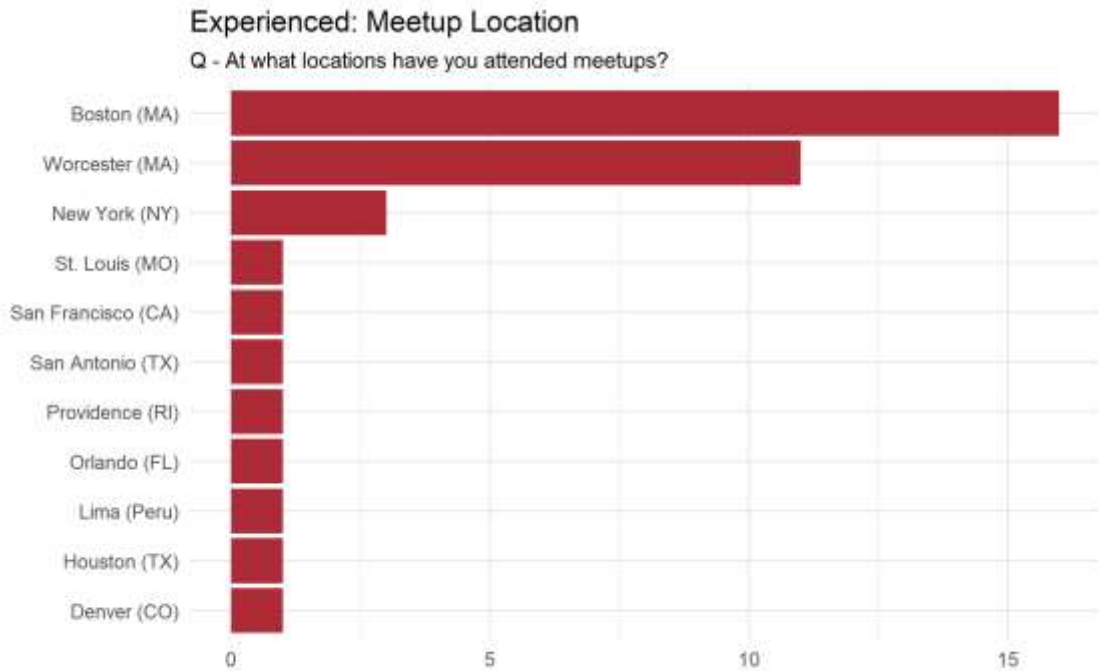


Figure 4.7: Most popular past meetups for students who have gone to meetups are in Boston and Worcester

Figure 4.8 shows types of transportations students with meetup experience have used to get to meetups. Almost all the students had gone to a meetup by car, including driving to the meetup location themselves, carpooling or using ride services like Uber, Lyft, or taxi cab. Use of trains, as a means of transport to meetups, came in second and buses third. A few students have traveled by plane or simple walked, yet others have attended a meetup right at their office.

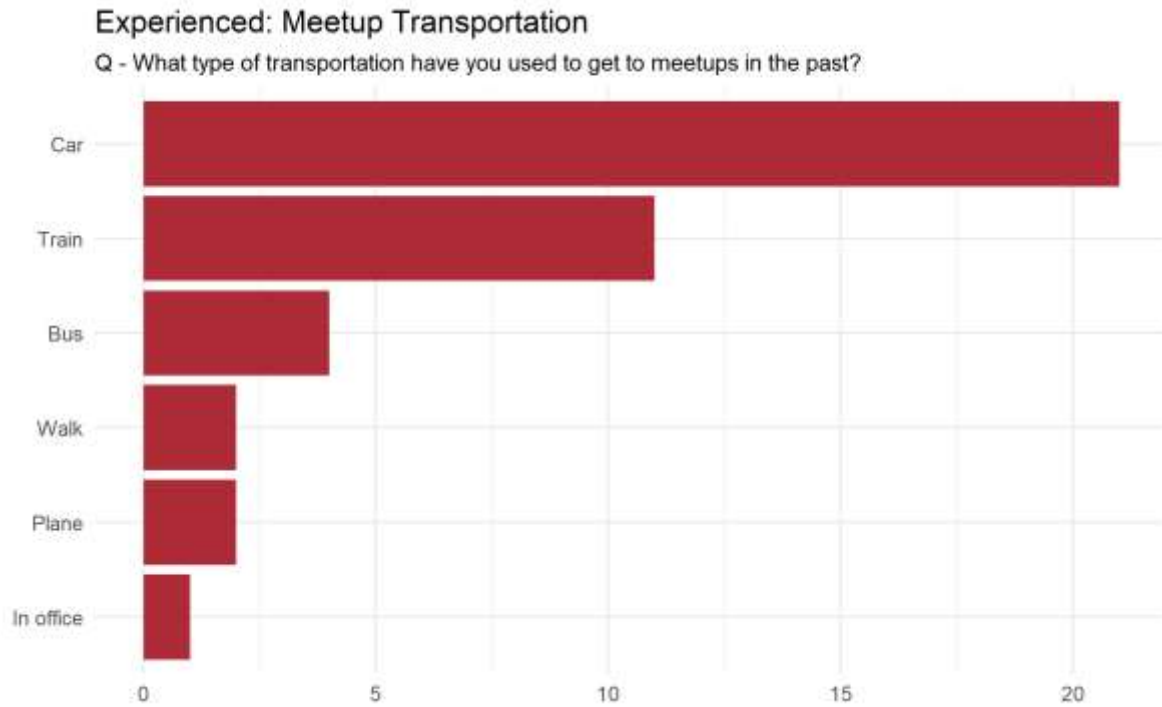


Figure 4.8: Most students who have gone to meetups traveled to past meetups by car

The transportation cost of some past meetups, is shown in **Figure 4.9**. Most students had needed to spend some money on transportation to a meetup, typically more than \$5. The most common amount is around \$6-10, and the second most common amount is more than \$21.

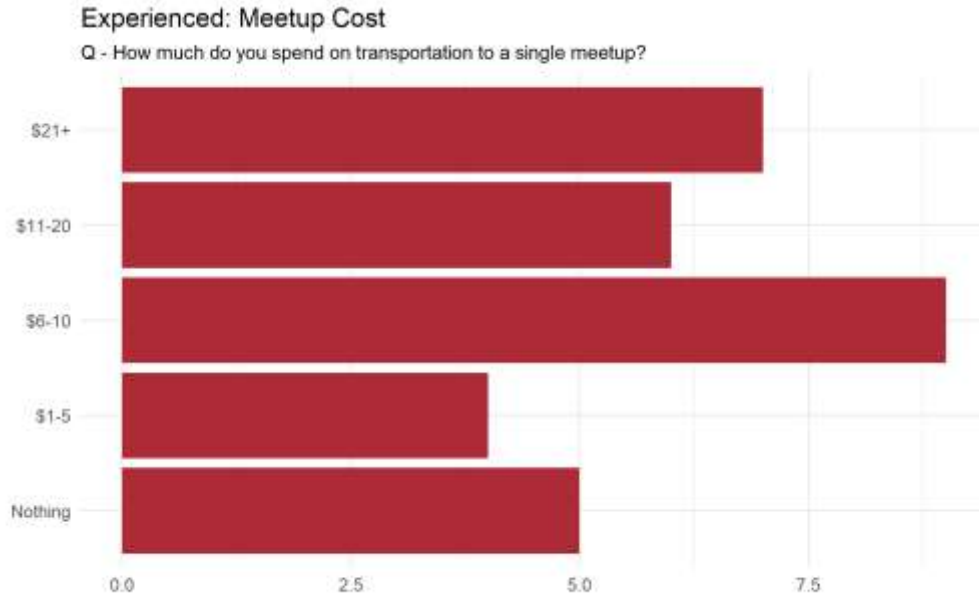


Figure 4.9: Most students who have gone to meetups spent more than \$5 on transportation to a single meetup

Figure 4.10 synthesizes the time for past meetups. Only the option “On a Weekday, during the school year, before 5pm” has few responses, but the other three options on the graph show almost even distribution of responses. This may indicate that students are more likely to go to meetups that are not held during school hours.

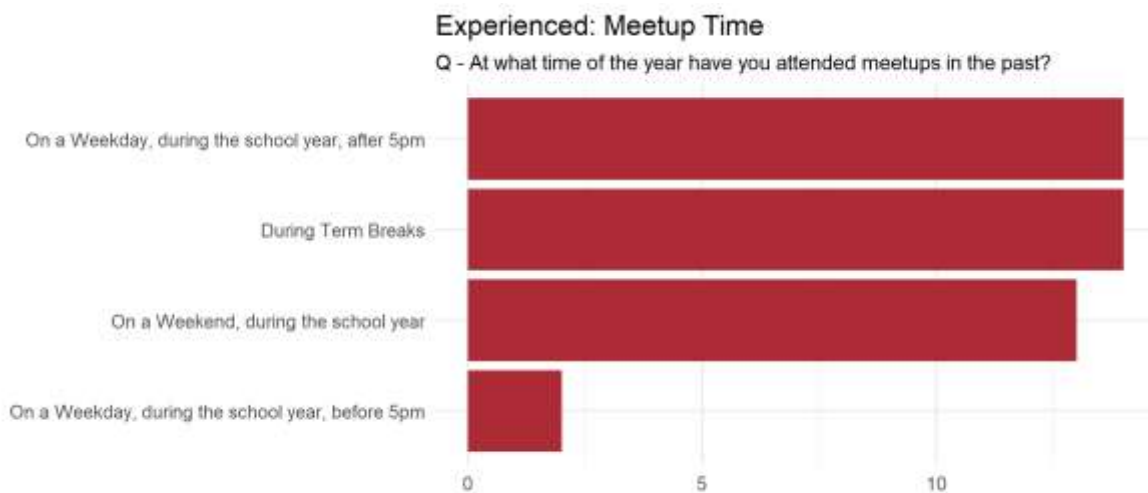


Figure 4.10: Only a small number of students who have gone to meetups go to a meetup on a weekday, during the school year, before 5pm

Figure 4.11 shows the sources from which students in this group discovered meetups. The top source is social media, which mainly includes Facebook and Twitter. The runner-up is through other students or peers. The third top source is on-campus clubs. Meetup.com came in fourth, which is surprising because the website is one of the top source for meetups. The bottom three sources are academic institution related. This suggests that academic institutions might not have been a good source for discovering meetups.

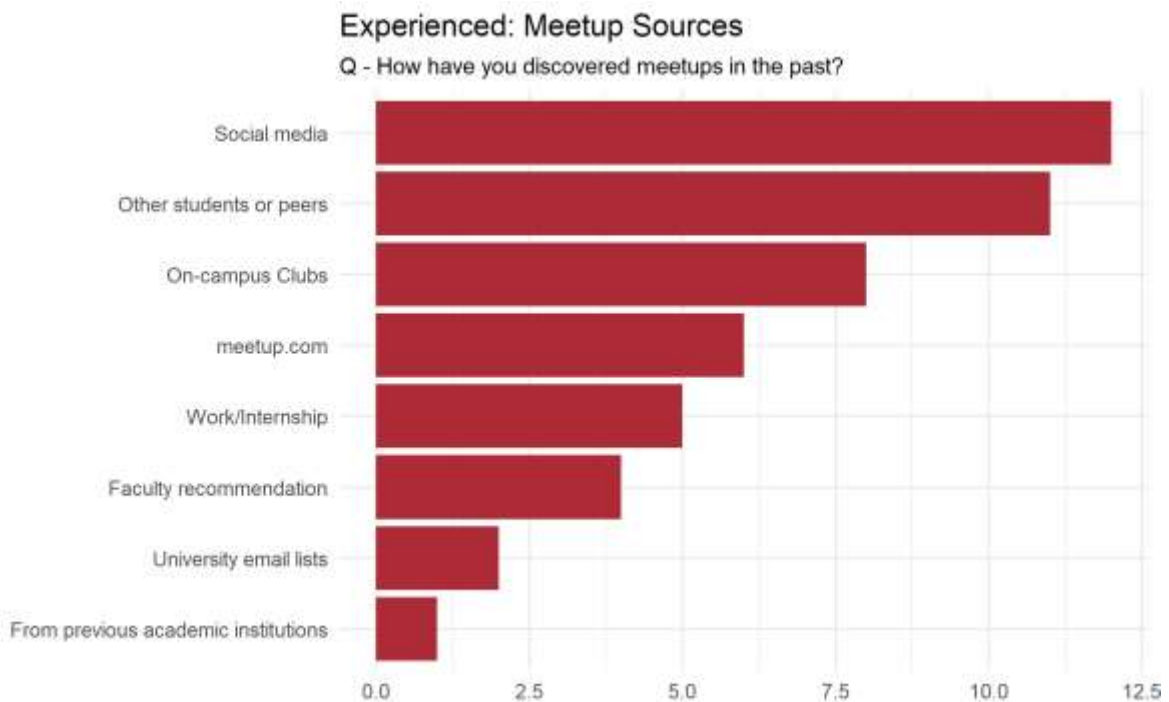


Figure 4.11: Only a small number of student who have gone to meetups discovered meetups through academic institution related sources

Figure 4.12 shows whether students have recommended any meetups to their peers. More than half of the students in this group have recommended meetups to their fellow students or friends, however, we were hoping for a higher number, since peer-to-peer recommendation is critical for fostering a meetup culture at WPI.

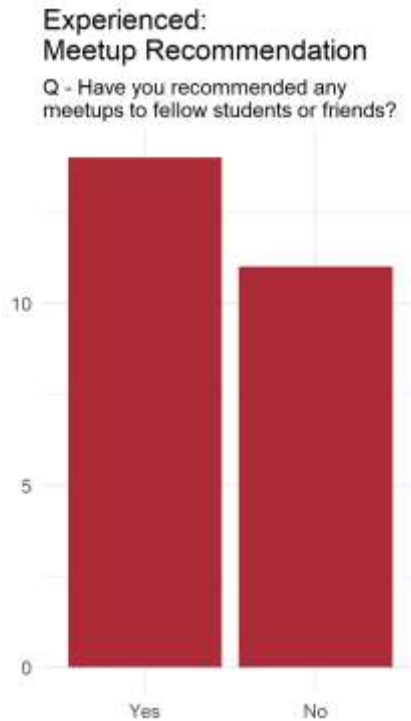


Figure 4.12: More than half of the students who have gone to meetups have recommended meetups to fellow students or friends

4.2.4 Opinions from All Students

We included questions for all students regarding their meetup preference. These questions were quite similar to the questions we asked the students who had attended meetups, but focused on preference instead of past experience. Like the previous section, since we allowed multiple answers for most questions (exceptions were only for yes/no questions), the total number of responses for each question would not correlate to the total number of students who have gone to meetups. We separated the responses into the two focus groups to better compare the trend of the two. Since responses from students who have gone to meetups are significantly less than responses from the other group, we scaled the graph for this group to better grasp the trend.

Figure 4.13 shows meetup companion preference of all students. Students overwhelmingly preferred going to meetups with a companion, either going with a group from the same school or with friends outside of school. This trend is the same for students in both groups.

