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Redesign of the Bridgewater State University Website

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Redesign of the Bridgewater State University Website

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Submitted in Partial Completion of the
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1 Abstract

In this thesis, I studied human-computer interaction (HCI), analyzed the usability of the Bridgewater State University website, and redesigned it guided by HCI principles and user experiments. A goal of the project is to apply suggestions from HCI research to the usability analysis of an existing website. I redesigned the website based on this analysis and by conducting user experiments compare the redesign against the existing BSU website. With this project, I redesigned a website that demonstrably improves users' success at information seeking and navigation while reducing frustration and hassle compared to the current Bridgewater State University (BSU) website. This project is available online at https://github.com/jordanrossetti/BSU_redesign.

2 Introduction

HCI is a key factor to consider when building any website. HCI is the study, planning, and design of what happens when a user and a computer work together; its main goals are to determine how people use technology, develop techniques that create suitable systems, and to achieve efficient and effective user interaction (Danino, 2001). Danino (2001) states that in HCI, a "computer" refers to almost any technology; since the topic here is website design, the website itself can be considered "the computer." The author also notes the importance of HCI in website development, since a large portion of website code is in the interface that visitors encounter. Thus, our redesign aims to enable users to perform any task on the website easily without encountering difficulties such as poor search, small fonts, and so on.

User interface design (UI) and user experience design (UX) are both similar to HCI, but are not exactly the same. In this case, UI refers to the look and feel and presentation of the website, whereas UX refers to improving customer satisfaction by making the website easier to use (Lamprecht, 2016). Moreno (2014) explains, "something that looks great but is difficult to use is exemplary of great UI and poor UX, while something very usable that looks terrible is exemplary of great UX and poor UI." Bringing both of these roles together will be key in redesigning the BSU website.

Another goal for this project is to incorporate responsive design; this will make the website easily usable on desktops, smart phones, and tablets. Also, many people expect web pages to load as quickly on their smart phone as they do on a desktop or laptop computer. Nearly 60% of mobile users surveyed would expect a web page to load in three seconds or less; 74% say that they would leave a page if it took more than five seconds to load (Everts, 2013).

I conducted user studies with 17 participants. The main goal was to receive useful feedback regarding the redesign, so that it could be adjusted according to the students' needs and wants.

3   Preliminary Research

I conducted research on HCI, UI, and UX by reading online articles as well as two textbooks; *Don't Make Me Think* (2014) by Steve Krug, and *Designing with the Mind in Mind* (2010) by Jeff Johnson. I also analyzed various university websites including Johns Hopkins University, which won a Webby award for "People's Choice School/University" (2016). I also considered other websites such as Facebook and Twitter. I analyzed the BSU website to improve based upon the reading and researching.

3.1   General Design Principles

Don't Make Me Think (2014) provided most of the information I needed before analyzing trends in other websites. Krug's definition of usability is that

> *"a person of average ability and experience can figure out how to use the thing to accomplish something without it being more trouble than it's worth."*

Concerning navigation, Krug says,

> *"…another needless source of question marks over people's heads is links and buttons that aren't obviously clickable. As a user, I should never have to devote a millisecond of thought to whether things are clickable – or not. The fact that the people who built the site didn't care enough to make things obvious – and easy – can erode our confidence in the site and the organization behind it."*

So, buttons and other links on a website should be made clearly visible and should all look very similar so users do not become confused; this will help make their experience faster and easier.

Krug notes a short list of main things users should not have to think hard about, these being:

> *Where am I?*
> *Where should I begin?*
> *Where did they put ___?*
> *What are the most important things on this page?*
> *Why did they call it that?*
> *Is that an ad or part of the site?*

So, everything on a page should be clear and organized. Currently, even as a student who has been at this school for about three years, even I have trouble finding what I need sometimes.

Krug also states,

> *"Using a site that doesn't make us think about unimportant things feels effortless, whereas puzzling over things that don't matter to us tends to sap our energy and enthusiasm – and time."*

A website should not be a dull, boring experience to the user, but should not also cause sensory overload. It is important to find a good balance in order to organize all of the information in a clean yet interesting manner.

Creating an interesting design while not going too overboard is mentioned, as well.

"Web conventions make life easier for users… Designers are often reluctant to take advantage of them. If you're going to innovate, you have to understand the value of what you're replacing… The rule of thumb is that you can – and should – be as creative and innovative as you want, and add as much aesthetic appeal as you can, as long as you make sure it's still usable."

It is definitely easy for me to get carried away with a bunch of ideas in my head that would make the website "prettier". However, as Krug notes, it is also to consider conventions – meaning, keeping the same "look and feel" that college websites usually have, to an extent. Design conventions do change over the years and it is important to make sure the look of the website isn't outdated. The Johns Hopkins website is not necessarily conventional, but what their designer has innovated is still simple to follow: scroll down for a continuous flow of information about the school, with navigation on the side. It will be important for the project to keep in mind this idea; if we're changing it so much that it doesn't look as "standard" as it does now, we need to make sure it doesn't throw users off completely, as if they've gone to the wrong website.

A visual hierarchy is highly important to consider; as Krug states,

"Each page should have a clear visual hierarchy… The more important something is, the more prominent it is… Things that are related logically are related visually… Things are "nested" visually to show what's part of what… A good visual hierarchy saves us work by preprocessing the page for us, organizing and prioritizing its contents in a way that we can grasp almost instantly."

Information should be organized accordingly on each page; as of right now, the current website has information all over the place, and it can be hard to decipher what is the most "important" place to start on each page. The multiple stylings of links are a good example.

Krug discusses the idea of information being easier on the eyes further:

"Eye-tracking studies of Web page scanning suggest that users decide very quickly in their initial glances which parts of the page are likely to have useful information and then rarely look at the other parts – almost as though they weren't there. …Since a large part of what people are doing on the Web is looking for the next thing to click, it's important to make it easy to tell what's clickable."

The same principle applies here as I discussed earlier. More organized, more noticeable links should be better for users than what the BSU website currently has going on.

The idea of navigation constantly pops up throughout the book.

"Navigation has some… easily overlooked functions: it tells us what's here… it tells us how to use the site… it gives us confidence in the people who built it… Clear, well-thought-out navigation is one of the best opportunities a site has to create a good impression."

