Research + Education Website
Final Consulting Report

DATUX Consulting Team

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EXECUTIVE SUMMARY

The Cancer Center is a distinguished cancer treatment and research institution renowned for its scientific excellence and beloved by its faculty and patients. However, the current "Research + Education" page of the Cancer Center website does not adequately reflect the innovative and enterprising nature of the research programs and its faculty. As DATUX, we focused on gaining a better understanding of the user base of the website and progressed to developing solutions that re-imagine and redesign the website to make the site more functional for its users.

Through our interviews and data analysis, we discovered five main findings that fall under two categories: culture and website design & utility. Below are the findings for each category and the primary recommendations that follow:

CULTURE

1. There are three different groups of users: oncology professionals, trainees, and the public.

    a. To ensure that each group is getting information best suited for them, we suggest implementing collapsible menus that organize information for each group.

    b. Designing the site to meet these needs will also help the site cater to new recruits.

2. The website needs to be updated frequently, but the current intake process is informal and time consuming.

    a. Implementing a ticketing system for content update requests would add a structure to the process and make timelines transparent to faculty and staff.

WEBSITE DESIGN & UTILITY

3. Cancer Center staff believe that updating the look of the site will drive more traffic and better represent the Cancer Center as a leader in the field.

    a. Leveraging the official Brand Identity consistently will help the site feel cohesive and allow the Cancer Center to build on the parent institution's existing reputation in research excellence.

    b. Striking a balance between text and visuals, making content more engaging and easier to scan.

4. Relevant information is available to use, but is currently on external websites.

    a. Creating a "Blog & Highlights" page on the website that includes the Cancer Center Twitter, blog posts, weekly emails, and highlights upcoming events would act as a hub of all of the resources available.

5. Users are less likely to use the website because they find it difficult to navigate.

    a. Maintaining consistent sidebar menus for all Research + Education pages, making it easier for visitors to know where they are on the site.

    b. Marking external links will help visitors understand when they are routed to content that is not maintained by the Cancer Center team.

    c. Creating searchable researcher profiles which consolidate relevant information on one page will help the user navigate through easily and find the information they're looking for.

INTRODUCTION AND BACKGROUND

The Cancer Center provides patient care via clinical research, early detection, and prevention of cancer risks, and is funded by and is part of Michigan Medicine. The Center specializes in many types of cancer, and takes a multidisciplinary approach, meaning they utilize various perspectives through their clinical research. Their mission is to use their robustly diverse team from 50 different departments and 9 different U-M schools to discover new forms of cancer treatment. There is a large focus in training students to prepare for future generational studies in oncology. As a result of the vast offerings the Cancer Center specializes in, students and re-searchers are encouraged to follow topics they are most passionate about.

The Research + Education page of the Cancer Center website is the direct focus of the design project. We have scoped the issue down to this site as it serves as a landing page for both current and prospective trainees, researchers, and educators. The primary issue is that the look and feel of the Research + Education page does not mirror the innovative, dynamic work of the research programs. The problem statement for the project consists of updating the design of common features a typical user accesses, and even adding in content that is not currently accessible on the site. Moving forward, the website changes must address the needs of the differing user groups and the goal is to mimic formats of peer institutions which currently have a strong web presence. Re-structuring the content and format of the Research + Education page based on our interview data will foster an online environment to increase engagement and interactions.

METHODOLOGICAL OVERVIEW

METHODOLOGY – CONTEXTUAL ANALYSIS

In order to solve this problem, we used a process called "contextual analysis" to gather data. This process was created by consultant Hugh Beyer and computer scientist Karen Holtzblatt. The basic tenet of contextual analysis is that, in order to understand and fix a problem, you have to understand the context that surrounds the problem. To start our analysis, we researched the larger context of the problem.

RESEARCH REPORTS

In order to understand the context of the problem presented by the Cancer Center team, each member of DATUX conducted research into background information that could inform our analysis, including:

- The history of cancer, how cancer treatment has advanced over time, and the history of the Cancer Center itself
- The nexus between the online presence of a health industry institution and design
- Competitive analysis between the Cancer Center website and the websites of peer institutions
- The current state of cancer research, its issues, and the effects of emerging technologies on the sector

Overall, this research helped our team gain insight into the healthcare industry and the work of oncology research on a broad scale, before we moved into the next phase of our contextual inquiry.

INTERVIEWS

To understand the specific problem facing the Cancer Center, we needed to talk to the staff and researchers using the website to perform their work. Beyer and Holtsblatt wrote that "the core premise of Contextual Inquiry is very simple: go where the customer works, observe the customer as he or she works, and talk to the customer about the work" (Beyer, 70). Unfortunately, due to the pandemic, we were not able to visit the worksite. Instead, we conducted our interviews over Zoom.