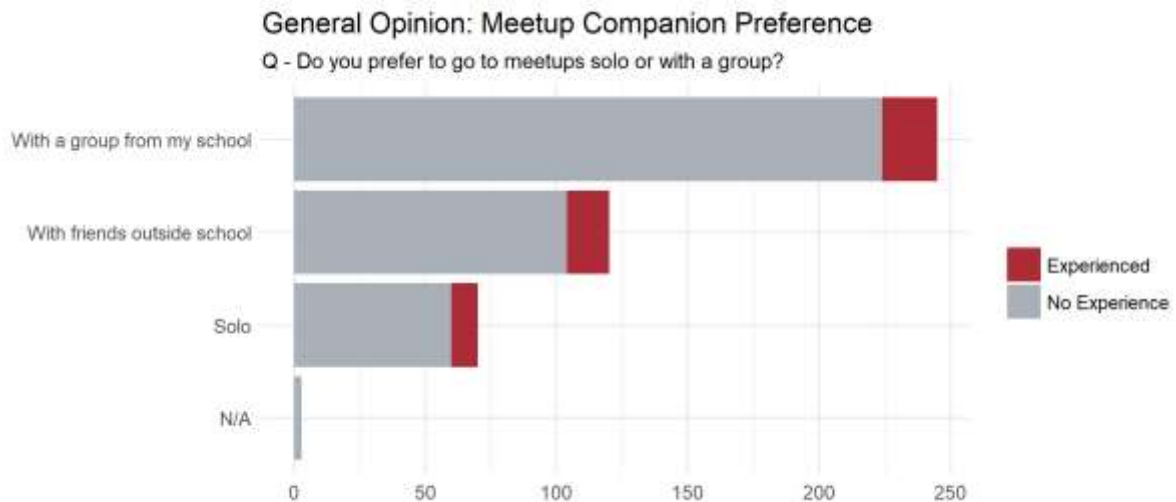


Figure 4.13: Most students, regardless of meetup experience, prefer going to meetups with companions

Figure 4.14 shows meetup type preference of all students. The top three for students with no meetup experience, in the order of one to three, was tutorial-type workshops, social gathering and technical presentations. Interestingly, the top three for students with meetup experience was completely in reverse.

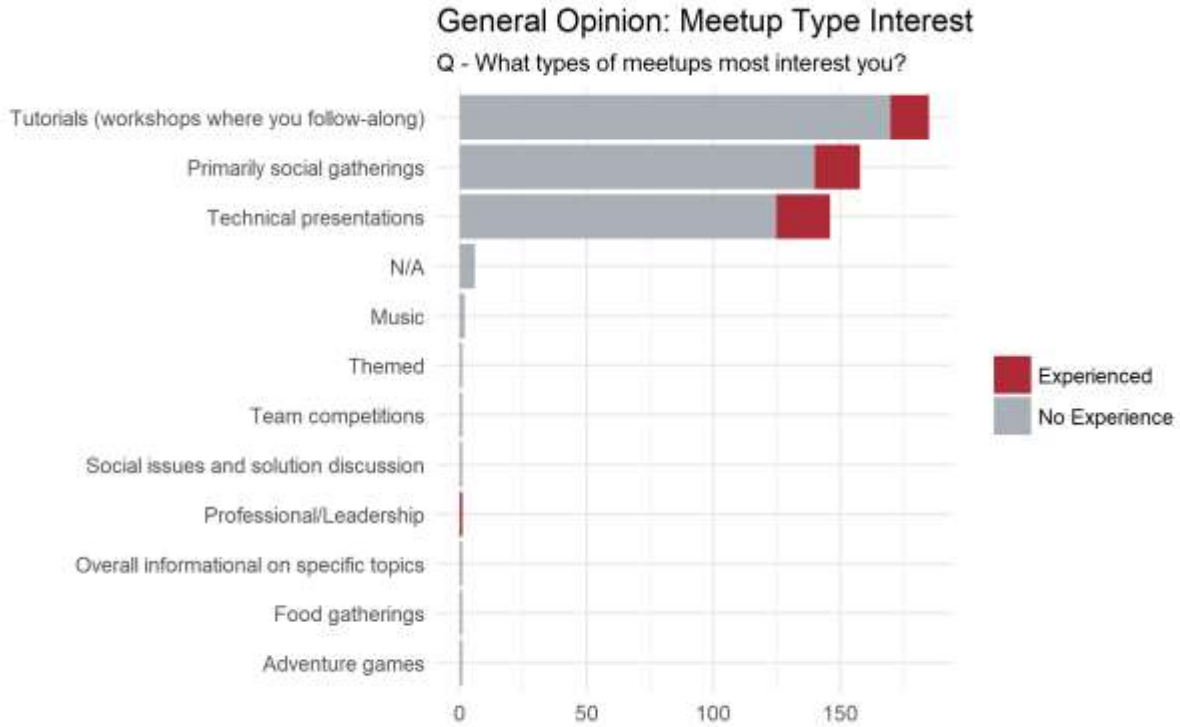


Figure 4.14: Tutorial is the most popular among students with no meetup experience while technical presentation is the most popular among students with meetup experience

4.2.5 Likert Responses from All Students

In order to better understand WPI students' opinions, we introduced some Likert Scale questions. Likert Scale questions are questions where we would provide a statement and the participant can provide a number ranging from 1 to 7 to indicate their opinion about that statement. 1 is Strongly Disagree and 7 is Strongly Agree. Like the previous section, we separated the responses into the two focus groups and scaled the graph for the group with students who have gone to meetup to better grasp the trend.

Figure 4.15 shows Likert responses for the statement “I am interested in (or already am) regularly attending meetups in Boston”. Most students who had gone to meetups showed agreement to the statement. On the other hand, the responses from students with no meetup experience were more diverse and more skewed towards the disagreement side. This suggests that meetup experience may give students more motivation to regularly attend meetups in Boston.

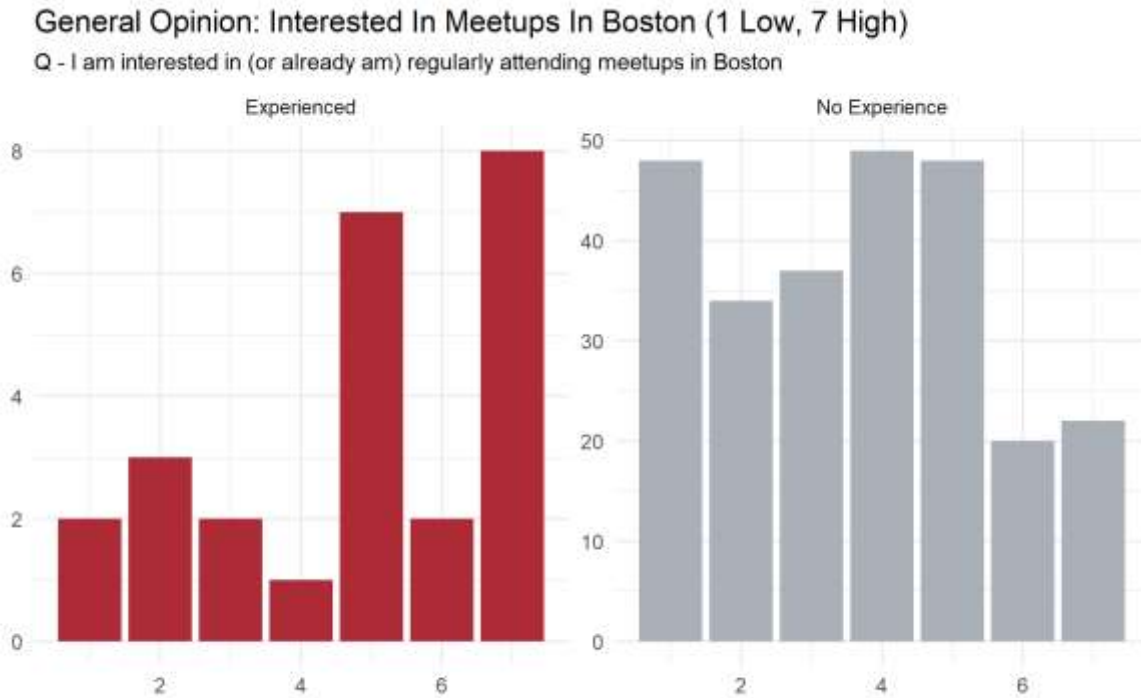


Figure 4.15: Students with meetup experience generally show high interest in (or currently are) regularly attending meetups in Boston while students with no meetup experience are generally not interested

Figure 4.16 shows Likert responses for the statement “Attending extra-curricular off-campus meetups helps students learn about topics and technologies that will advance their careers.” Generally, students from both groups agree to this statement. However, students that had meetup experience showed higher degree of agreement. This implies that their experience with meetups further confirms the statement.

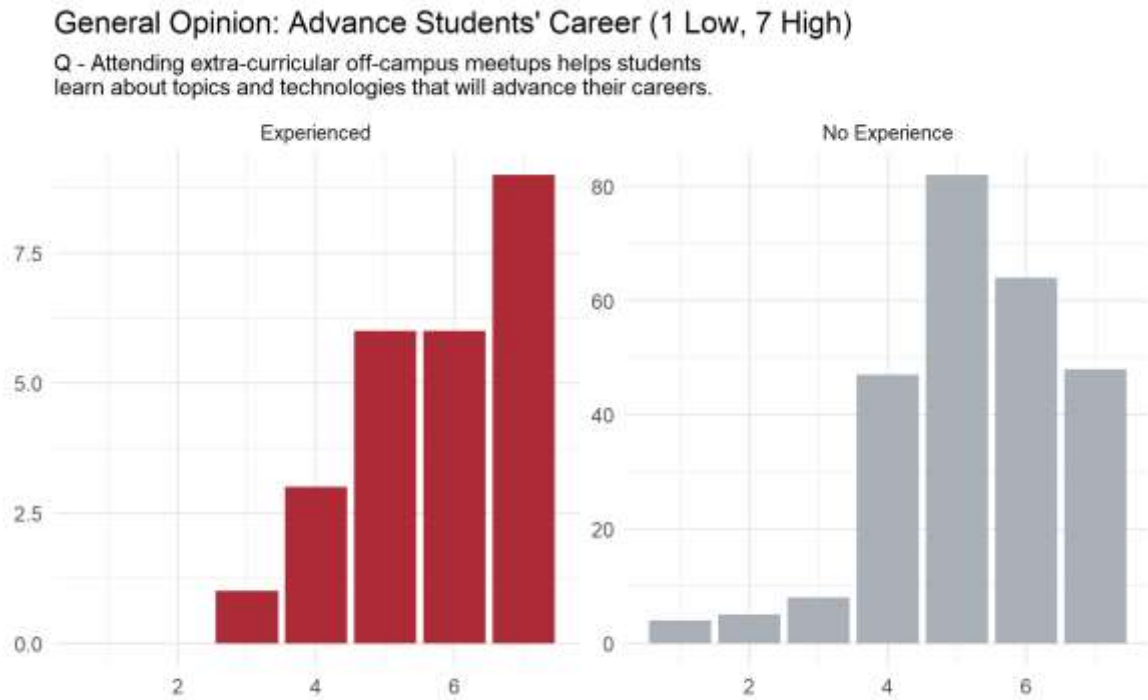


Figure 4.16: Most students, regardless of meetup experience, believe that attending extra-curricular off-campus meetups helps students learn about topics and technologies that will advance their careers

Figure 4.17 shows Likert responses for the statement “Attending extra-curricular off-campus meetups helps students find internship and/or job opportunities”. Even though students from both student groups generally agreed to this statement, students with meetup experience are slightly less positive. This implies that their meetup experience might have impacted their opinion.

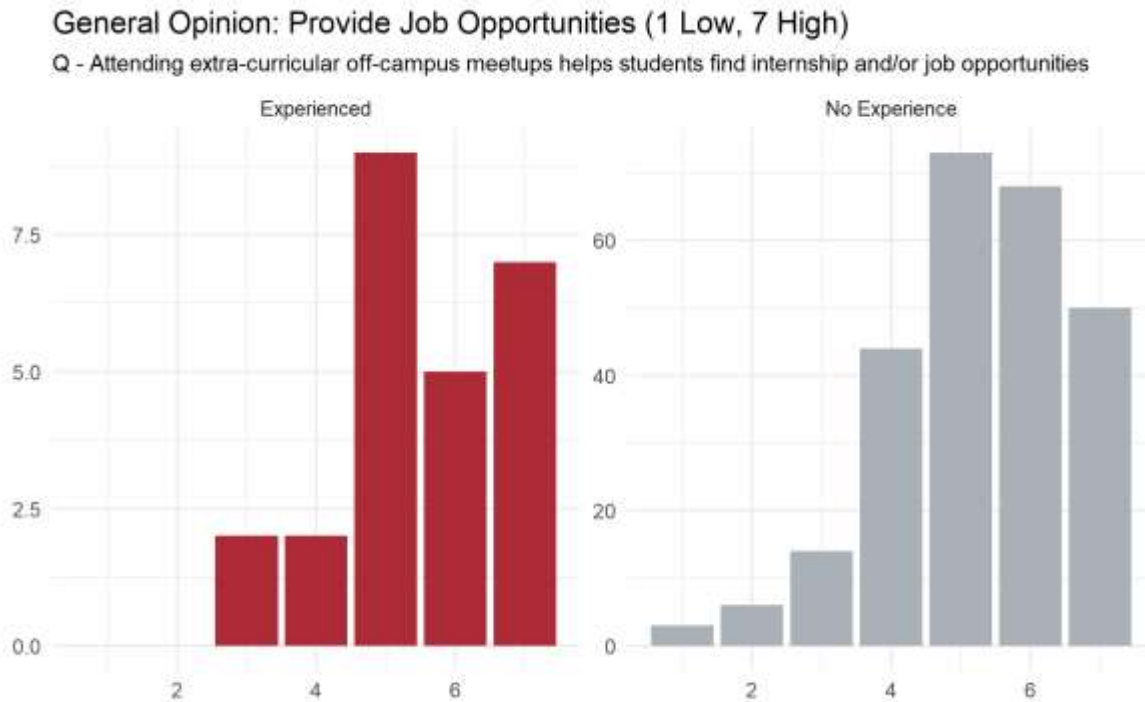


Figure 4.17: Most students, regardless of meetup experience, believe that attending extra-curricular off-campus meetups helps students find internship and/or job opportunities

Figure 4.18 shows Likert responses for the statement “Attending extra-curricular off-campus meetups enables students to meet professionals or researchers in their fields of interest”. Students who have gone to meetups mainly showed higher agreement and no disagreement to this statement. On the other hand, students without meetup experience, despite mainly in agreement with the statement, show less confidence. This may suggest that past meetup experience might have further strengthened the opinion.