This helps solidify that navigation is one of the most crucial parts of a website. Krug describes conventions with diagrams, which I will also reference and take into consideration for the project. This includes taking persistent/global navigation into consideration.
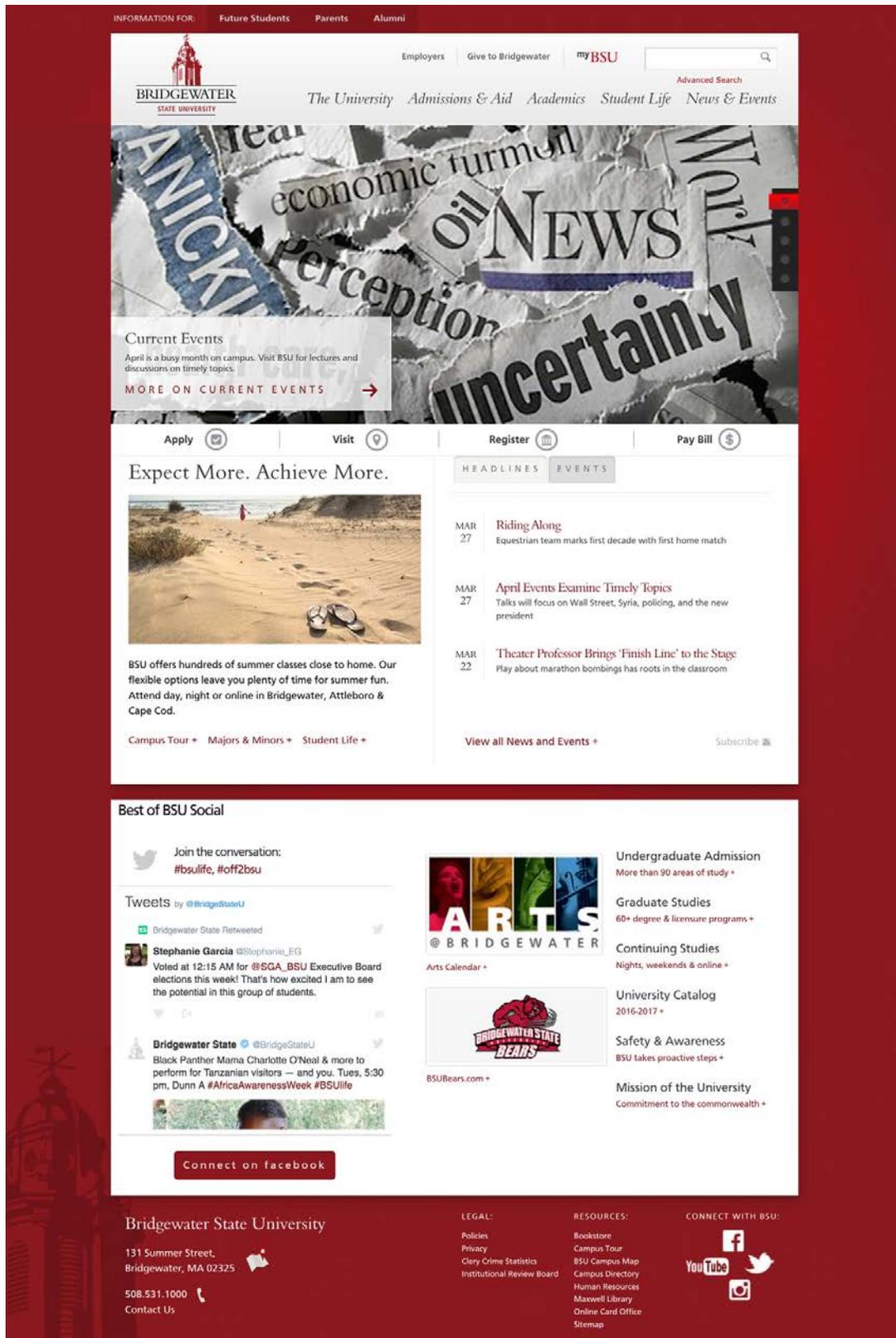
Figure 3.1 Current home page of www.bridgew.edu (as of March 28, 2017)

3.2   Ideas from Readings

Just by looking at BSU's home page (Figure 3.1 and Figure 3.2), there are many links that begin the journey through the website. Some that are grouped together are uniform, while others do not look similar at all: for example, the fixed links on the top banner look like clickable buttons, whereas equally if not more important links at the very top of the webpage ("The University", "Admissions and Aid", etc.) are not fixed and do not really look like links at first. These could be improved, perhaps as a side navigation menu, and more pronounced to users. The same idea goes for all of the other disorganized links on the page.

Figure 3.2 Example of current BSU website subpage: Commuter Life (as of March 28, 2017)

The portal to links like email and Blackboard are hugely important – yet there is no clear direct link on the home page. The "myBSU" link is another annoying step for students and employees to login 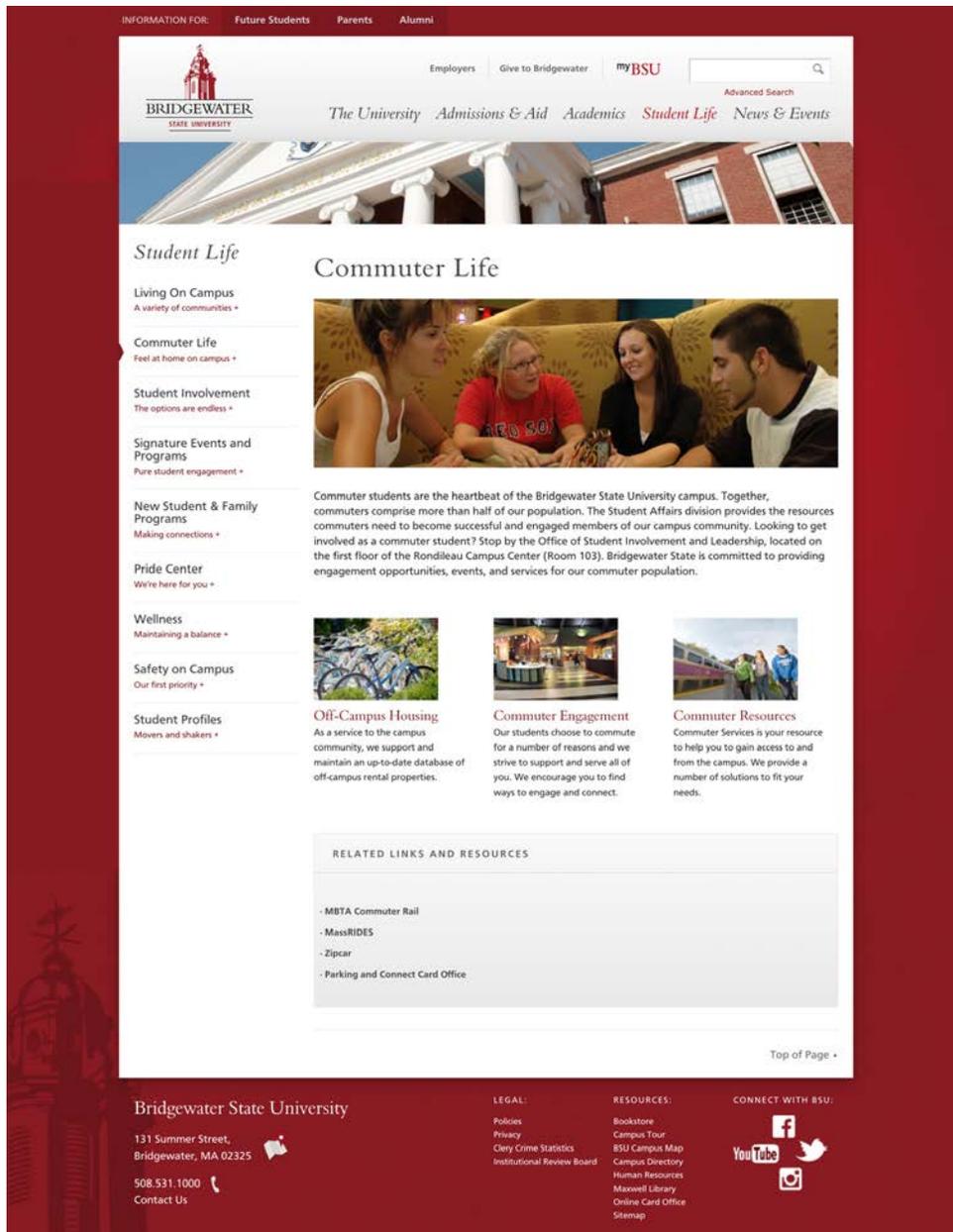and loads a boring page. I would absolutely create links for important things right there on the home page. Another thing that frustrates me as a student is going through endless pages just to check my email.