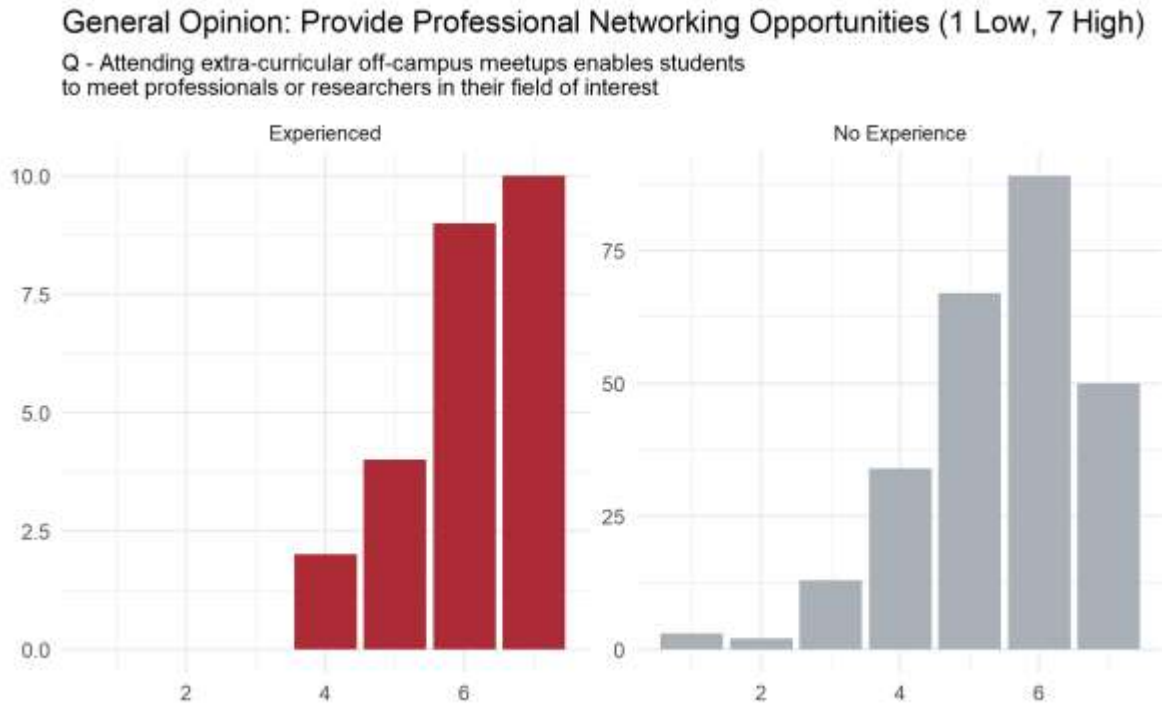


Figure 4.18: Most students, regardless of meetup experience, believe that attending extra-curricular off-campus meetups enables students to meet professionals or researchers in their field of interest

Figure 4.19 shows Likert responses for the statement “Attending extra-curricular off-campus meetups enables students to meet students from other schools”. Both student groups generally agreed to this statement. However, responses from students with meetup experience were less positive than responses from the other student groups. This suggests that peer networking opportunities may not be as many as students would have hoped for.

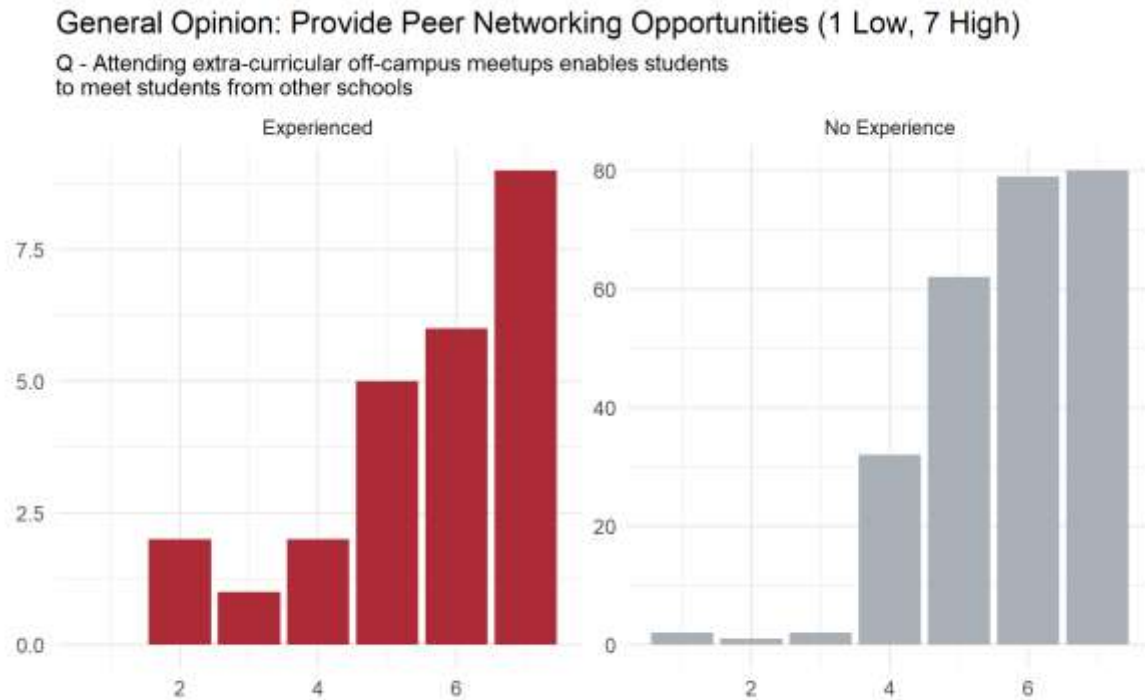


Figure 4.19: Most students, regardless of meetup experience, believe that attending extra-curricular off-campus meetups enables them to meet students from other schools

Figure 4.20 shows Likert responses for the statement “I will only go to a meetup in Boston if the meetup organizers provide food”. For this statement, student responses varied, but the general focus was at the middle of the spectrum. The students with meetup experience showed less agreement to this statement. This implies that their meetup experience overshadowed their food concern and therefore made food less of a concern for meetups.

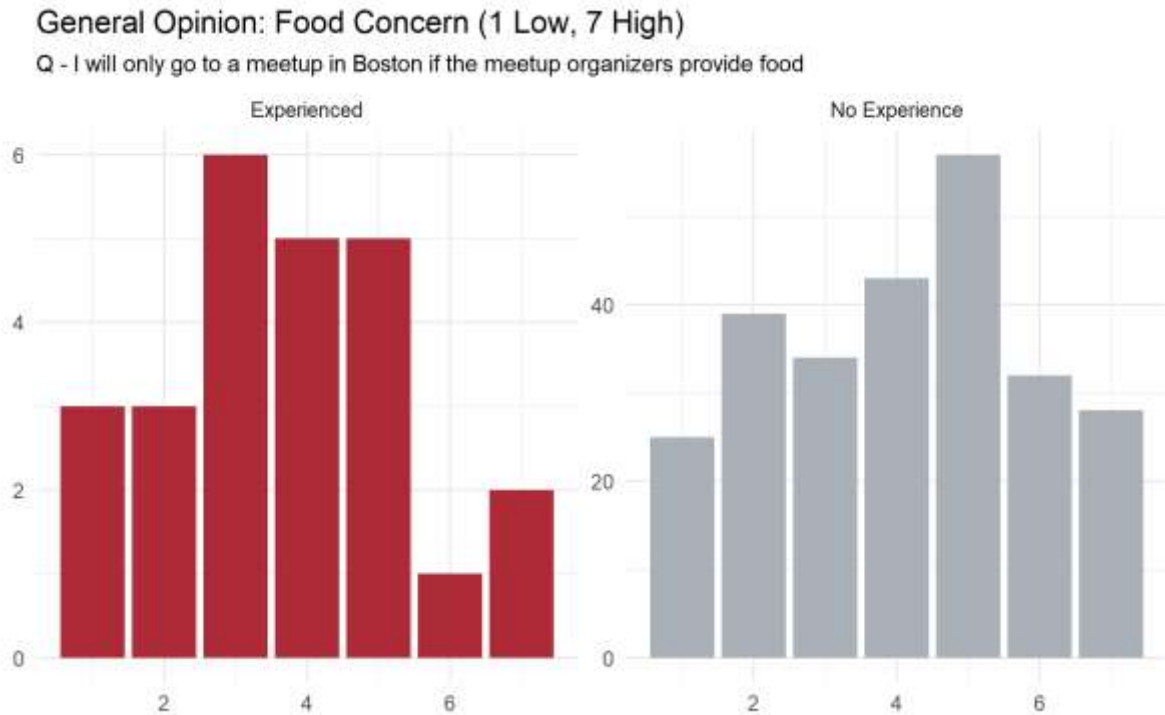


Figure 4.20: Students with meetup experience generally show less concern about whether food is provided at a meetup than students with no meetup experience

Figure 4.21 shows Likert responses for the statement “Finding transportation is a barrier to attending in Boston”. The distribution of the responses from both groups are quite similar. Most students from both groups find that transportation is a barrier to attending meetups in Boston. However, a good number of students who have gone to meetups expressed strong disagreement to this statement. This might be because they were able to attend meetups in Boston without transportation being a deterrent. Regardless, transportation remains a real concern for all students.

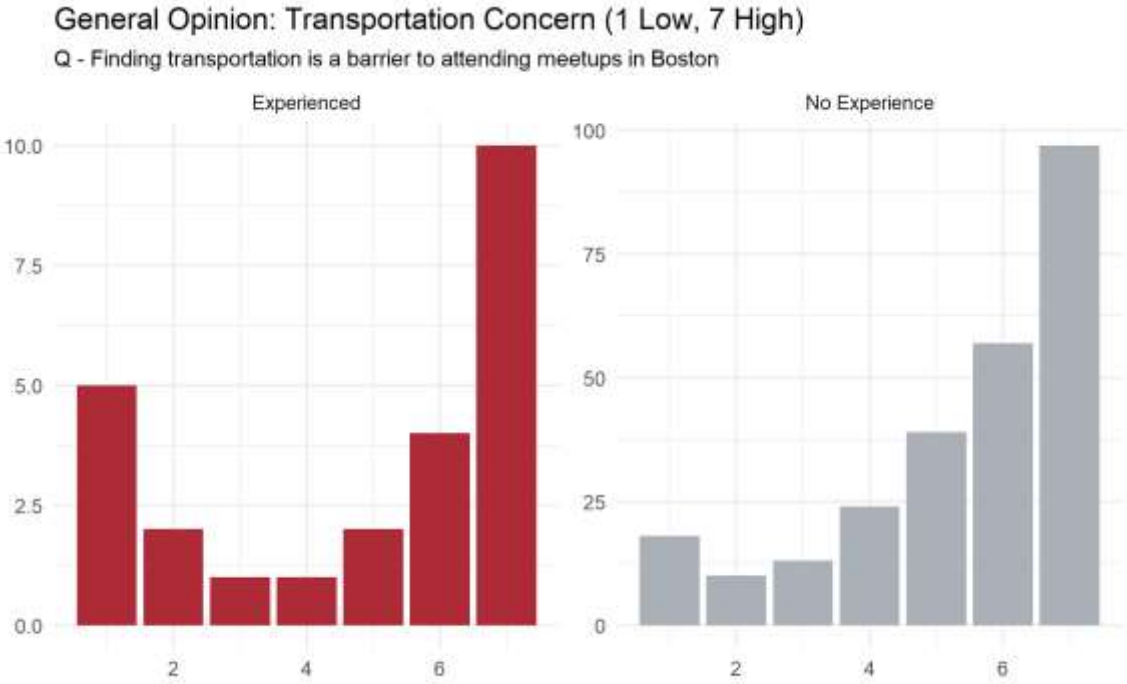


Figure 4.21: Most students, regardless of meetup experience, believe that finding transportation is a barrier to attending in Boston

Figure 4.22 shows Likert responses for the statement “Attending extra-curricular off-campus meetups is worth the time and effort it takes to attend”. While students from both group agree to this statement, the students who have gone to meetups show stronger agreement to this statement. This might suggest that their meetup experience was mostly worth the time and effort.

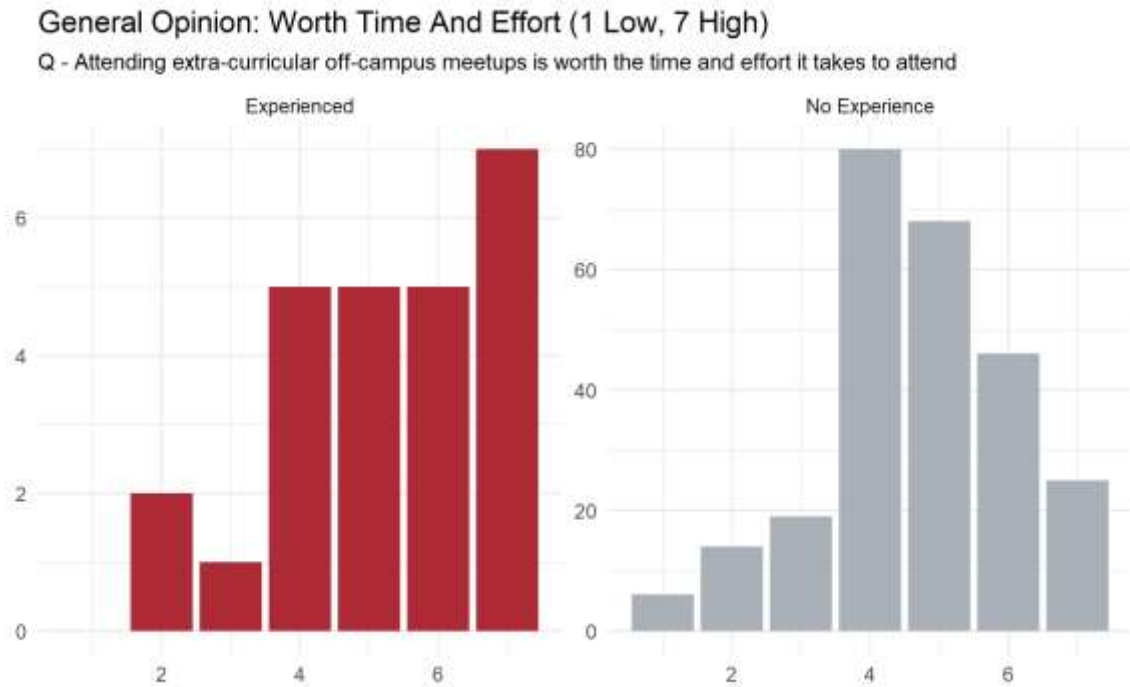


Figure 4.22: Most students who have attended meetups believe that attending meetups is worth the time and effort it takes to attend. However, for the students that have no experience, students are more neutral to this idea than they are to the strongly agree. One possible explanation is that students who have no experience do not know exactly what it takes to attend a meetup, such as how long it would take, the transportation to and from the meetup, as well as the benefits. Therefore, it is relatively difficult for them to know whether it is worth the time and effort.

4.2.6 Student Recommendations

In the last section, we asked the WPI students two free-response questions: “If WPI were to provide a way for students to better connect with meetups in Boston, what would it look like?” and “Describe any resources, applications, or other changes that would make attending meetups easier and more valuable for you:”. The students’ answers included helpful recommendations that could be used to improve the meetup culture at WPI. We decided to combine the answers from both questions, extracted keywords and grouped the keywords into five categories (from least to most number of recommendations): Hosting, Incentives, Organizations, Information, and Transportation.

Figure 4.23 shows students recommendations related to hosting. A small number of students suggested not having meetups in Boston to increase accessibility. Specifically, students suggested hosting at WPI, hosting locally here at Worcester (but did not specify that the location had to be WPI) or having an option to remotely join the meetups in Boston. The last option was the least mentioned category.

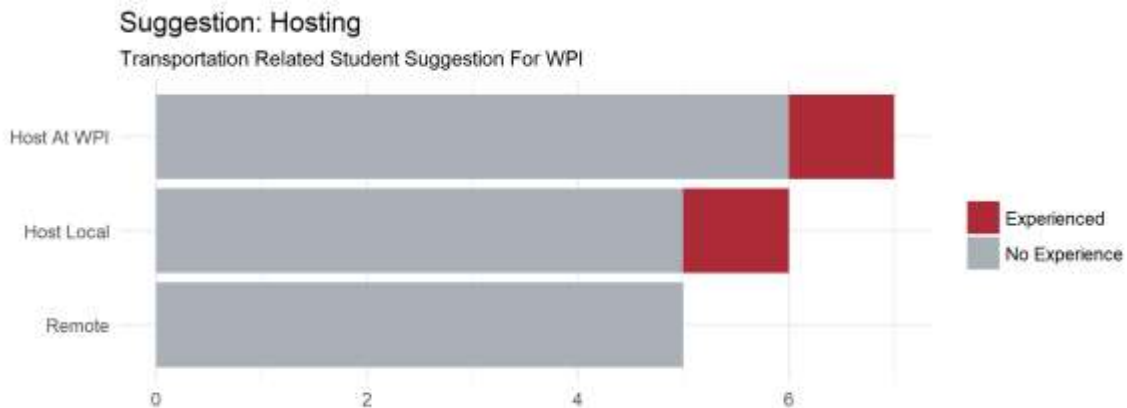


Figure 4.23: A small number of students suggested hosting meetups at WPI, hosting meetups locally in Worcester or remotely attending meetups in Boston.

Figure 4.24 shows students recommendations related to incentives. A good number of students suggested providing incentives to encourage more WPI students to attend meetups. The top three incentive suggestions are: providing food at the meetup, highlighting the job and/or networking opportunities possible at these events, and providing a discount if the meetup charges a fare. Two students suggested academic-related incentives such as automatically having an excuse to miss an evening class, being allowed to be late to class due to attendance of a meetup event, as well as making attendance to meetup events a course credit. In fact, one student said that making meetup attendance a course credit would give a good number of students the motivation to attend a meetup.

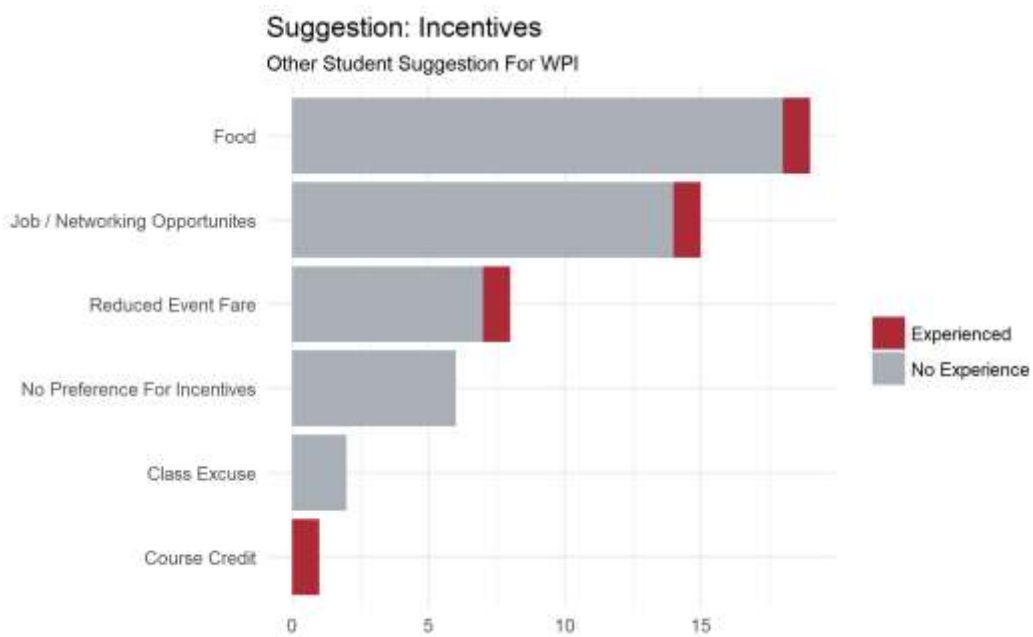


Figure 4.24: A good number of students suggested providing incentives such as providing food, providing job/networking opportunities or reducing event fare

Figure 4.25 shows students recommendations relating to organizations. Some students suggested partnering with existing on-campus organizations or creating new organizations to better promote and support WPI meetup culture. More specifically, the top suggestion in this category is either partnering with an existing club on-campus or starting a new club dedicated to meetups. The partnership or the new club can either host meetups at WPI, organize transportations for students interested in meetups in Boston, or both. The second most popular suggestion is partnering with the Student Government Association (SGA) because the organization regularly plans outing trips for WPI students. Another popular suggestion is partnering with the department and/or the faculty since they can help disseminate information about meetups to their students as well as take meetups into account when designing a course syllabus. Students also suggested partnering with the Career Development Center (CDC) to feature meetups in their newsletter. A small number suggested partnering with a hosting organization to get reduced fare or to host at WPI.

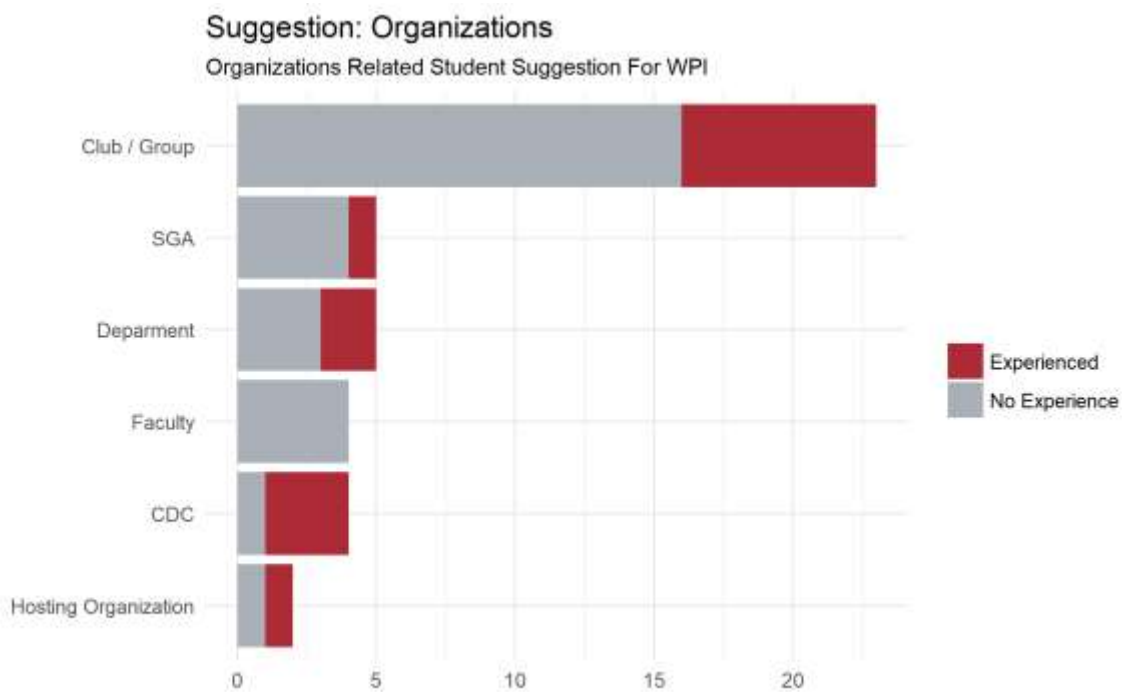


Figure 4.25: A good number of students suggested creating a new meetup club or partnering with existing on-campus organizations

Figure 4.26 shows students recommendations related to information, which is the second most popular student recommendation category. A large number of students pointed out that in order to encourage more students to attend meetups, more information about meetups needs to be provided, including the time, location, available transportation options, and likely participants. The most common recommendation in this category are just general information inquiries without mentioning how the students wanted to receive the above information. For recommendations that did mention information distribution methods, almost all suggested online-based methods, which includes campus-wide emails, a public calendar of upcoming meetups, online meetup reservations (RSVP), a meetup-dedicated website, social media (such as Facebook and Twitter), Campus Labs - WPI's official events site, or Handshake - WPI's career site. A few students also suggested offline methods such as holding info sessions about meetups or hanging posters for upcoming meetups.

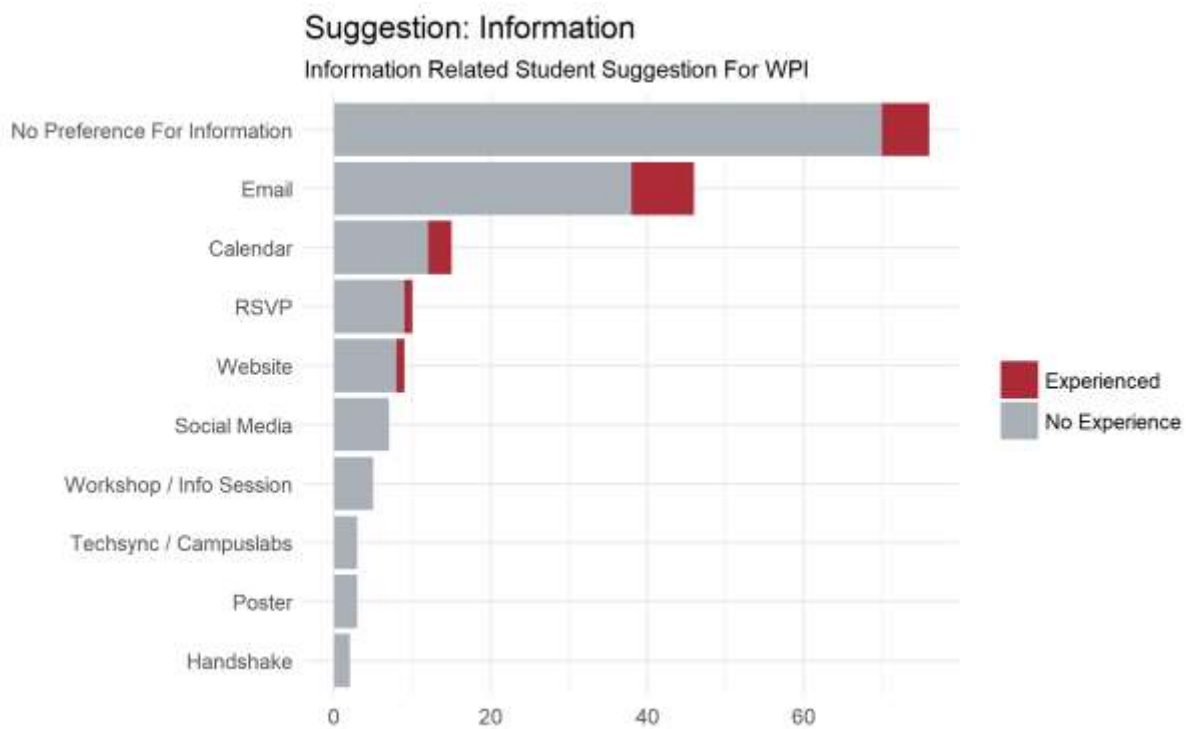


Figure 4.26: A large number of students suggested providing more information about meetups through means such as email, a shared calendar or a RSVP list

Figure 4.27 is students' recommendations related to Transportation. It is the top student recommendation in this category. A large number of students suggested providing transportation support to make going to meetups in Boston more convenient. Overall, most students simply stated that there should be some types of transportation support from WPI but did not mention which method they would prefer. For the students that were more specific, most of them mentioned organizing a scheduled Worcester-Boston shuttle or a school bus that would take WPI students to a specific meetup in Boston. Some students mentioned transportation financial support (cheaper travel fare or travel reimbursement). A few students mentioned utilizing the Worcester-Boston commuter rail in addition to student-organized carpools to Boston.

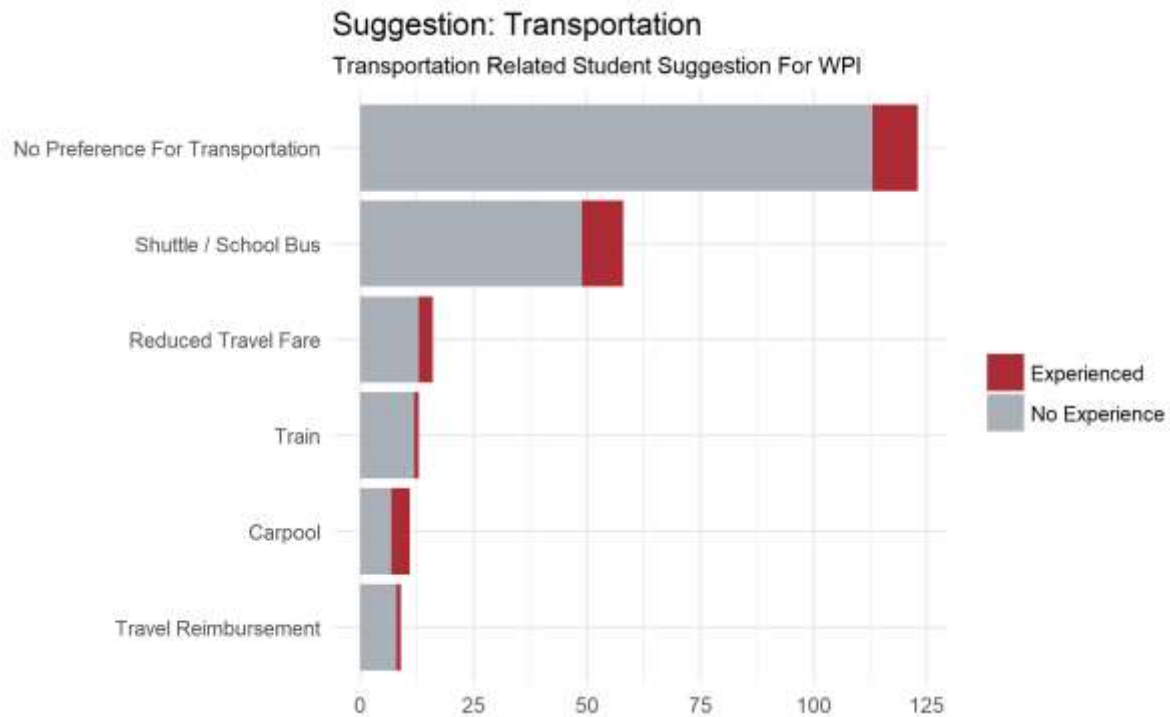


Figure 4.27: A large number of students suggested providing transportation support such as providing shuttle/school bus, providing financial support or utilizing the commuter rail

4.3 STUDY 1 SUMMARY

Out of the 322 responses we received, we only used the 25 responses from students that had gone to meetups (labeled as “Experienced”) and 258 responses from students that have never gone to a meetup (labeled as “No Experience”) in our analysis. Our data has a good distribution over genders, class standings and majors. While students with no meetup experience are quite diverse, students with meetup experience tend to be upperclassmen with Computer Science related majors.

Based on the responses from students in the “Experienced” category, we learnt the following: (1) these students usually have companions; (2) popular meetup types are social gathering and technical presentations; (3) most of these students attend meetups related to their field of interest; (4) most meetups the students had attended were either in Boston or Worcester; and (5) for transportation, the most popular option is by car and the cost is usually \$6-10. The better time for attending meetups for students on a school day was after 5pm. As for sources, these students typically learn about meetups through social media or other peers, yet only slightly more than half have recommended meetups to peers.

Students from both groups generally agree that meetups in Boston can help advance students’ career, provide job and networking opportunities, and are worth the time and effort. However, only students with meetups experience show interest in regularly attend meetups in Boston. Students with meetups experience also show less concern about food and transportation. The recommendation from the students can be divided into five categories (from least to most number of recommendations): Hosting, Incentives, Organizations, Information and Transportation. It is clear from the recommendations that the barriers preventing students from attending meetups in Boston includes transportation, knowledge about meetups and lack of clear incentives.