I explored the Webby awards for 2016, which, according to the website, is

> *"an award for excellence on the Internet presented annually by The International Academy of Digital Arts and Sciences."*

The People's Voice award for Best School/University Website went to Johns Hopkins University (www.jhu.edu), so I explored their website. It is fun, detailed, and engaging, but still easy to navigate (by sidebar navigation). Scrolling down makes important pieces of information for students and prospective students appear, and it feels more like an interactive slideshow than a website. This could be a way to approach the redesign.

3.3   Analyzing Trends

I looked at various websites in order to pick out elements that are considered "good" for UI and UX based on the readings. The most notable university website I focused on was that of Johns Hopkins University. Notable aspects to put into practice include:

- Pop-out navigation bar for website navigation
- Memorable look; the home page tells a story of the university to give prospective students and parents a look at the highlights of the school
- The videos at the very top of the home page are captivating and keep users interested
- Menu button stays at the top right corner of the page, but isn't obnoxious or blocking content
- Important links are shown in order to reduce clutter (in contrast to BSU's website, which contains many differently styled links all over the place)
- Subpages have similar navigation as menu and show the user where they are in the website; this also provides easier navigation among subpages

I also looked at two local schools with similar color schemes, which I thought could help me envision a redesigned BSU website as I analyzed how they work. One of these schools was Worcester Polytechnic Institute (www.wpi.edu):

- Floating navigation bar at the top stays as you scroll down the page for easy access to the menu
- Large image with caption at the top of the home page draws users in
- Home page "tells a story" and gives facts, figures, and other important information

The other school website I looked at was Harvard University (www.harvard.edu):

- Floating navigation at the top stays as the user scrolls down
- Scrolling down the home page, there are various color blocks associated with different categories of information to help users differentiate where they are on the page (Events, Twitter, News, etc.)

Popular social media websites that frequently update their UI are a good resource to consider as well. Navigation isn't identical between all of them, but they generally have the theme of links staying consistent and clean throughout their website. On Facebook (www.facebook.com), the navigation bar stays at the top, and the left sidebar is consistent for even further navigation. Twitter (www.twitter.com) also has a consistent navigation bar at the top, as does www.tumblr.com and www.linkedin.com. In summary, having the most important links being consistent and always accessible is a way to provide navigation.

4   Analysis of the Current BSU Website

After the preliminary research, I looked through nearly every page on the BSU (www.bridgew.edu) domain to understand what exactly can and should be fixed. I took notes of positive aspects that achieve a clean, up-to-date website in terms of UI and UX, as well as negative aspects that take away from these goals. Figure 4.1 and Figure 4.2 display the sitemap that I traversed.

Figure 4.1 Top half of Bridgewater State University sitemap
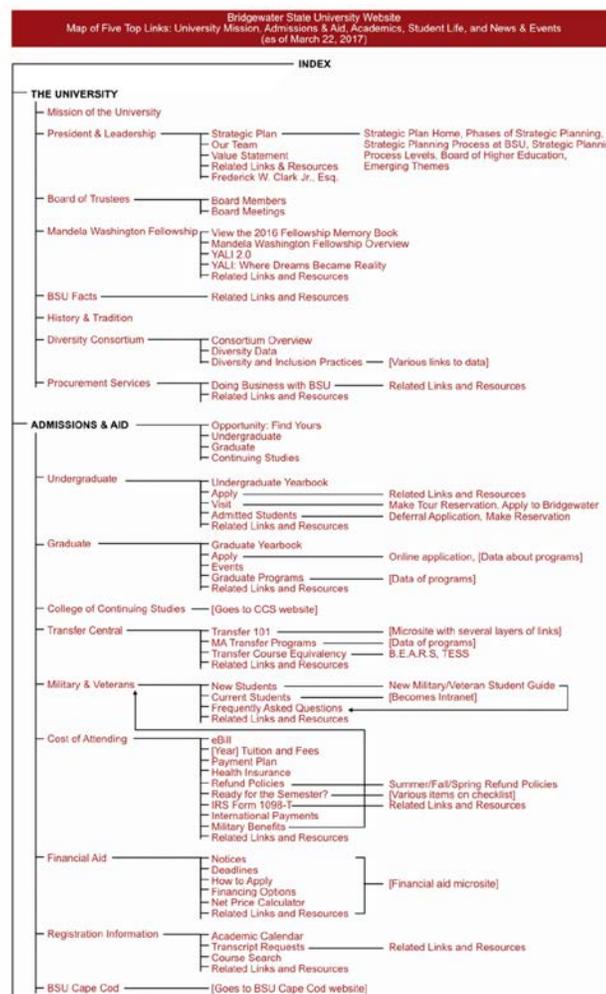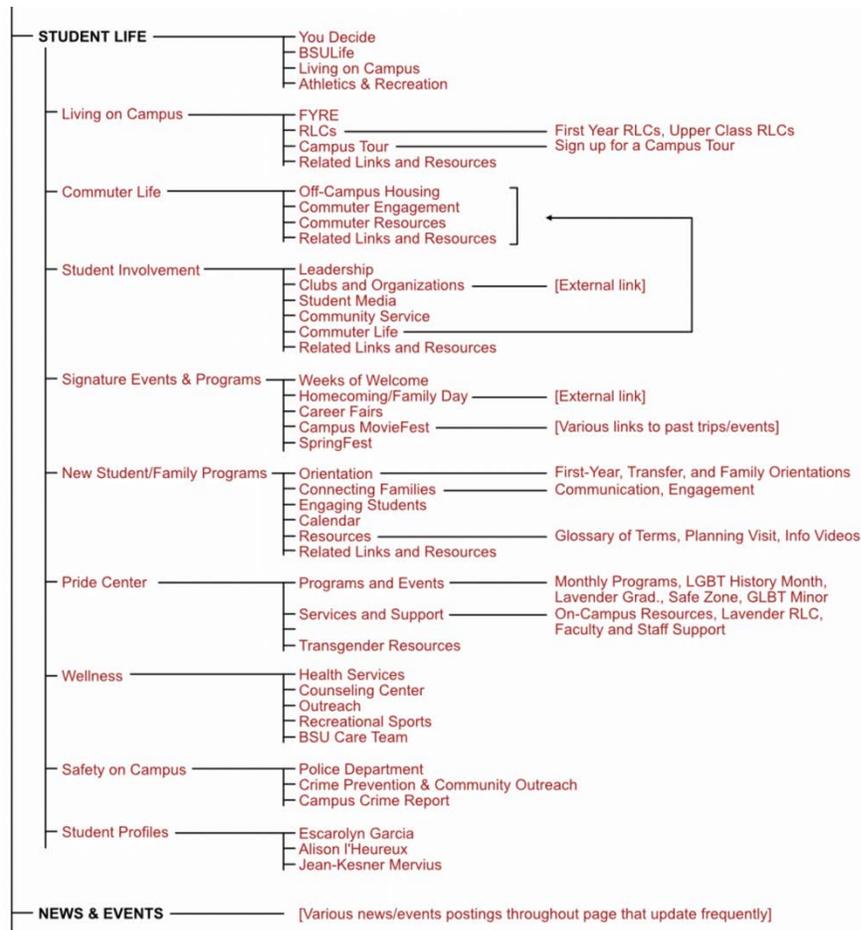
Figure 4.2 Bottom half of Bridgewater State University Sitemap

4.1 Positive Aspects

- Responsive for all screens; can be comfortably viewed on desktop, phone, tablet.
- The carousel feature on the home page is a trendy way of displaying information and drawing users in.
- The header is nearly consistent throughout the website.
- The footer is relatively organized while containing a number of important links.
- There are a few different unique and memorable features, such as the History and Tradition slider as well as the Opportunity: Find Yours slideshow.
- Minus some exceptions listed in the "Negatives" section next, most pages have a consistent navigation column on the left; however, the links themselves do change.

4.2 Negative Aspects

- The responsive menu on mobile devices is completely different than desktop navigation. It is easier to find information more quickly this way, and would be useful on the desktop site as well.
- The home page has several differently styled links everywhere, which is confusing.

- The "Information for:" navigation bar at the top pushes information down the page and cannot be easily closed.
- The home page has information too close together like poorly fitting puzzle pieces; this would make appending/changing content a headache in the future.
- For the subpages of the top five links (The University, Admissions & Aid, Academics, Student Life, News & Events), their links on the left side have red subtext with a plus sign; it looks like more information could pop up when clicking said plus sign, but this doesn't occur.
- Some information has little pop-up windows when clicked; some will open a new page or new tab; this is not consistent (Found at Mandela Fellowship, ICEI, and all of the links related to the Pride Center).
- Some of these pop-ups do not have "X" buttons to close them, which can confuse users (ex. the Professor Spotlight on the Academics page).
- Constantly "digging deeper" to find what I am looking for is irritating and causes a lot of usage of the back button in my browser.
- Randomly, there will be links to different websites and microsites, which may be disorienting when users land on one
- There is a very small "back to top" button hiding in the bottom right corner of some pages; this should be visible while a user scrolls and should be more noticeable.
- Some images will have links to full sizes, which users may accidentally click on and get confused.
- Clicking on some subpages causes the left sidebar navigation to disappear; this is not consistent and causes confusion (found at: Who we Are, Teaching and Learning, Research, Scholarship, and Creative Endeavors, all under Faculty Life and Development; Living on Campus under Student Life).
- Some images are unrelated to their page; for example, the Health Services page doesn't show its correct location.
- The "myBSU" links feel redundant; there is a link to the student portal, and also the Intranet and password reset, which are contained on the main page of the student portal anyway.
- Some arguably important things are hard to find and should be more prominent (such as the school's calendar).
- A lot of the photography is not recent; they should be up-to-date to give visitors an accurate idea of the school (ex. the Springfest photo from 2013).
- News and Events page is confusing; a lot of text, nothing really "stands out"
- The little red plus signs under some links can be confusing, as if there is more information that will pop up, when it's just more information about the link.
- Under admissions and aid, there's only a link to the Cape Cod campus and not the Attleboro campus. Either both or neither should be listed.
- Board of trustees links open in new tabs.
- Undergraduate lookbook links to something that's just a blank page, yet it has a big feature on the undergraduate page. Same on graduate page.
- Graduate page has a little chat button in the bottom right that is easy to miss (it blends in), and is not on any other page.
- Not every link has that little red plus sign underneath; why add it at all.

- Financial aid links; some go to a microsite.
- Outdated information (such as 2013 Springfest photo under events, "Current Students" link under military page).
- Faculty life and development's banner image is linked to a page about technology in student life.
- Centers and institutes page only has a link to centers. Nothing about institutes.
- Weeks of welcome has outdated schedule.
- Contact info should directly be on the page, not just through the footer.
- Student life departments has incorrect formatting; stretches out of container.

4.3 Ideas to Improve BSU's Website

Based on all of this information from preliminary research, I settled on the following ideas in order to improve BSU's website:

- Pop-out navigation similar to www.jhu.edu (note: this style navigation is used for the mobile version of Bridgewater's current website, but not the desktop version, which is inconsistent)
- Consistent navigation bar at the top.
- Due to not having access to large videos to captivate users, a widescreen carousel feature could be used in place to show nice photography of the campus and highlight news and events.
- Scrolling down the page can "tell a story" about the school.
- Different blocks of information to help user differentiate what they're seeing, rather than BSU's ill-fitting puzzle-pieces idea.
- Inner pages can have the navigation bar on the left side like jhu.edu and facebook.com, as used in many websites.

5   Creation of the Redesign

Citing the usability analysis of the current BSU website as well as the inspiration from other university websites, wireframes were drawn in the Affinity Design (2014) vector drawing program and the Affinity Photo (2015) program for Mac to plan the layout of the redesign. Mockups were created for the home page, a sample subpage (for example, the Commuter Life page), and the navigation menu. The figures in this section display screenshots of the wireframes, as well as the coded website.