5 STUDY 2: INTERVIEWS WITH MEETUP ORGANIZERS AND STUDENTS

We interviewed several people: Bret McGowen, developer advocate at Google Cloud; Gideon Wulfsohn, founder of the Boston Machine Learning meetup; Christine Sharry, Director of Student Activities at WPI; and several students from WPI. The interviews provided us with a better understanding of meetups, information regarding the logistics of organizing transportation to Boston, as well as possible barriers that prevent students from attending meetups.

5.1 BRET MCGOWEN

We interviewed Bret McGowen (pictured in **Figure 5.0**), a speaker at the Serverless Boston at Google Meetup, to get more of an understanding of meetups and the usual outcome of such events. This was the first interview that we conducted relating to our project. All three members of the IQP team were present during the interview. Hung was charged with recording his responses to the questions Quyen asked him. Amanda was charged with transcribing the entire interview after it was done. A summary of the questions we asked Bret McGowen can be found in **Appendix B**.



Figure 5.0: Bret McGowen, developer advocate for Google Cloud [3]

During the interview with Bret, we discussed some topics that improved our knowledge of meetups. These included what makes a good meetup and the difference between a conference and a meetup. We also discussed the possibility of hosting a meetup at WPI and what it would take to do so.

5.2 STUDENT INTERVIEWS

At the end of every student survey questionnaire, we had included a page that had the following words:

“Thank you for submitting! If you have attended a meetup and are willing to be interviewed, please put your email in this form: *[link to a different google form]*. We will raffle off 3 \$10 Amazon gift cards for those willing to be interviewed.”

The interview to be conducted was about the student’s meetup experience. Those who signed up and got interviewed were entered in a raffle draw to win one of the three \$10 Amazon gift cards that we had.

A couple of days after classes started for the C-term, Amanda emailed the students who signed up to set up a time for the interviews. A total of five students were to be interviewed individually. Three interviews were scheduled for the week of January 16th and two the week of January 22nd. The team reserved a tech suite in the library at WPI, so as to have a quiet environment for the interview. All three members of the IQP team were present during each interview and gave a consent form to the student interviewee before proceeding with the interview. Amanda and Hung were charged with watching the interviewee’s responses and asking added questions based on their responses to Quyen’s questions. A summary of the questions we asked the students can be found in **Appendix B**.

After conducting each interview, we gathered the most important information from the interviewee’s responses. An overview of each student’s interview is below:

Student 1: Frequent Social Meetup Attendee

The first student was a senior majoring in Mechanical Engineering with a Biomedical concentration. The main meetups that he went to were the ones hosted by WPI’s Black

Student Union (BSU) club. BSU mainly held social meetups with dinner in which students from WPI and other consortium schools were invited. The interviewee also attended a meetup at the College of Holy Cross but disliked the fact that some people did not view it as an event to socialize and engage with others in a positive manner, but rather were there for the free food or the afterparty event. However, his total experience with these meetup social events, particularly the ones in BSU was positive.

Student 1 mentioned that he would be quite interested in attending meetups held in Boston. When we asked him what he felt would be the best kind of transportation that WPI could provide, he was of the opinion that a bus that could be the best means of transport to and from the meetup in Boston. He felt that if WPI provided transportation to and from the meetup location in Boston, it would make it easier for him to attend and would increase the frequency of his attendance to meetups in Boston.

Student 1 said that previously, he did not know that there was a Biomedical Hackathon meetup, but when he found out, it was too late for him to sign-up to attend the one he found. Consequently, he felt that if WPI's Student Government Association's weekly announcement page was still in existence, it would have been a good source, maybe even the best source of information for students to know about the location, date, and time of meetups, either locally or in Boston. He also added that another good source for disseminating information about meetups would be WPI's Instagram page.

Student 2: Has Only Been to One Meetup

The second student was a sophomore majoring in both Computer Science, and Electrical and Computer Engineering who attended a meetup in Worcester, held at the company ten24, without paying any fees. He learned about the meetup through his dad's coworker in his freshman year. Before going to the meetup, he did not know what meetups were and downloaded the Meetup app from the app store to learn more about it. After the meetup, he walked away with an internship offer of designing an app without having been interviewed for the internship.

Student 2 did not think that going to meetups in Boston was worth it because it is a long distant drive for him. However, if WPI were to provide transportation to and from the meetup, it would be a different story for him. He suggested that the Student Government Association's weekly emails would be a beneficial source of information for meetups

and, in addition, it would be a good idea for WPI to host meetups on campus with known speakers.

He also felt that going to meetups alone was more beneficial than going to meetups with friends because at the time he went, he was alone. This forced him to mingle and talk to people, including company managers, which he might have not done had he gone with a friend. He also said he believed that he probably got the internship because of the freedom to mingle with company managers without worrying about his friends.

After the main questions of the interview, we asked Student 2 what he would describe a meetup as. He said that he would describe meetups as a three-part networking conference, where part one was eating and socializing, part two was the talk by the keynote speaker, and part three was also socializing, but more of firming the relationships already built.

Student 3: Frequent Game Meetup Attendee

The third student interviewed is a senior majoring in Computer Science, Interactive Media and Game Development. She said she attended mostly Worcester and Boston game meetups. Her first attendance to a meetup was a time when her friend was too shy and nervous to attend a meetup alone and asked her to go with her. From then, Student 3 began to attend meetups on a regular basis. For transportation to these meetups, she used public transportation or occasionally carpooled with friends. She said that if she finds a new meetup she will prefer to go with friends, but if she gets comfortable with the people at the meetup, she would not care if she goes alone or with friends.

She usually heard about meetups through Facebook, Twitter, or Meetup.com. She believes meetups are worth it and WPI students should get more involved with them. She usually plans and budgets weeks in advance before attending a meetup, so that she can work her academic schedule around it. Student 3 also believes that some kind of WPI newsletter could be sent out weekly or monthly to alert students about upcoming meetup events in order to get them more involved.

Student 4: Attended Mostly Religious Meetups

Student 4 is a Junior double majoring in Bioinformatics and Computational Biology. During his high school years, he attended social religious meetups within his church and

religion. These meetups occurred on weekends and about four times a year. Now in college, in addition to those social religious meetups, he attends anime, gaming, and biology meetups, as well as social religious meetups for ages 20 - 30 years. He learned about these meetups through his local Rochester youth group. He has also always wanted to attend a hackathon meetup and has been to ted talks in Albuquerque, New Mexico.

Student 4 mentioned that meetups were the reason he started becoming more involved in the community. His means of transport to meetups has been carpooling either with people from his youth group or his sister. Usually the expenses for the meetups were low; food expenses were in the range of \$20 - \$25. He believes that meetups have been definitely worth it for him. He loved the fact that he was with people who shared his interests and the things that he liked and was always excited to be at these meetups. He found the community of people at the meetups very supportive and loving. They have helped him figure out who he was as a person and how he wanted to be. The only thing he disliked about the meetups he had attended was that they were not long enough. He enjoyed the presence of everyone and was sad that the events were over too soon.

Student 4 said he is interested in attending meetups held in Boston because he enjoys going to the city of Boston and wants to meet new people. Even if transportation is not provided by WPI, he finds the commuter rail an easy way to get to Boston. He believes that if transportation is provided by WPI to and from the meetup location, it would be very beneficial to those who do not know how to use the commuter rail. He finds that in WPI, one does not really meet people outside of their “certain circle”, so going to meetups will be a great way to find people who one might not have necessarily crossed paths with in WPI, but who nevertheless shared similar interests. Student 4 also believes that posters in the WPI Campus Center and emails will be a great way to get the word out about meetup and help students know about upcoming meetup events.

Student 5: Has Been to Hackathons and Conferences

Student 5 was a Sophomore majoring in Robotics Engineering. He had attended several events, of which were hackathons on and off the WPI campus, athletic events such as fraternity socials and parties, fight for cancer events, concerts, tech talks, and conferences. One conference in particular that he attended was the Nvidia Graphics Processing Unit (GPU) conference. There was a tech talk about different graphics cards and how they can be used for machine learning. The conference was held over the summer in California. He learned about it through industry connections and did not have

to pay for it. These industry connections came from friends whom he had either met online or had collaborated with on some open source code. He wanted to attend the Computer Electronics Show (CES) during the school year, but it was too expensive without sponsorship, about \$250 a day, so he could not go. To attend hackathons, he usually would drive or carpool with his friends.

As for meetups, Student 5 has only attended a few of them, once or twice a year during breaks, but never during the school year. He found that attending all the events, whether it be meetups, conferences, or any of the social gathers and athletic events were worth it because it afforded him the opportunity to meet new people and to know what projects were coming up before they are even announced. As a result of attending all these events, Student 5 had gained knowledge, experience, and connections. However, he felt that conferences were quite expensive, and meetups were a less expensive option. He suggested that emails about upcoming meetups in Boston would be expedient for the students and that commuter rail is a good source of transportation for meetups in Boston since WPI is not far from Boston.

Student Interviews Conclusion

The interviews were very insightful. Our ideas of what students consider meetups and the barriers that prevent them from attending were certainly improved. From the interview, we gained information about what students would consider good methods of transportation, the type of information sources that was needed, and their depth of knowledge of what constitutes a good meetup experience.

Every student we interviewed believed that transportation provided by WPI to and from the meetup would be beneficial for students who are not used to public transportation such as the train or the bus as well as those who are used to it but find the distance great. This information showed us the innate significance of transportation in the attendance of meetups for the WPI students.

5.3 GIDEON WULFSOHN

As a team we wanted to interview the founder and organizer of a meetup group to find out how and why he/she started the meetup as well as his/her thoughts about meetups in general. We reached out to Gideon Wulfsohn (pictured in **Figure 5.1**), organizer of the Boston Machine Learning (Boston ML) meetup by sending him an email, and after a couple of days, we received a response from him. Gideon was more than happy to schedule an interview with us. After some challenges with conflicting schedules, we were able to schedule an audio call with Gideon for the 24th of February. All three members of the IQP team were present for this interview. Amanda and Hung were charged with watching Gideon's responses and asking added questions based on his responses to Quyen's questions. A summary of the questions we asked Gideon Wulfsohn can be found in **Appendix B**.



Figure 5.1: Gideon Wulfsohn, founder of Boston ML meetup group [4]

Gideon Wulfsohn founded Boston Machine Learning (Boston ML) on September 20, 2014. The goal of this meetup was and still is “to help connect developers with machine learning practitioners from academia and industry” and thus help them gain the intuition necessary to solve problems with machine learning. Boston ML has focused its presentations and events on five different areas: (1) statistical computing, (2) open source, (3) Python, (4) data visualization, and (5) machine learning. Throughout the years, Boston ML has been sponsored by companies such as Localytics, Amazon, Spotify, StubHub, and IBM. This enabled Boston ML to provide both space and food for its attendees. Boston ML is currently in partnership with the company O'Reilly [2].

From the interview we had with Gideon, we learnt the following:

- how he founded Boston ML
- how he knew about meetups
- what he disliked about meetups

- what he thought the definition of a meetup should be and the importance of going to one

How Gideon Founded Boston ML

When Gideon was a sophomore in university, he and his freshman roommate created a club called “Tufts Data Science Club” where all students, whether undergraduate or graduate, were welcome. The club was designed so that graduate students, or any student doing research or working on a side project could come and lead a session, during which the person could talk about what he or she were doing. One day, feeling bored while in his systems programming class, Gideon decided to put the Tufts Data Science Club on Meetup.com. Before he knew it, not only were Tufts students attending, but people all the way from downtown Boston were attending. In about a week, almost 500 people signed up for the meetup. At present, more than 6,000 people have signed up for the meetup group.

How He Knew About Meetups

While in San Francisco, Gideon would go to Python based meetups held by Yelp and other big companies, to see people work on Python and hear the funny, charismatic speakers talk about the programming language. Gideon said,

“Asking me how I knew about meetups is like saying, you live in San Francisco and [one asks you] how do you know what an iPhone is. Everyone goes to meetups. It is ginormous here. Like every day there are a dozen different incredible meetups you can choose [from].”

Meetups were and still are very popular in San Francisco. Meetups, especially the ones hosted by big companies, are also very popular in Boston, however, many students at WPI are not aware of the ones available there. Thus, students are missing out on the benefits of attending the meetups held by interesting speakers in Boston.

What He Disliked About Meetups

Over the years of holding and organizing meetups, Gideon noticed that not all the people that RSVPed for the meetup event attended. So, one could get over 450 RSVPs with less than 100 people actually showing up. This posed a problem when it came to head count

and anticipating the amount of supplies to bring to the meetup place. To counteract this, however, Gideon imposed a signup five-dollar fee. The money collected was then donated to code.org. In this past year, Boston Machine Learning was able to donate over 2,500 dollars to code.org by just selling five-dollar tickets.

Definition of a Meetup and The Importance of Going to One

Gideon defined a meetup as an event that,

“brings people together for a session that is going to be of a length that you [will not get] bored. So, it’s not the length of a conference, it’s much shorter. It is at the price point that is much more accessible to everyone, versus a conference. It is either free or basically free. It adds food and drinks and stuff, so people can hang out, meet each other, [and] get to know what people are working on. It is not exclusive. Anyone can sign up regardless of how much previous knowledge you have.”

He also argued that the whole point of a meetup is not to attend one remotely. One should want to go to a meetup and socialize with people. Going to a meetup remotely defeats the whole purpose of a meetup and makes it basically impossible to receive the full benefits of it.

5.4 WPI DIRECTOR OF STUDENT ACTIVITIES

To get a better idea of how possible transportation could be set up and whether it is feasible, we decided to email the WPI Director of Student Activities, Christine Sharry, pictured in **Figure 5.2**, to see if she was willing to be interviewed regarding the logistics of organizing transportation to Boston meetups and what it would take to hold an event on campus.



Figure 5.2: Christine Sharry, WPI Director of Student of Student Activities [5]

Transportation

Sharry said that if we wanted to organize transportation to a meetup in Boston on behalf of the WPI institution or as a WPI event, there would be several things needed:

- Student attendees signed waivers
- A sponsoring entity: student organization or department sponsor
- Funding for bus to and from the meetup location
- Securement of housing where the meetup would take place
- An organization, such as a club that is recognized on campus, which could be responsible for assisting in booking the buses, providing the payment, and facilitating travel waivers

To Create A Club

Sharry said that one possibility of hosting an event on campus would either be through creating a club just for meetups. However, to create a club, she said that we would

“need to come up with a constitution, officers, and a full-time faculty or staff to serve as an adviser. [We would] need to come up with a proposed budget and submit it and wait for approval. Once that’s through, [we would need to] do two informational meetings where [we] provide the agenda of the club and the minutes from the meeting to my office and after we’ve had those two

meetings then [we would] meet with the student organization council or the SOC. And that's where they vote to approve or deny the group as a recognized club."

If a club at WPI were to be created for meetups, this would make the process of getting transportation to meetups in Boston easier because, with funding, there would already be a student organization sponsor and the expenses of the transportation would have already been factored into the funds for the club.

Hosting A Meetup on Campus

Sharry said to host an event on campus, there are different things to consider:

- **Speaker:** To have a speaker on campus, they need to be recognized or be sponsored by an organization or department. There is also a checklist that WPI uses to verify the speaker's information so as to have an idea of who they are allowing on campus and what they are going to be speaking about.
- **Expenses:** If the event was going to be held in Alden Hall (used for lectures, performances, and other events), for example, and many people are expected, we might need to pay for a custodian in that building, as well as a police detail. Also, we need to have people who would set up the hall and breakdown the set up after the meetup.