5.1   The Home Page

On the home page (Figure 5.1 and Figure 5.2), I used inspiration from Johns Hopkins University in order to make the page more creative and memorable. I also used design ideas from Harvard and WPI's websites; their information was typically widescreen, and each topic took up a well-defined "block" on the page. This way of organizing information makes it cleaner and well defined. I also incorporated more colors to make it brighter, and to introduce "color coding," which I will explain in the *Subsequent Pages* section.
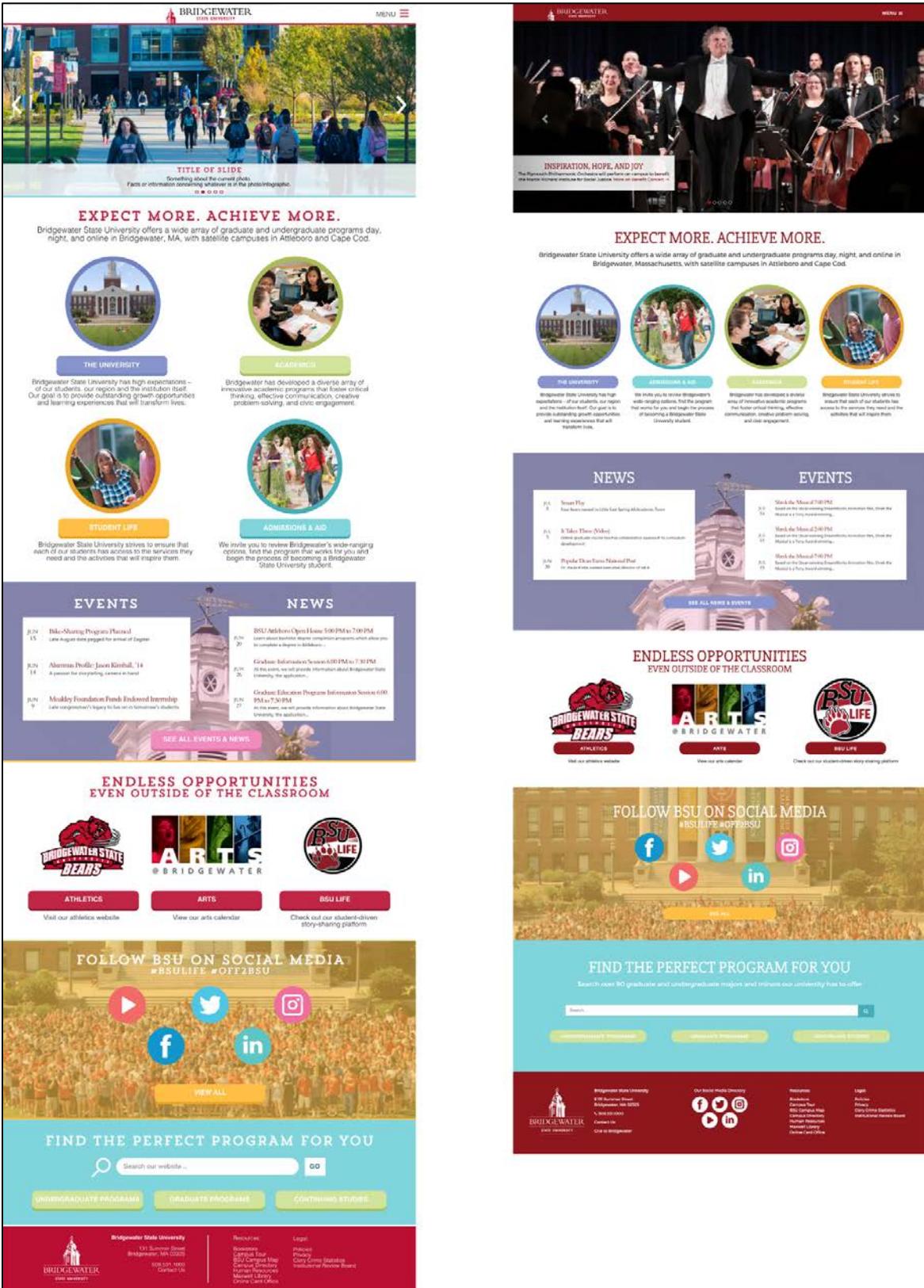
Figure 5.1 Redesigned home page: wireframe (left) vs. finished product (right)

I used the same rotating images at the top that BSU's current website has on its home page; however, I made them widescreen, so that they are not squeezed into a box. I would have preferred to put videography here with BSU's logo to the top, but did not have the resources to do so. The goal of this home page, like other universities websites, is to give a brief overview of the school and "tell a story." While I included many pieces of information that are on the current home page, I also took some away; this was a challenge considering how many links there are. I also highlighted things that are prevalent on other school websites, such as the social media links (they aren't just on the footer now) as well as a course search at the bottom.
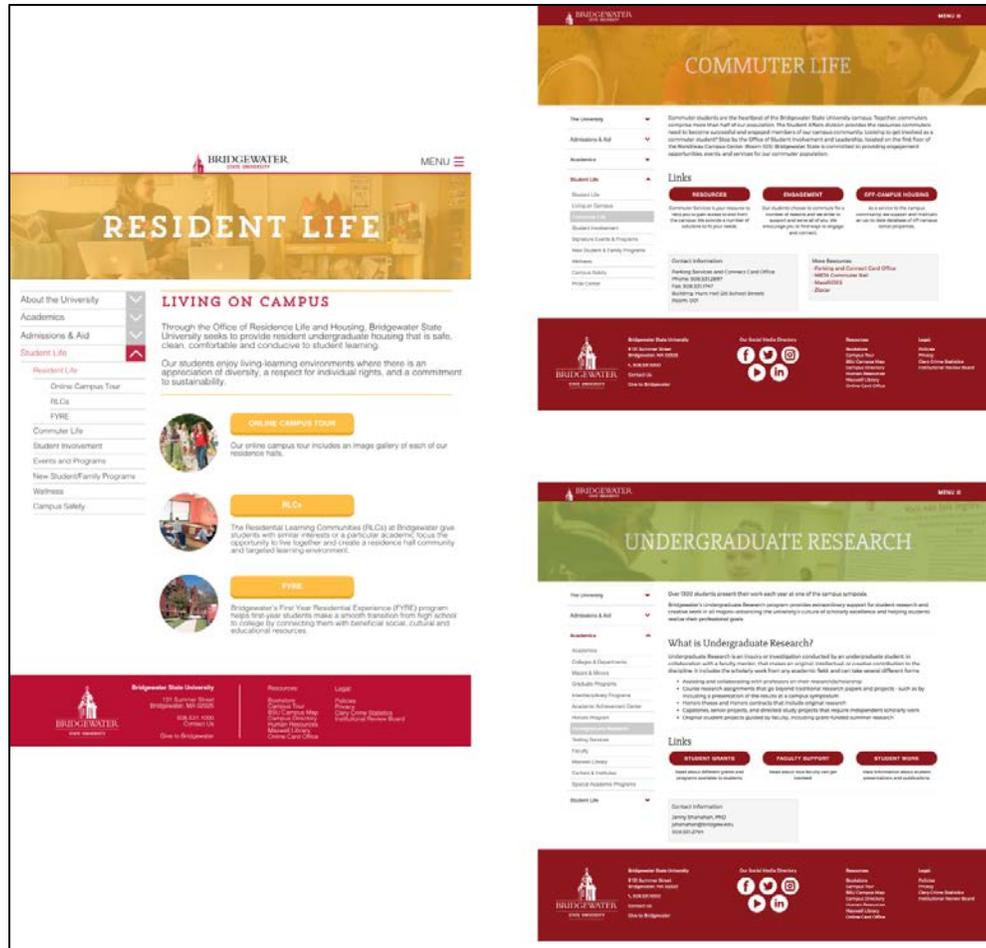
Figure 5.2 Redesigned subpages: wireframe (left) vs. examples of finished products (right)

5.2   The Pop-Out Menu

Completely changing the navigation of the website was a huge undertaking, as there are very many links and pages within the main website. I modeled this menu after Johns Hopkins University's menu. The idea is that it is hidden, but always available and consistent for users of the website. On the top navigation bar, there will always be a button that says "MENU" (Figure 5.3). Clicking this button would make my menu "pop-out" onto the screen, and darken the rest of the screen so that there is a focus on it. Inside of this pop-out menu

would be a search bar and multiple important links, as well as drop-downs for the links that are currently the "top five" on BSU's website. There would certainly be a hierarchy of the links as well, so that they do not look cluttered and confusing.

Figure 5.3 Redesigned navigation (pop-out menu): wireframe (left) vs. finished product (right)

5.3   Subsequent Pages

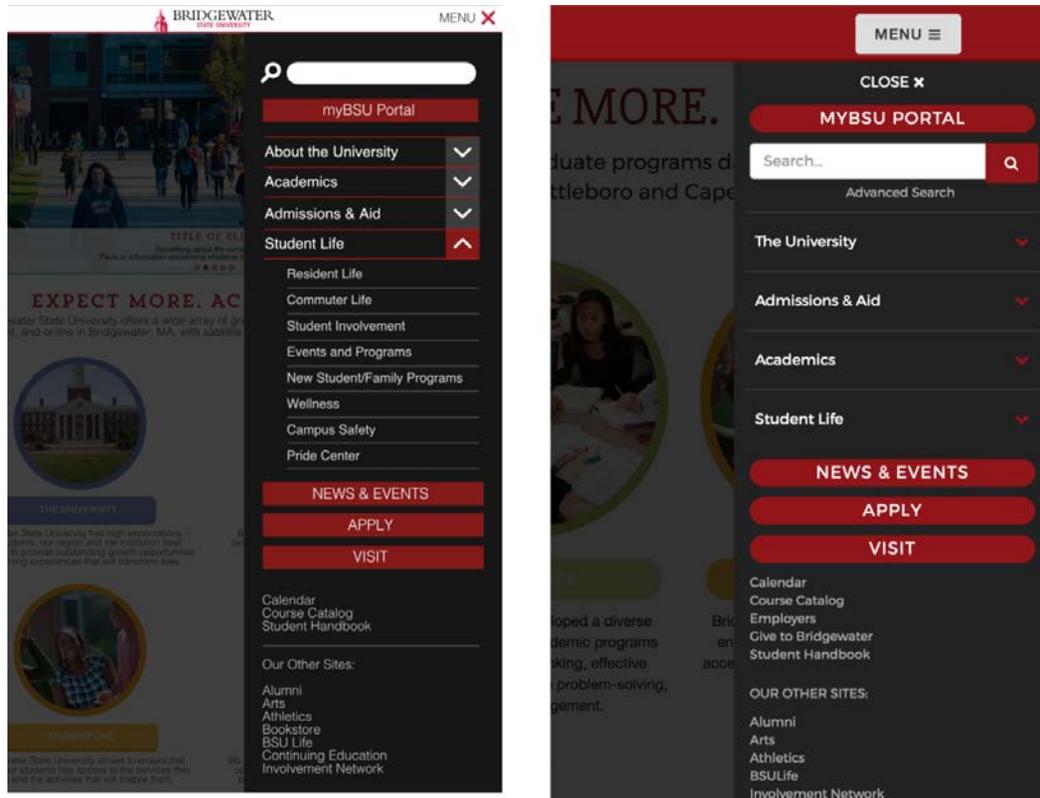Currently, the subsequent pages from the "top five" links do share a general theme, but all have individual quirks, which can confuse users. I wanted them to have the same exact template, so that users don't get confused while moving from one to the next. Aside from "News & Events," every other link in the top five links has a color associated with it, so that when navigating throughout the different pages in the website, users can know what part they're in. This would carry through from the rounded borders and buttons that are underneath the sliding images on the home page.

Currently, when on a subpage, the links to the left side are only links that would fall under the category you're in. If you wish to go from Financial Aid to Student Life, for example, you'd have to go to a link at the top that says Student Life, but not all users will know that. Therefore, a smaller copy of the dropdown links from the pop-out menu is available on the left-hand side. This was modeled after Facebook's idea of it. For each page, the section it's in as well as the name of the page itself is highlighted on this menu.

At the top of each page is the navigation bar, which carries throughout the entire website (The pop-out menu button is included in this bar). Each page would have its description at the top, any other information clearly defined by a larger title, links (which are all rounded rectangle buttons), perhaps images, and then contact information at the bottom. Every single page in the website also has an identical footer, and a "go to top" button that is more noticeable and not stuck hidden at the bottom of every page.

5.4 Building the Website

Using the wireframes as a guide, the coding part of the project took place. The website was coded using web languages HTML, CSS, and JavaScript within the Atom (2014) text editor, using Twitter's Bootstrap framework to aid in formatting. Aside from the framework, the website was coded from nothing to get it as close to the wireframes as possible. I began with the home page, then added in the navigation menu, then created one subpage, and used the subpage template to follow through with the rest of the website. This project focuses on HCI, UI, and UX, so only front-end technologies were implemented; no back-end coding was integrated (for example, getting the search bars to work), but could be integrated in the future.

6 Usability Experiment

The purpose of the study was to determine how members of the campus community feel about the current BSU website, and then determine how they feel about the proposed redesign. The main goal was to receive useful feedback regarding the redesign, so that it could be adjusted according to the students' needs and wants. 17 students agreed to participate.

6.1 Recruitment

While working on the website redesign, I reached out to 28 summer session professors to ask if I may visit their classes to briefly explain the project and pass out information to their students in order to recruit them. 12 responded and allowed me to do so. I also reached out to fellow ATP summer grant students during my progress report presentation as well as by email to ask if they'd like to participate. I handled all communication with the students who expressed interest to create a schedule for the usability experiment.

6.2 Participants

17 participants were recruited for the user experiment. All of them are undergraduate students who attend BSU. 13 participants were seniors, 3 were juniors, and 1 was a sophomore. 11 students had a major in the hard science, while 6 were in a soft science. The mean of their ages was 22; the oldest was 28, while the youngest was 19. As for gender, 10 participants were female while 7 were male.

6.3   Procedures

Each user testing session had a time block of up to one hour, and was held in an empty computer science office. My laptop was the only computer device used (Mid 2014 Macbook Pro with Retina Display), and the websites were viewed using the Chrome. Participants sat directly across from me with my laptop to the side. I first took down their information (name, major, class year, age, gender) and explained the purpose of the survey. I then opened up www.bridgew.edu on my laptop and asked various questions concerning it. Once the participant answered those questions, I would then go to the proposed redesign and ask similar questions regarding it. For each version of the website, participants were free to take as much time as they wanted to browse and click around. I wrote down all responses, to my best ability.