With careful planning and budgeting, hosting a meetup on campus is doable.

A few of the students that we interviewed as well as many students who participated in the survey said that the Student Government Association used to send out weekly emails of upcoming events on campus. They intimated that that source would be good for advertising meetups that are either happening on campus or off-campus. However, Sharry agreed and said that the Student Government Association is working on starting those types of email again.

6 DISCUSSION

Our research of past meetups, our meetup experience, the survey data, and interviews that we held with students and industry experts has shed light on many issues related to students and meetups at WPI. Using the information that we have gained has given us a definitive understanding on meetups and helped us to delineate and explain meetups to students. We have also been better positioned to make recommendations we believe will facilitate attendance to meetups.

6.1 STUDENTS' MISCONCEPTIONS OF MEETUPS

Quite often, people are confused about what a meetup really is. For example, some think it is a conference, some think it is as a club, and others define it in many other ways. Student 2 defined a meetup based on his experience as a three-part networking conference, where part one was eating and socializing, part two was the talk by the keynote speaker, and part three was more socializing with a view of solidifying the relationships started at the beginning of the meetup. Student 3 felt that it could be defined as a casual, but still professional setting where people gather to talk and network. Gideon Wulfsohn, founder and organizer of the Boston Machine Learning meetup, defined a meetup as an event that brings people together for a nonexclusive session that is not long and is at the price point that is accessible to everyone.

However, based on our research, our own definition is as follows:

Definition: A meetup is an event that brings all kinds of people together in one place, most times frequently to explore and learn topics presented through the help and support of each other – all in pursuit of individual growth and knowledge.

Below we elaborate on topics that have confused students and misguided their interpretation of what a meetup is.

6.1.1 Conferences vs. Meetups

One of the major problems people who took our survey, students we interviewed, as well as our team had with the definition of a meetup is whether a conference can be considered a meetup. Over the course of our project, some of the people we interviewed compared a meetup and a conference and were able to help us answer the question: is a conference a meetup? Some of the interviewee's ideas are as follows:

Bret McGowen (a Google Cloud Developer Advocate)

- In a conference, one goes and sits at several sessions, learn the topic, and then leaves; while a meetup is more intimate, usually smaller, and more informal
- In a meetup, there is a good mix of people who know a great deal about the topic, a little bit, or people who are just brand new; whereas a conference most of the time has many advanced people, who are either already working in the field or know much about the topic
- A sign of a good meetup is that there are a lot of questions
- A meetup has a fun environment while a conference has a professional environment

Gideon Wulfsohn (founder of the Boston Machine Learning meetup)

- A conference is an event that is often unaffordable by some students unless there is some sort of student discount, in which case it can still be about \$50 to \$100
- Meetups provide access to brilliant speakers in a really affordable way

Student 3 (Frequent Game Meetup Attendee)

- Meetups have a small, casual environment, and are very budget friendly
- Conferences are very large with a more professional setting, and often very expensive
- Some conferences are so expensive that organizations have to give out scholarships for students to attend.
- Meetups happen on a monthly to bi-monthly bases while conferences are more annual

Conclusion: Conferences are not considered meetups.

6.1.2 Hackathons vs. Meetups

A hackathon is an event, usually hosted by a tech company or organization, where programmers get together for a short period of time to collaborate on a project. The participants work rapidly and often work without sleep to achieve their task, as the events generally last 24 hours or throughout a weekend. Some hackathons are not exclusive to any particular field, are open to the public, and are meant for people to mingle and form groups to perform whatever task they are interested in during that hackathon. Such hackathons are considered meetups, whereas those with restrictions to certain disciplines and have rules of participation are not meetups.

One of the benefits of attending a hackathon meetup is the opportunity to meet new people who care about the issue or technology that you care about. Whether it is for project collaboration, finding a mentor, or even potential employers, hackathons are a great place to make connections that could pay dividends in the future.

Conclusion: A hackathon may or may not be a meetup.

6.1.3 Tech Talks vs. Meetups

Tech talks are another type of event where students or anyone with an idea to present can give short presentations with community question and answer sessions. They are usually under an hour in length and often focus on a specific technical topic.

Examples of some meetup groups focused on tech talks are:

- Boston AI Tech Talks Group, located in Boston, Massachusetts with currently 251 members, is a meetup group that invites tech leads from companies and successful startups to talk and share their practices, practical experiences, as well as provide solutions to engineering problems through tech talks.
- IBM Tech Talks, originating in New York, New York with currently 276 members, is a monthly meetup group featuring start-ups that are reshaping industries
- Criteo Labs Tech Talks, originating in Palo Alto, California with a current 329 members, is a meetup group that discusses innovative technologies and

applications that are relevant to the field of computational advertising & online e-commerce.

Conclusion: Tech talks are considered meetups.

6.1.4 Social Outings vs. Meetups

A social outing is often an event among students where they gather and socialize with each other. Different from the aforementioned events, a social outing does not necessary, if not at all, have to be academically-driven. Participants come together and talk with each other socially and sometimes might have academic discussions. The goal of a social outing is to foster bonds between members of the social group.

Since there are many meetups that are entirely for social purposes (e.g. Social Boston, Nerd Fun - Boston, The Providence Collective, etc.), a social outing can be considered a meetup if it is designed to meet new people and get to know one another. This is supported by the interview with Student 1 and Student 4, as both have attended social meetups in the past:

Student 1:

- Attended the Black Student Union (BSU) meetups
- Had social dinners that were meant for getting to know one another better
- Celebrated Black History Month with other BSU members as a group

Student 4:

- Attended mostly religious meetups
- Learned about these meetups through his local Rochester youth group
- Met people who shared similar interests with him
- Enjoyed supportive and loving community

By the same logic, not all social outings are considered meetups. For example, a gathering of a group of friends who go to the same concert or movie is not considered a meetup since it was not tailored for meeting new people of similar interests but rather for a particular informal activity.

Conclusion: Social outings may or may not be a meetup.

6.1.5 On-Campus Student Organizations vs. Meetups

An on-campus student organization is a group of students who join together on a school campus for a common purpose. In WPI, there are many on-campus organizations that students can join, such as Woman in Computer Science (WiCS) club, Game Development Club (GDC), Vietnamese Student Association (VSA), National Society of Black Engineers (NSBE), etc. These organizations occasionally host events to gather students together and allow them to communicate with their peers. However, one characteristic of a meetup is its inclusiveness and openness to people with varying experiences. An event hosted by an on-campus organizations can be considered a meetup if and only if it is open to public. For example, the VSA Lunar New Year Show (Tet), is open to students from other college campuses. The TEDxWPI event has always been open to people from outside WPI. During an interview with Gideon Wulfsohn, he also mentioned how his on-campus organization in Tufts University developed into a meetup as he allowed people outside of Tufts to sign up. Nevertheless, there are numerous events hosted by on-campus organizations that are exclusively for WPI students. For example, the IEEE Networking Dinner is limited to WPI students to seek job opportunities, and the SGA Scavenger Hunt is also designed for WPI students to have fun and foster bonds with their peers. Thus, events hosted by on-campus organizations that are designed exclusively for students of the college campus are not considered meetups.

Conclusion: An on-campus student organization may or may not be a meetup.

6.2 HOW TO HOST A MEETUP

Based on our project, our team was able to determine several factors for hosting a meetup. These factors can be grouped into questions such as who, what, when, where, and how categories.

The Who: The Community

When it comes to the who, it involves finding one's community of attendees. Knowing exactly what audience you are targeting with the meetup event will determine the other factors in planning of the hosting of the meetup. A common rule-of-thumb in event planning is that about 40 percent of people who RSVP for a free event will actually attend. Keeping this in mind can help one better estimate the total expected attendance.

However, with a really active and engaged audience, the percentage could likely be higher. Also, the more in-touch one is with potential attendees and the more personal the invitation, the more one has a better idea of the expected number of people who will attend.

The What: Structure of The Event

When it comes to the structure of meetups, there are no specified “rules” - it can be as organized or as fluid as one would like. If one already knows the audience, then the structure can be geared towards what is appropriate. Depending on the structure of the meetup, there may or may not be a period of networking. If there is, it is important to float around through the crowd, making sure people are mingling and feeling welcomed.

The When: Choosing A Time for The Meetup

Knowing the target audience should help one determine what day of the week and what time of the day is ideal for the meetup event. If one cannot tell or is not sure, it may be expedient to ask the audience for suggestions. Collaborating with potential attendees to schedule a time for the meetup could increase the number of people who actually attend and might make them feel more engaged in the meetup before it has even begun.

The Where: Location

Where the meetup is being held is highly dependent upon how many attendees one expects. If one expects less than six or eight people, then maybe a coffee shop might be a suitable location, depending on the type of meetup. If more than that number is expected, one might want to look for a large enough room and factor in some refreshment costs. Also, one might look into possible company sponsors or even centers that offer spaces for event rentals and provide wide open layouts that are great for meeting and mingling.

The How: Promotion of The Meetup

Promoting the event two to three weeks beforehand could be a good idea as it would allow for good exposure. In some cases, one might reach out to potential attendees by email to invite them one on one. This strategy may yield a great return and also allow for more of a connection and opportunity to touch bases with each other.

A few helpful tools for promotion:

- Meetup.com is a site where you can find meetups or create meetups of your own.
- Eventbrite is a powerful event organization tool and free to use for free events.

- Facebook events and Google+ Events are great ways to create a place for people to reference and RSVP.

It may be necessary to post to as many accounts and networks as needed to reach one’s desired audience. Targeting one’s Facebook posts can help so that only the audience one wants to see your posts will see them. Studies show that all the Meetup groups do not survive over a prolonged period of time [11]. Survival of a Meetup group is directly connected to its capability of attracting population [18].

One could ask his or her community of attendees to help spread the word. For events in which one has space limitations or catering, people have to be encouraged to RSVP and it should be made easy to do so. It also helps to give a deadline for RSVPs (especially if space is limited). Deadlines create a sense of urgency that can help drive action.

One should follow up after each event and build upon the foundation for an even closer connection to the community of attendees.

Table 7.0 shows a quick checklist of all the things needed to be done for hosting a meetup:

<input checked="" type="checkbox"/>	CHECKLIST before the meetup
<input type="checkbox"/>	Think through the goals and the audience
<input type="checkbox"/>	Find a location that suits the needs of the meetup
<input type="checkbox"/>	Pick a time, date, and catering (if needed)
<input type="checkbox"/>	Create an easy way for attendees to spread the word and RSVP

Table 7.0: A checklist of the things that need to be done for hosting a meetup.

There is certainly no one way to organize a meetup and each event will be unique. These in-person events are worthwhile; the amount of emotion and communication conveyed in face-to-face interactions cannot be substituted. If one is planning a meetup, it may be good to start small and build as your experience grows.

6.3 DATA ANALYSIS DISCUSSION

6.3.1 Data Overview

Based on our preliminary research, we concluded that most meetups are related to technology and other emerging related fields. As a result, we expected that students who have gone to meetups have their major disciplines in these fields of study. Our survey data confirms that hypothesis. **Figure 4.6** shows that most students with meetup experience have attended a meetup related to their academic/fields of interest and **Figure 4.3** shows that the top three majors for these students are Computer Science, Robotics Engineering, and Biomedical Engineering. This trend may be because Computer Science has garnered much attention lately with the advancement of artificial intelligence, machine learning, blockchain, etc. In addition, Robotics Engineering is also growing rapidly, especially in the autonomous car sector while Biomedical Engineering is bringing countless innovations through bioinformatics, biotechnology, and biomedical breakthroughs.

We also expected that most students who have gone to meetups were upperclassmen or graduate students, based on the assumption that upperclassmen and graduate students would have more need and therefore, make the time and resources available to explore opportunities that meetups are likely to render. Our survey data, shown in **Figure 4.2**, confirmed our assumption.

Conclusion: Most students with meetup experience are upperclassmen or graduate students majoring in technology and other emerging related fields.

6.3.2 Current Meetup Trends in The Boston Area

An article from Priceonomics collected 127,000 meetup events from Meetup API from 2002 to 2015 to understand the meetup trends in the United States [31]. We based much of our assumption about current meetup trend in the Boston area on the article's analysis.

Based on the article, the three most popular meetup types in the US are Career/Business, Technology, and Socializing while the most popular meetup type in Boston is Socializing. **Figure 4.5** and **Figure 4.14** show that the most popular meetup types among

students are technical presentations, social gatherings and follow-along tutorial workshops. These data prove that Boston meetup offerings are likely to fit WPI students' interest.

The article also ranked cities based on various criteria. Boston was ranked 11th for most popular American cities for meetups. Cambridge was ranked 5th and Boston was ranked 13th for cities where technology is unusually popular. Cambridge was ranked 3rd and Boston was ranked 11th for cities with the highest tech meetups. These rankings prove that Boston area meetup communities, especially the tech community, is extremely vibrant.

Conclusion: It is clear from these data that Boston is a suitable place for WPI students to look for meetups, Boston area meetup opportunities are plenty and likely to suit WPI students' interest.

6.3.3 Current Meetup Culture at WPI

Since meetups are relatively new, we expected the number of students who had gone to actual meetups to be quite small. From **Figure 4.0**, we see that there are only 25 participants that have meetup experience while there are 258 participants that have never been to a meetup. This distribution suggests that our hypothesis was right.

We expected that peer-to-peer relationships play a crucial role in fostering a meetup culture at WPI and our expectation was confirmed. **Figure 4.4**, **Figure 4.13**, and **Figure 4.11**, respectively, show that students with meetup experience usually go to meetups with other people, that most students, regardless of meetup experience, prefer going to meetup with peers, and that other students or peers is the second top source for discovering new meetups. However, **Figure 4.12** shows that only slightly more than half of the students with meetup experience have recommended meetups to their peers. These findings imply that even though having fellow students to go to meetups with is desirable and there are small groups of students that have gone to meetups together, students do not expand their meetup circle further than their friend circle. This attitude hinders the expansion of the meetup culture at WPI.

Given the close proximity and the opportunities in Boston, we expected that WPI students would show interest in meetups in Boston. This assumption is true for students

with meetup experience. **Figure 4.7** shows that a large number of student with meetup experience have gone to a meetup in Boston and **Figure 4.15** shows that most students in that group are interested in (or already are) regularly attending meetups in Boston. However, students without meetup experience are not as enthusiastic. This is evident in **Figure 4.15**.

Based on our preliminary research, we identified some benefits and obstacles of attending meetups in Boston. We presented our findings to students from both groups and compared their answers. We expected the distribution of the answers for both groups to be the same. Our assumption is largely true. Both student groups agree to the benefits of meetups, as shown in **Figure 4.16**, **Figure 4.17**, **Figure 4.18**, and **Figure 4.19**. Both student groups also agree that meetups are worth the time and effort. However, the responses from the two groups show some differences regarding interests in Boston as well as regarding food and transportation concerns as evident in **Figure 4.20** and **Figure 4.21**.

So far, we see that even though a large number of students in the “No Experience” group are able to see the benefits of meetups and admit that meetups are worth the time and effort, most students in this group are unwilling to regularly attend meetups in Boston. It is clear that, for these students, the disadvantages of going to meetups in Boston outweighs the advantages. Unless we pinpoint and address their concerns, it will be very hard to promote a meetup culture at WPI. Nevertheless, we have noted two important concerns: transportation and food.