7   User Testing Results

The 17 participants are referenced to as P1 through P17. They were asked the following 11 questions and prompts:

> *[To participant: The goal of this survey is to understand your thoughts and feelings about the current BSU website (www.bridgew.edu). I would also like feedback on the proposed redesign; how appealing it is in general, the navigation, the page layouts, and so on.]*

7.1   Part One – The current BSU website (www.bridgew.edu)

[Bring up the current BSU website (www.bridgew.edu) and begin asking questions.]
1. What do you typically do on the BSU website? What information do you usually seek?

All 17 participants expressed that they use the website to reach external services offered by the school; specifically, this includes Infobear, Blackboard, the Intranet, and their school email. 13 out of the 17 participants specifically mentioned that they mainly use the website to click on the "myBSU" link towards the top. The next most popular response was navigating to the library page, which 5 of the participants expressed. Another notable response was using the academic calendar, which 3 of the participants expressed.

Among these exact answers, an opinion on the process of actually getting to where a participant need to go was already mentioned. P6 stated their frustration by all the navigation required to get to logins; they said, "I think it's kind-of stupid."

2. How do you tend to navigate the BSU website? (Using the different links, the search bar, etc.)

4 of the participants stated that they use any of the given links on the website to get to the information they seek. Every participant said they use the website to click on the "myBSU"/ its following portal links towards the top of the page. 8 participants mentioned that they use the search bar; however, out of those, 3 made a negative comment about the search feature of the website.

P16 stated, "…and I hate it,"
P10 stated, "it doesn't always take me where I need to go," and
P5 stated, "…I can never get to anything I really want."

Another notable comment about the search function of the website came from a participant who doesn't use it at all after using it in the past;

P11 said, "not the search bar… that's garbage."

2 participants mentioned that they never use the search bar; P6 and P12 added that they use Google in order to find pages they want instead. No positive comments about searching were expressed.

P7 noted they "don't mess with the front page;" when asked why, they said they "don't really like it."

3. What do you think about the current BSU website compared to other university websites you've visited?

Mixes of positive and negative comments were made for this question, but negative comments dominated. 3 participants made a statement along the lines of BSU's website being easier for incoming students to use. Only P8 noted that in general, the website is easier to use.

One of the negative comments related to the positive statement that the website is good for incoming students; 2 of the 3 aforementioned participants noted that the website isn't good for current students. As for the design aspect of the website, 11 participants gave examples of aspects they thought weren't as well-done as other university websites.

P5 noted that it "looks decent, but not really usable."
P9 said that "others have a better organized homepage."
P3 referred to BSU's website as a "mystery box."
Other common phrases included the words "confusing," "harder to navigate," and statements related to "not visually appealing."

3 participants expressed that they don't look at other university websites.

4. What aspects do you like about the current BSU website? Give any specific examples.

The aspects participants listed can be summed up into two categories: visuals and content. 2 participants pointed out the social media features. 6 participants said they liked the colors, logo, background, and/or layout. 3 of the participants noted that the website is better for new and incoming students; P17 said it "highlights what we are as a campus." 2 of the participants felt neutral about the BSU website in general;

P7 said "it is what it is" while P13 said "it's just okay."

Although this question asked for positive aspects of the website, 4 participants said they couldn't think of anything they liked, and/or made a negative comment.

P15 specifically stated, "…not really much I love about the website."

5. What improvements do you think could be made with the current BSU website?

Participants had several suggestions upon being asked this question. Most of the responses can be condensed into the idea that the website is hard to navigate, that there are too many links scattered, and that it's too cluttered; 2 participants specifically said it could be more streamlined.

P2 said that in general, "it just looks super inconsistent. It's just weird 'cause it looks like it's old technology."

Participants also made their own specific suggestions for the user interface. 1 participant didn't have comments because they don't use the website. 2 participants specifically pointed out the image carousel on the home page, noting that it can be wider, and the slides should be changed to be more relevant. 2 participants suggested a more prominent "myBSU" button.

P1 specifically mentioned there "could be more color… text could be a different color".

7.2   Part Two – The proposed redesign of the BSU website

6. [Introduce participant to the proposed redesign, explain current level of functionality. Let them play around with it for as long as they'd like (write down any comments they make.)]

The comments made while participants looked through the website on their own were very broad, but this part had the most responses (an average of 8.4 comments per participant, whereas the other questions had around half as many comments). An overwhelming 16 out of the 17 participants made unprompted positive comments while they browsed the proposed redesign; the remaining participant was neutral and expressed that they just wanted the main page to have courses and majors on it.

Overwhelmingly positive comments were made about the user interface in general. Comments include,

"wow, this is really sleek" (P12),
"it's more modern… more accessible… more updated" (P5),
"I like the design better, like, how it flows" (P14),
"I honestly think the layout is much cleaner" (P15),
"this looks so much better" (P1),
"the information isn't as clustered as soon as you visit the page" (P11),
"the front page is more visually appealing" (P9),
"I think it's way nicer than what they have" (P10), and so on.

Several comments were also made about the pop-out menu feature. 3 participants said *"I like this/that"* when opening it.

P11 stated, "your menu bar is awesome."
P16 said, "I like how the links are on the side… yeah, it's like really easy to access the links with the down arrows, too."
P9 said, "menu… makes front page a lot less cluttered."
P10 stated, "I like the sidebar… the menu bar… it's a lot more clear than trying to scroll for what you're looking for."

A suggestion was made regarding making the menu button a bit bigger for visibility.

Participants also pointed out specific design aspects that caught their eye. 5 participants noted they enjoyed the color scheme. Other aspects included the circular photo frames, the buttons, the full-width of the layout, and the large images at the top of the home page.

7. [Ask participant to seek information they mentioned in the very first question with regards to the current BSU website (write down any comments they make.)]

Every participant had the goal of finding the "myBSU" button; most found it with ease, while others didn't find it as instantly, and commented that it should stand out more. As for the other tasks as listed in question 1, participants were able to navigate their ways throughout the website smoothly.

8. How do you feel about the navigation of this proposed redesign?

All 17 participants made positive comments for this question. Comments include,
   "the dropdown menu is less overwhelming" (P13),
   "here, everything makes sense" (P12),
   "if I didn't go to this school, I would come to this website and think 'wow, okay, this is easy to navigate'" (P7),
   "I like this way better than the other one" (P14),
   "it's more student friendly" (P8),
   "it wouldn't feel… hmm… overwhelming to go to this main BSU page all the time" (P11),
   "took me a lot less time to figure out where I needed to go" (P10), and so on.

Other comments used the words *"better", "cleaner", and "I like it."* Like in question 7, a few participants noted that they would like the menu button to be more prominent.