Conclusion: Current meetup culture at WPI is almost non-existent. Since most students prefer going to meetups with friends, peer recommendation is very important in promoting meetup culture. Only students who have gone to meetups are willing to regularly attend meetups in Boston. This is because for students who have never gone to a meetup, the cons of going to meetups in Boston outweighs its benefits. Meetup culture at WPI can only thrive when students’ concerns have been addressed.

6.3.4 Student Recommendations

From **Figure 4.11** we can clearly see that academic institutions, including faculties, administrative staffs and school-related resources, have not been a good source of meetups. However, when asked how WPI can help students go to meetups in Boston,

most students were able to suggest meaningful solutions. In this section we will explore the validity of those recommendations, evaluate them based on whether they are applicable to WPI students, faculties, and administrators, and apply the insights gained to our recommendations in **Section 8.2**. Some of the students' suggested solutions to meetup attendance are as follows:

Hosting

- Hosting at WPI: This is a possible solution. Throughout the year there are numerous tech talks hosted at WPI, by either on-campus clubs or the CDC. We discussed hosting events at WPI with Christine Sharry, WPI Director of Student of Student Activities, and listed the steps needed to host an event at WPI in **Section 5.4**.
- Hosting locally in Worcester: This is a possible solution. As shown in **Figure 4.7**, almost half of the students with meetup experience have attended a meetup in Worcester. This may suggest that WPI students are interested in attending meetups in the Worcester locality and in exploring opportunities within the Worcester meetup community.
- Attending meetups remotely: This might not be a good idea. As mentioned by Gideon, meetups are events where people can meet and mingle together. He believed that attending meetups remotely would defeat this purpose.

Incentives

- Food: Even though this is a valid concern, this might not be a possible solution since the choice of catering depends solely on the meetup organizers and our focus is on recommendations for WPI community.
- Job and networking opportunities: This concern can be solved by being transparent about the participants. If the students know beforehand other participants, they will be better prepared with their networking and job searching strategies. This is an included feature on the Meetup.com website; an example of using an online platform to manage offline interactions [26]. However, since **Figure 4.4** and **Figure 4.13** show that WPI students prefer having companions, it

might be expedient to have a list of WPI attendees to ensure the students that they are unlikely to be attending meetups alone.

- Reduced event fare: This is achievable by contacting the meetup organizers beforehand to ask for student discounts. However, meetups are generally free or cost about \$5, so this solution might be unnecessary.
- Class excuse: This is a valid concern for the students since they might have to miss evening classes to be on time for the meetup. It may be possible to ask professors at WPI to allow students to drop a quiz or excuse the students' absences as a result of a meetup attendance. This solution is therefore possible.
- Class credit: This is an effective method to motivate students to attend meetups, since their attendance tie directly with their grade. This solution is not out of the ordinary at WPI since there already exists some courses that require students to attend certain events. For example, some art classes at WPI requires trips to the Worcester Art Museum or even Boston.

Organizations

- Partnering with on-campus clubs: This is a valid solution since on-campus clubs are the third top source for students to discover new meetups, as shown in **Figure 4.11**. Usually, these clubs have experience hosting events on-campus, making it easier to host meetups at WPI.
- Starting a new club: While this is a valid solution, it is quite inconvenient. We listed the required steps in starting a new club in **Section 5.4**.
- Partnering with Student Government Association (SGA): This is a possible solution since SGA regularly organizes trips for WPI students. SGA might be able to help in arranging meetup transportations.
- Partnering with departments: This is a great suggestion. WPI departments each have their own newsletter detailing interesting upcoming events or opportunities. By partnering with departments, notable meetups can be featured in their newsletters.

- Partnering with faculties: This is a useful suggestion because if faculties are aware of upcoming meetups, they can either design their course schedule around the meetups or incorporate them into the syllabus.
- Partnering with the Career Development Center (CDC): This is a great suggestion. The CDC occasionally sends out career-related event newsletters and host some career-related events on-campus. By partnering with the CDC, notable meetups can be featured in the CDC's newsletters and students can receive help if they decide to host meetups at WPI.
- Partnering with hosting organizations: One can contact the hosting organizations to assist WPI students with transportation and event costing. The hosting organization can also be requested to host the event at WPI. However, as Bret McGowen had mentioned, students need to build a certain reputation level for themselves before they can invite big companies for meetups at WPI.

Information

- Email: This is a promising solution. Since all WPI events are advertised via emails, WPI students are familiar with this method. Also, since emails are the most popular specific recommendation related to information, as evidenced in **Figure 4.26**, the method has a considerable degree of effectiveness. Additionally, as mentioned in **Section 4.1**, members of our team, in this project, successfully used emails to recruit survey participants.
- Calendar: This is a promising solution. Some students suggested maintaining a public calendar of upcoming meetups. Since many students rely on Google Calendar or Outlook Calendar to plan their schedule, this public calendar will help them add meetups to their schedule more easily. Additionally, some on-campus clubs have been applying this method with quite a degree of success. Examples include Computer Science clubs such as Women in Computer Science (WiCS), Association of Computer Machinery (ACM), and Computer Security Club (CSC). All these clubs maintain one shared calendar to help members schedule upcoming events and to avoid conflicts when planning future events. Therefore, a public calendar is certainly useful for WPI students to use in getting information for upcoming meetups.

- RSVP: This is a possible solution. **Figure 4.4** and **Figure 4.13** show that WPI students prefer having companions. Hence, having a list of WPI students who have signed up for upcoming meetups can benefit students since they might see their friends as having signed up for attending the meetup.
- Website: This is a possible solution. While meetup.com is usually where meetups are advertised, the site is not tailored to WPI students. One possible idea for a WPI-tailored meetup website is to include only meetups that fit WPI course schedule. The website can also incorporate other suggestions, such as Calendar or RSVP.
- Social media: This is a promising solution. Most students have at least one social media account and a large number use social media quite frequently. Additionally, as mentioned in **Section 4.1**, our team used social media with great success to recruit survey participants.
- Workshop / Info session: This might not be a possible solution. Students would want to learn about meetups whenever they want with the least amount of effort. Attending a workshop or an info session requires students to make an effort to physically attend and allocate time for the event.
- Techsync / Campus Labs: This might not be a thorough solution. Campus Labs, or previously known as Techsync, is WPI official site for on-campus events. While there are possibilities of hosting meetups at WPI and advertising them on Campus Labs, students will not be able to advertise meetups in Boston on this platform. The main focus of our project, however, is meetups in Boston.
- Poster: This is a possible solution. All buildings at WPI have a bulletin board for students to pin upcoming event posters. All WPI official events and most clubs take advantage of these bulletin boards. Additionally, some WPI facilities even allow free poster printing.
- Handshake: This might not be a very good solution. Handshake is WPI official site for career-related events. However, as shown in **Figure 4.5** and **Figure 4.14**, WPI students are also interested in social gatherings, which are not always career-related. While one can advertise upcoming career-related meetups, one would still

need to find a site to advertise other meetup types. Since our team prefers a consistent solution for all meetups, this solution is not preferable.

Transportation

- Shuttle: While this suggestion is interesting, it might not be a good idea. Since the commute from Worcester to Boston is more than one hour, arranging a regular shuttle would be very costly. Moreover, we cannot guarantee that the shuttle will always be fully utilized.
- School bus: Arranging on-demand school buses to meetups is a solid idea. Since we only arrange the buses when we have enough interests, we can make sure that the resource is fully utilized. All student outing trips organized by the Student Activities Office (SAO) use school buses as the transportation method. We listed the required steps in booking a school bus for an event in **Section 5.4**.
- Reduced travel fare: Some students suggested giving out discounts to train or ride sharing fares. This might not be a good idea because we are focusing on recommendation for WPI community and fare reduction depends solely on the transportation service providers.
- Train: Some students suggested utilizing the train. This is a possible idea. The train is extremely accessible because the schedule is publicly available online, the train station is 10 minutes driving distance from WPI and also, WPI provides transportation services free of charge that take students to the train station from evening to early morning. Additionally, **Figure 4.8** shows that train is the second most popular transportation method for students with meetup experience.
- Carpool: This is a possible idea. A considerable number of WPI students have cars. If not, Zipcar is readily available and is a popular option for WPI students. Additionally, **Figure 4.8** shows that car is the number one transportation method for students with meetup experience.
- Travel reimbursement: This might not be a possible solution. While processing reimbursements for students might be easy, processing reimbursements for multiple students regularly is time-consuming and will quickly grow burdensome to WPI officers.

7 LIMITATIONS & FUTURE WORK

7.1 LIMITATIONS

While our project successfully communicated with a wide range of students across all academic levels and majors, we realized that there were more things we could do to improve our scope but was not able to do so due to several constraints of the project. We also acknowledged some of the current limitations of our project that we had yet to visit and noted them in the event that anyone wished to extend our project in the future.

Lack of Faculty / Department Representatives

One of the limitations of our project is that despite our prior plan for gathering information from the professors and other school faculty members, we decided not to proceed with this plan due to the time constraint. As a result of the unexpected high responses from the students, we decided to focus our attention on those responses rather than consult the opinions of the faculties. We knew that we would not have time to address all of the responses for both the students and the faculty. However, if we had also surveyed the faculty members and taken their concern into consideration, we probably could have obtained a better overview of WPI's meetup culture and probably come up with better recommendations.

Scope Limited to WPI Population

As the main target for our project was WPI students, our data came from the student's responses to the survey. Therefore, we had a very subjective point of view towards meetup culture at WPI. In addition, we did not survey other schools in the Worcester area in terms of their meetup culture, that means, we might have missed out different perspectives which might have impacted our evaluation and understanding of the meetup culture at WPI. Also, we did not observe possible strategies other schools are using in promoting meetup culture and aiding their students in term of attendance to meetups. In other words, if we managed to expand our scope outside the WPI population, we might have been able to gain a better understanding of WPI's meetup culture and perhaps deliver a stronger list of recommendations based on existing measures for improvement in the attendance of meetups.

Theory-based Approach

The project was based on data collected from the students, and our suggestions and recommendations were based on the opinions of the students as well as suggestions from industry experts. Since there has been no evaluation on the effectiveness of our recommendations, it is possible that WPI leadership may not be persuaded to attempt our approaches. Therefore, we believe that a more in-depth look and practical approaches based on our recommendations would be needed to validate our present recommendations.

7.2 FUTURE WORK

Given some of our current limitations, there is room for extension of the project at a future date, for example, WPI faculty members could be included in our survey demographic or have a separate survey dedicated to faculty and the different departments. The members of the faculty could be interviewed to discuss topics such as integrating meetups into their course syllabus.

Instead of focusing entirely on the WPI population, one could conduct a separate study on current awareness at other universities in Worcester and try to inculcate their practices into those of WPI with a view for improvement of meetup culture at WPI. Another possible idea would be to have the consortium of universities in the Worcester environment collaborating to improve meetup culture. Therefore, one could extend this project by making a website or an iOS and Android friendly app completely dedicated to WPI and the neighboring universities. This may encourage the students to communicate their ideas and enjoyment of meetups with each other, thereby helping to promote the overall meetup culture in the consortium.

Lastly, one can start a meetup-dedicated club at WPI and invite speakers from the industry to continuously host meetups on a bi-weekly or monthly basis at WPI. This could change the idea that academic institutions are not a good place for discovering meetups and turn WPI into a center that promotes meetup culture in the Massachusetts area.

8 CONCLUSION & RECOMMENDATIONS

8.1 CONCLUSION

The goal for this IQP project was to investigate the current status of meetup culture at WPI across all academic levels and majors, identify the key factors that discourage students from attending meetups, and find ways to improve attendance of meetups by WPI students.

Over the course of this project, our team successfully accomplished the milestones for our key objectives. Our achievements are:

- Used the website Meetup.com to collect the data of several meetups from January 2016 to December 2017 to understand the typical start and end times, price, and various locations of meetups.
- Distributed a survey to WPI students regarding their attendance of meetups and got 322 responses as well as held student interviews, which helped us identify: students' opinions of meetups, the key factors that discourage students from attending meetups, and ways to improve the attendance of meetups.
- Gathered valuable industry opinions and the opinion of the WPI Director of Student Activities on what a meetup was, information regarding the logistics of organizing transportation to Boston, as well as possible barriers that prevent students from attending meetups.

According to the data we collected, we found that only less than 10% of WPI students have attended what is considered a meetup; most of the students either have not gone to a meetup or have misconceptions of what a meetup actually is. Thus, the meetup culture at WPI is mostly nonexistent, reassuring our project's relevancy. Our study also showed that many WPI students are generally interested in meetups and agree on meetups' benefits in the improvement of academic interests, widening of social network, provision of career opportunities, as well as meetups' ability to positively impact personal growth.

During this project, our team gained a deeper understanding of the root causes of why the meetup culture at WPI is nonexistent and thus, provided practical suggestions for improvement. As a result of our study, we made recommendations that we believe could change the nonexistent meetup culture to a fully functioning and positive meetup culture at WPI.

8.2 RECOMMENDATIONS

In **Section 6.3.4**, we explored the validity of the student recommendations based on whether they are applicable to WPI students, faculties and administrators. In this section, we will reorganize the valid recommendations by the three aforementioned groups. We will also add some of our own suggestions. Some recommendations will show up multiple times since they are applicable to multiple groups.

Our Recommendations for Students

- Individual students:
 - Create an account on Meetup.com and explore meetups in your interest area. Meetup.com also offers daily or weekly meetup suggestions
 - Check social media for upcoming meetup opportunities
 - Promote meetups, along with their benefits, to your peers
 - Share your meetup experience and lessons to your peers
 - Invite fellow students to go to meetups with you
 - Organize meetup trips between you and your friends. Your group can either organize carpools or utilize public transportation to attend meetups.
 - Plan your schedule early (a week or a month in advance) and incorporate in it a meetup event or meetups of your interest

- Student clubs:
 - Promote meetups, along with their benefits, to club members via weekly emails, posters, a shared calendar, an RSVP list or through social media
 - Notify members about interesting upcoming meetups
 - Organize transportations to go to meetups as a group. The club can either organize carpools, utilize public transportations or book a school bus

- Have post meetup discussions to provide club members an opportunity to share their experience and what they learned about the meetups that they have attended
- Host meetups at WPI or in Worcester
- Student Government Association (SGA):
 - Promote meetups, with all its potential benefits, to the student body
 - Allocate funds to support meetup-related activities, such as the hosting of a meetup at WPI or booking a school bus for a meetup in Boston

Our Recommendations for Faculties

- Department:
 - Promote meetups and their benefits to your students via weekly departmental emails, posters, a shared calendar, an RSVP list or through social media
 - Allocate funds to support meetup-related activities, such as organizing a meetup at WPI or booking a school bus for a meetup in Boston
 - Incorporate the attendance of meetups in Boston into the curriculum
 - Host meetups at WPI
 - Have post meetup discussions to provide students an opportunity to share their experience and what they learn about the meetups that they have attended
- Professors:
 - Promote meetups and their benefits to your students
 - Incorporate meetups into your course syllabus. For example, you can make attending meetups a requirement or extra credit to encourage the students to go to meetups
 - Allow dropping some lowest score quizzes or giving out excused absences so that students can use them to go to meetups that they are interested in
 - Consider meetup attendance when assigning deadlines to class assignments

Our Recommendations for WPI Administrators

- Promote meetups, along with their benefits, to your students via weekly departmental emails, posters, or through social media
- Incorporate meetups into the school curriculum. For example, you can make attending meetups a requirement for graduation
- Host meetups at WPI
- Allocate funds to support meetup-related activities, such as organizing a meetup at WPI, possibly in the new Foisie Innovation Studio, or booking a school bus for a meetup in Boston

REFERENCES

- [1]. 10211597054786630. “Meetup: A Usability Case Study – UX Collective.” *UX Collective*, UX Collective, 1 May 2017, uxdesign.cc/meetup-a-usability-case-study-e909c33f1e3e.
- [2]. “Boston Machine Learning (Cambridge, MA).” *Meetup*, www.meetup.com/bostonml/.
- [3]. “Bret McGowen.” *Twitter*, twitter.com/bretmcg.
- [4]. “CharlieCard.” *Wikipedia*, Wikimedia Foundation, 10 Apr. 2018, en.wikipedia.org/wiki/CharlieCard.
- [5]. “Christine Regina Sharry.” *WPI*, www.wpi.edu/people/staff/crsharry.
- [6]. Conners, Joan. “Meetup, Blogs, and Online Involvement: U.S. Senate Campaign Websites of 2004.” Sept. 2005, doi:10.1.1.547.1407.
- [7]. “Gideon Wulfsohn.” *Crunchbase*, www.crunchbase.com/person/gideon-wulfsohn#section-overview.
- [8]. “Hack.edu: Examining How College Hackathons Are Perceived By Student Attendees and Non-Attendees.” *Philip Guo - Hack.edu: Examining How College Hackathons Are Perceived By Student Attendees and Non-Attendees*, pgbovine.net/hackathon-paper.htm.
- [9]. Hampton, Keith, et al. “Social Isolation and New Technology.” *Pew Research Center: Internet, Science & Tech*, 4 Nov. 2009, www.pewinternet.org/2009/11/04/social-isolation-and-new-technology/.
- [10]. Hempel, Jessi. “This Is Why WeWork Is Buying Meetup | Backchannel.” *Wired*, Conde Nast, 29 Nov. 2017, www.wired.com/story/why-wework-is-buying-meetup/.

- [11]. Lai, Chih-Hui. "Can Our Group Survive? An Investigation of the Evolution of Mixed-Mode Groups." *Journal of Computer-Mediated Communication*, vol. 19, no. 4, 2014, pp. 839–854., doi:10.1111/jcc4.12075.
- [12]. Lai, Chih-Hui, and James E. Katz. "Volunteer Associations in the Internet Age: Ecological Approach to Understanding Collective Action." *The Information Society*, vol. 32, no. 4, 2016, pp. 241–255., doi:10.1080/01972243.2016.1177761.
- [13]. Lai, Chih-Hui. "Understanding the Evolution of Bona Fide Mixed-Mode Groups: An Example of Meetup Groups." *First Monday*, firstmonday.org/ojs/index.php/fm/article/view/4681/3810.
- [14]. Mccully, Wyl, et al. "Online and Offline Interactions in Online Communities." *Proceedings of the 7th International Symposium on Wikis and Open Collaboration - WikiSym '11*, 2011, doi:10.1145/2038558.2038566.
- [15]. McPherson, Miller, et al. "Social Isolation in America: Changes in Core Discussion Networks over Two Decades." *American Sociological Review*, vol. 71, no. 3, 2006, pp. 353–375. *JSTOR*, JSTOR, www.jstor.org/stable/30038995.
- [16]. "Meetup (Website)." *Wikipedia*, Wikimedia Foundation, 18 Apr. 2018, en.wikipedia.org/wiki/Meetup_(website).
- [17]. Norris, Pippa. "The Bridging and Bonding Role of Online Communities." *Harvard International Journal of Press/Politics*, vol. 7, no. 3, 2002, pp. 3–13., doi:10.1177/1081180x0200700301.
- [18]. Pramanik, Soumajit, et al. "Can I Foresee the Success of My Meetup Group?" *2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 2016, doi:10.1109/asonam.2016.7752260.
- [19]. Rice, Ronald E., et al. "Social Consequences of Internet Use." *The MIT Press*, The MIT Press, mitpress.mit.edu/books/social-consequences-internet-use.
- [20]. "The Role of Online and Offline Features in Sustaining Virtual Communities: an Empirical Study." *Emeraldinsight*, www.emeraldinsight.com/doi/pdfplus/10.1108/10662240710736997.

- [21]. Sander, Thomas H. “E-Associations? Using Technology to Connect Citizens: The Case of Meetup.com.” sites.hks.harvard.edu/saguaro/pdfs/e-associations.pdf.
- [22]. “Serverless Boston @ Google Meetup Attendees.” *Meetup*, www.meetup.com/Serverless-Boston/photos/28216415/#465926291.
- [23]. Sessions, Lauren F. “How Offline Gatherings Affect Online Communities.” *Information, Communication & Society*, vol. 13, no. 3, 2010, pp. 375–395., doi:10.1080/13691180903468954.
- [24]. “Speakers at Serverless Boston Meetup @ Google.” *Meetup*, www.meetup.com/Serverless-Boston/photos/28216415/#465926288.
- [25]. Spencer, Stephan. “Meetup.com: A Secret Weapon for Your Career and Personal Brand.” *The Huffington Post*, TheHuffingtonPost.com, 25 June 2014, www.huffingtonpost.com/stephan-spencer/using-meetupcom-as-a-bran_b_4767898.html.
- [26]. Toledano, Margalit, and Alexander Maplesden. “Facilitating Community Networks: Public Relations Skills and Non-Professional Organizers.” *Public Relations Review*, vol. 42, no. 4, 2016, pp. 713–722., doi:10.1016/j.pubrev.2016.04.005.
- [27]. “Using Meetup for Business Purposes.” *Cleverism*, 6 Sept. 2016, www.cleverism.com/using-meetup-business-purposes/.
- [28]. Vritika. “Difference between Training and Workshop.” *Difference between Training and Workshop | Training vs Workshop*, 10 Aug. 2015, www.differencebetween.info/difference-between-training-and-workshop.
- [29]. Vynck, Gerrit De. “WeWork Buys Meetup to Bring People Together Outside of Work.” *Bloomberg.com*, Bloomberg, 28 Nov. 2017, www.bloomberg.com/news/articles/2017-11-28/wework-to-buy-meetup-a-social-network-to-connect-hobbyists.

- [30]. "What is the difference between Conference, Seminar, Symposium & Workshop?" ResearchGate.Net, 2014, Accessed 23rd April 2018, www.researchgate.net/post/What_is_the_difference_between_Conference_Seminar_Symposium_Workshop.
- [31]. "What Meetups Tell Us About America." *Priceonomics*, priceonomics.com/what-meetups-tell-us-about-america/.
- [32]. Xie, and Bo. "The Mutual Shaping of Online and Offline Social Relationships." *Information Research: An International Electronic Journal*, Thomas D. Wilson. 9 Broomfield Road, Broomhill, Sheffield, S10 2SE, UK. Web Site: [Http://Informationr.net/Ir](http://Informationr.net/Ir), 31 Aug. 2008, eric.ed.gov/?id=EJ837272.

APPENDIX A: Survey Questions

1. Background and General Demographics

- a. What is your gender?
 - Male
 - Female
 - Non-binary / third gender
 - Prefer not to say
 - Other: _____

- b. What is your primary major?
 - Actuarial Mathematics
 - Aerospace Engineering
 - Architectural Engineering
 - Biochemistry
 - Bioinformatics & Computational Biology
 - Biology & Biotechnology
 - Biomedical Engineering
 - Chemical Engineering
 - Chemistry
 - Civil Engineering
 - Computer Science
 - Electrical & Computer Engineering
 - Environmental Engineering
 - Industrial Engineering
 - Interactive Media & Game Development
 - Management Engineering
 - Management Information Systems
 - Mathematical Sciences
 - Mechanical Engineering
 - Physics
 - Robotics Engineering
 - Systems Engineering
 - Undecided
 - Not listed

c. If your primary major is not listed above, please write it below.

d. What is your secondary major (if any)?

- Actuarial Mathematics
- Aerospace Engineering
- Architectural Engineering
- Biochemistry
- Bioinformatics & Computational Biology
- Biology & Biotechnology
- Biomedical Engineering
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science
- Electrical & Computer Engineering
- Environmental Engineering
- Industrial Engineering
- Interactive Media & Game Development
- Management Engineering
- Management Information Systems
- Mathematical Sciences
- Mechanical Engineering
- Physics
- Robotics Engineering
- Systems Engineering
- Undecided
- Not listed

e. If your secondary major is not listed above (if any), please write it below.

f. What is your class standing?

- Freshman
- Sophomore
- Junior
- Senior

- Graduate Student
- Other: _____

2. Meetups: Definitions and Prior Experiences

- a. Please list the names of any meetups you have attended.
-
- b. How have you discovered meetups in the past? (Check all that apply.)
- Faculty recommendation
 - University email lists
 - Other students or peers
 - On-campus Clubs
 - Social media
 - Meetup.com
 - From previous academic institutions
 - Other: _____
- c. What types of meetups have you attended? (Check all that apply.)
- Primarily social gatherings
 - Technical presentations
 - Tutorials (workshops where you follow-along)
 - Other: _____
- d. Have you attended meetups related to your academic/fields of interest?
- Yes
 - No
- e. Who do you usually attend meetups with? (Check all that apply.)
- Solo
 - With fellow students at WPI
 - With friends (outside WPI)
 - Other: _____
- f. At what locations have you attended meetups? (Check all that apply.)
- Boston, MA
 - Worcester, MA

○ Other: _____

g. What type of transportation have you used to get to meetups in the past?
(Check all that apply.)

- Bus
- Train
- Car
- Other: _____

h. How much do you spend on transportation to a single meetup? (Check all that apply.)

- Nothing
- \$1-5
- \$6-10
- \$11-20
- \$21+

i. At what time of the year have you attended meetups in the past? (Check all that apply.)

- During Term Breaks
- On a Weekday, during the school year, before 5pm
- On a Weekday, during the school year, after 5pm
- On a Weekend, during the school year

j. Have you ever intended to go to a meetup, but finally decided not to attend?
If so, what are some of the factors that led to your decision?

k. Have you recommended any meetups to fellow students or friends?

- Yes
- No

l. Describe one or more positive experiences you've had during a meetup:

m. Describe one or more negative experiences you've had during a meetup:

3. Meetups: Your Interests

- a. Have you ever attended an off-campus extra-curricular meetup similar to the definition above?
- Yes
 - No
- b. Are you interested in attending meetups held in Boston?
- Yes
 - No
- c. What types of meetups most interest you? (Check all that apply)
- Primarily social gatherings
 - Technical presentations
 - Tutorials (workshops where you follow-along)
 - Other: _____
- d. Do you prefer to go to meetups solo or with a group? (Check all that apply)
- Solo
 - With a group from my school
 - With friends outside school
 - Other: _____
- e. Attending extra-curricular off-campus meetups helps students learn about topics and technologies that will advance their careers.
- Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
- f. Attending extra-curricular off-campus meetups helps students find internship and/or job opportunities.
- Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
- g. Attending extra-curricular off-campus meetups enables students to meet students from other schools.
- Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
- h. Attending extra-curricular off-campus meetups enables students to meet professionals or researchers in their field of interest.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- i. Attending extra-curricular off-campus meetups is worth the time and effort it takes to attend.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- j. I am interested in (or already am) regularly attending meetups in Boston.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- k. Finding transportation is a barrier to attending meetups in Boston

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- l. I will only go to a meetup in Boston if the meetup organizers provide food

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- m. I will only go to a meetup in Boston if it occurs during term breaks or on the weekend (i.e. not during regular class days).

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

- n. If WPI were to provide a way for students to better connect with meetups in Boston, what would it look like?

- o. Describe any resources, applications, or other changes that would make attending meetups easier and more valuable for you:

APPENDIX B: Interview Questions

B.1 QUESTIONS FOR BRET MCGOWEN

1. Background:

- a. Is this your first meetup?
- b. What is your occupation?
- c. How long have you been going to meetups?
- d. When you were younger, were you encouraged to go to events similar to meetups?
- e. How and why did you become a speaker?
- f. Is this your first time being a speaker?

2. Personal experience:

- a. What made you choose this meetup?
- b. Did you go to this meetup alone? If not, did you go with friends?
- c. Did the result of the meetup meet your initial expectations? If not, why?
- d. How did you get to this meetup?
- e. How did you learn about this meetup?
- f. Is this your usual crowd size?
- g. Is this your usual interest area?

B.2 QUESTIONS FOR STUDENT INTERVIEWEES

1. Background:

- a. What meetup(s) have you attended?
- b. How did you get there?
- c. Who did you go with?
- d. How did you learn about it?
- e. How much did you pay?

2. Personal experience:

- a. Do you think the meetups that you attended were worth it?
- b. What made you dislike the meetup(s) you attended?

- c. Are there any meetups you wish you could attend but not able to?
- d. Are there any meetups you decide to not go last minute?

3. General opinion:

- a. Do you think meetups are worth it?
- b. Do you think attending meetups in Boston are worth it?

4. Recommendations:

- a. If WPI were to provide a way for students to better connect with meetups in Boston, what would it look like?
- b. Describe any resources, applications, or other changes that would make attending meetups easier and more valuable for you:
- c. What type of transportation would be beneficial to WPI students who want to attend meetups?
- d. Do you think students would benefit from weekly email notifications regarding the meetups being held? Why or why not?

B.3 QUESTIONS FOR GIDEON WULFSOHN

1. Boston Machine Learning:

- a. Why did you create the Boston Machine Learning Meetup?
- b. When did you create the Boston ML meetup?
- c. How did you create the Boston ML meetup?
- d. Any particular reasons that you choose to locate Boston ML meetup in Boston?
- e. How did you gather interest and trust for Boston ML?
- f. Anything you wished you knew/had done before founding Boston ML?
- g. Did your school provide help in anyway?
- h. How did you balance school and Boston ML?
- i. Do you attend any other meetups outside of Boston ML?

2. Background:

- a. How did you first know about meetups?
- b. Before you started Boston ML, did you attend any meetups?
 - i. What meetup(s) have you attended?
 - ii. How did you get there?

- iii. Who did you go with?
- iv. How did you learn about it?
- v. How much did you pay?
- c. Did the university you attended encourage meetups in anyway?

3. Personal experience:

- a. Do you think the meetups that you attended were worth it? Why?
- b. What is your main take-away from a meet-up?
- c. What made you dislike the meetup(s) you attended?
- d. Are there any meetups you wish you could attend but not able to?
- e. Are there any meetups you decide to not go last minute?
- f. Are you still going to meetups?

4. General opinion:

- a. Do you think meetups are worth it? Why?
- b. Do you think attending meetups in Boston are worth it? Why?

5. Opinion:

- a. Based on our survey data, a lot of people want incentives, specifically job opportunities. Do you think meetups are a gateway to these opportunities?
- b. Did Boston ML help you with your current job in any way?
- c. Describe any resources, applications, or other changes that would make attending meetups easier and more valuable for students

B.4 QUESTIONS FOR DIRECTOR OF STUDENT ACTIVITIES

1. Transportation:

- a. What is the general process of organizing transportation?
- b. Is it better to get a bus, or have the students carpool and then reimbursed for gas?

2. Hosting:

- a. Is it possible to host a meetup on campus?
- b. What is the approval process for creating a club?

- c. If we get a speaker to come, do they have to go through a process before being allowed on campus to speak?
- d. What are the options for advertisement of an event on campus?