9. What aspects do you like about the proposed redesign of the Bridgewater State University website? Give any specific examples.

All 17 participants had at least two aspects they pointed out for this question. 15 participants made comments concerning the general design, namely the fluidity of the layout, the use of color, the fonts, how the entire width of the page is taken up, the setup, the use of circles as borders for images, and that it looks updated and more modern in general. (6 participants specifically pointed out they enjoy the use of color.) Comments include,
   "it's, like, aesthetically pleasing" (P16),
   "it's not too overwhelming… makes me wanna scroll to the bottom… it's more home page-y" (P13), and
   "…eyes have to work a lot less harder to find what you want" (P10).

8 participants expressed that they enjoy the pop-out menu;
   P16 stated, "I really like that everything you need is on the side all the time."

10. What improvements do you think could be made with the proposed BSU website redesign?

7 participants noted that the menu and/or "myBSU" button could be more noticeable. 4 participants made comments about social media features; 3 desired more social media integrated on the home page, while 1 thought it should be less featured. There were only a few comments about design features; some liked the carousel on the home page while others thought it was too big or unnecessary. 4 participants didn't offer feedback for improvement.

11. Any other final thoughts or comments?

11 participants voiced final thoughts. All of them were positive. 9 participants made a reference to the old website.
> *"it's a lot better than the school's current website" (P15)*

Of those 9 participants, 6 made a comment expressing that the university should adopt the redesigned website. Comments include,
> *"I hope they eventually adopt it" (P13),*
> *"I hope that this becomes the new website" (P10),*
> *"I think that they should use it. It would definitely work better for students overall" (P5), and*
> *"swap it over A.S.A.P." (P11).*

8 Discussion and Future Work

Throughout the user experiment, I explored students' perception towards both the current BSU website and the proposed redesign. Each question was designed to effectively collect the important thoughts and opinions needed on both versions of the website to make the conclusions I needed. The following sections discuss the common themes found from the answers to the questions.

8.1 User Interface
My findings confirm that participants are much more positive to the visual changes made in the redesign, and they are negative towards the current website. In general, the overall design and feel of the proposed redesign were popular among the participants. Comparing the current website's interface with that of the redesign's shows that the students enjoyed the use of color and the wide-screen layout, and that the information is less cluttered, therefore easier to absorb everything they see on each page.

A general theme found among participants' comments was that the university's website should reflect what BSU is as a school. An important feature that would achieve this is the carousel (the automatically sliding images at the top of each website's home page), which was either liked or disliked by the participants. Those who disliked it stated that it should feature students and the campus itself more. Those who liked it said it's a great way to show who we are as a school, but that the images and stories don't do that very well. Although the general opinions differed, students thought that the imagery doesn't work

well for the school. (Note that I used the same images for the redesign that the current website uses for consistency, so these comments apply to both.)

These sentiments were found when the topic of social media sites was brought up, as well, though more participants liked the live feeds while others thought it's not important. The social media feeds also achieve the goal of making the school feels more connected to its students. The redesigned website achieves the goal of looking more up-to-date and aesthetically pleasing in general, according to the participants.

8.2   User Experience
My findings confirm that participants are much more positive towards their experience using the redesigned website rather than the current website. Aside from the user interface of the websites, users made important comments considering their experience using them.

Frustrated comments were made towards the current website's search function and use of links being buried within one another and hidden. Although most participants solely use the website to reach external services offered by BSU, the ones who do use www.bridgew.edu did not express positive experiences with interacting with the website.

Considering all 17 participants had something positive to say about the redesign's navigation system, I can conclude that it is an improvement. The pop-out menu made finding information faster, easier, and more pleasant for the users. The convenience of always having the information hidden on the right side of the screen which never changes adds consistency to the website, and makes trying to get to new pages less confusing.

Therefore, the redesigned website achieves another goal of providing users with an easier way to browse and click through the BSU website.

8.3   Future Work
This research produced preliminary results of how current BSU students view the possible redesign. While the feedback was overwhelmingly positive, there are multiple aspects that can be improved on per participants' suggestions. If the website were to be changed in the future, I would take the commonly mentioned suggestions and carry those throughout each web page (for example, making the menu button stand out more.) There are a few bugs in the code that would need to be fixed. Ideally, after making these changes, the same user testing participants would be rounded up again in order to gain stronger feedback. Adding the university's back-end functionality to the website would then make it completely functional and usable. Also, perhaps new photography and videography should be added in order for the website to stay current. The carousel feature should be changed to reflect student stories more, and the social media feeds could be made to look more important.

9   Conclusion
In this creative research project, I explored various reasons behind what makes websites crowd-pleasing and appealing. I read books and articles on HCI, UX, and UI design as a start,

and analyzed trends in some university websites, including a Webby award winner. I created wireframes for multiple pages of the BSU website in order to redesign it, then built it. I conducted 17 user testing sessions in order to test the proposed redesign against the current BSU website. This valuable feedback revealed important issues BSU students have with the current website, and what they wish to see in a new website.

This study showed that current BSU students are unhappy or indifferent towards the current university website, and don't enjoy using it. They expressed that they are not fans of how difficult it is to find information, especially through the search bar. However, there was a much more positive reaction to the proposed redesign. Every participant had something positive to say about the changed navigation. They had an easier time finding the information they were seeking. The general layout as well as the more "modern" look and feel to the website were well-received.

These findings and the voices of BSU students are important to take into consideration when the university plans to overhaul their website. www.bridgew.edu should have a more modern, up-to-date user interface in order to keep up with other universities, and even to stand out. Also, navigation should provide a great user experience so that visitors can quickly and easily find information. Until then, users will likely be frustrated with trying to find what they need on BSU's website.

These findings will be put to use in the future. While conducting the user study, various staff members of BSU from departments such as marketing and communications took interest and invited me to become a part of the school's website redesign team.

10 Acknowledgments

11 Reference
[1] Affinity Designer [Computer software]. (2014). https://affinity.serif.com/en-us/
[2] Affinity Photo [Computer software]. (2015). https://affinity.serif.com/en-us/
[3] Atom Text Editor [Computer software]. (2014). https://atom.io/
[4] Danino, N. (2001, Nov.). Human-Computer Interaction and Your Site. https://www.sitepoint.com/computer-interaction-site
[5] Everts, T. (2013). Rules for Mobile Performance Optimization. Communications Of The ACM, 56(8), 52-59.
[6] "Johns Hopkins University." The Webby Awards (2016). www.webbyawards.com/winners/2016/websites/general-website/schooluniversity/johns-hopkins-university/
[7] Lamprecht, E. (2016, Dec.). The Difference Between UX and UI Design-A Layman's Guide. http://blog.careerfoundry.com/ui-design/the-difference-between-ux-and-ui-design-a-laymans-guide/
[8] Moreno, H. (2014, April 24). The Gap between UI and UX Design – Know the Difference. http://www.onextrapixel.com/2014/04/24/the-gap-between-ui-and-ux-design-know-the-difference