In order to understand the issue better, we needed to talk to the customers, or in our case users, who used the website most often and learn what they liked about the site and what problems they were encountering. After receiving the names of these individuals, we grouped them by job role and composed a set of interview questions for each role to assess their use of the site. These questions, also called interview protocols, served as a guide for our conversations with members of the Cancer Center team.

INVTERVIEWS (CONTINUED)

We then conducted our interviews in two person teams. One member of our team asked questions in accordance with the established interview protocol, while the other observed, took notes, and managed the recordings. These recordings were then anonymized and compiled into short notes in a database.

We now had abundant qualitative data, but it was an imposing mass without order, impossible to understand and decipher meaning from.

AFFINITY WALL

To introduce order and learn from this qualitative data we made an "affinity wall." An affinity wall is a tool that groups statements and observations gathered during interviews and makes it easier to draw insights from it. To introduce order to this qualitative data, we took each observation and made it into a sticky note. We then started grouping like notes together until we started to see trends. These trends were then codified and united under a larger, overarching sticky note that summarized the main ideas within the group. These larger sticky notes were then grouped again into what we identified as the largest problems users of the website faced when trying to access information and use the site during the course of their work.

With the information now ordered, we could better understand the barriers and frustrations that prevented users from fully utilizing the website and begin to address the issues they faced so that we could provide guidance to help correct those issues.
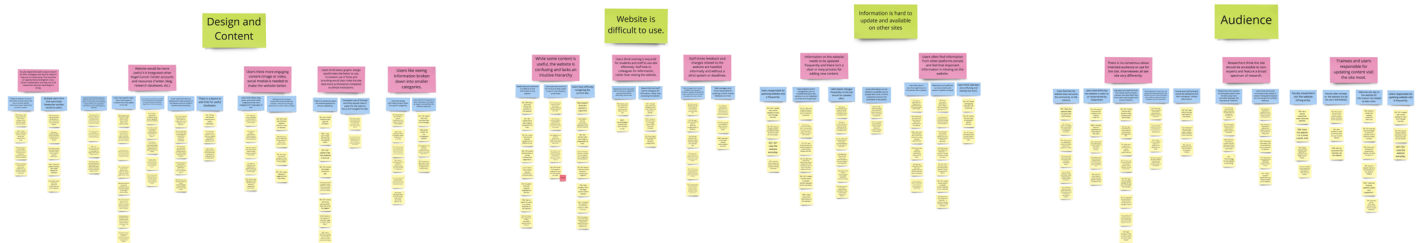
An overview of the final affinity wall, aggregating content from all of our user interviews.
Our digital affinity wall was created using Miro.

A persistent barrier to users fully implementing the site was the question of audience. Through our contextual interviews, we identified three primary audiences that the site must cater to:

- Oncology professionals within the Cancer Center who need highly specific and engaging scientific content and contact information for colleagues
- Cancer Center trainees who need similarly specific content to researchers, but in the context of their trainees program and education
- The public who needs basic information on the Cancer Center and oncology as a whole, including patients and their families

Each of these groups has different needs of the site. Sometimes these needs overlap and can be achieved on a single page, but occasionally the groups needs are in direct opposition to each other.

TAILOR CONTENT TO THE AUDIENCE

For instance, the site needs to be simple to understand and jargon free for the public but complex enough to be engaging and interesting to oncology professionals. One of our interviewees felt that the general public's interest was not served by the public and said simply that "a cancer center must engage the community and this website does not engage the community."

One way to resolve this conflict and create a more inclusive experience is to use collapsible menus to organize information catered to each audience. This way, users can self select relevant information based on their interest and education level. A similar structure can be seen on the Penn Medicine Abramson Cancer Center Education and Training site, where they group relevant information by education level ("Education and Training").

Education and Training Programs with Direct or Indirect Relevance to Cancer

Select from the tab menu below to find educational resources across our campus. Click through to learn more about each program or to find contact information.

- High School and Undergraduate
- Medical School and Graduate School
- Clinical or Postdoctoral Fellow
- Graduate Medical Education (GME)
- Faculty, Professional and Continuing Medical Education (CME)

A screenshot from Penn Medicine's Abramson Cancer Center site shows collapsible menu with sections related to different levels of education ("Education and Training"). When a section is selected, the section expands to show links to different programs available to those audiences.

Website as Recruiting Platform

One thing that came up again and again during our interviews was the pride your members had to work at the Cancer Center. Interviewees indicated that they felt they worked in a collegial, collaborative, and supportive environment. This is a very good thing, but one interviewee indicated that they did not think this translated well to the website. This respondent described how when they were looking for a job at the Cancer Center they were torn between joining one department or another. During the interview process, they discovered that those departments conducted joint meetings, meaning that the interviewee could benefit from both; regardless of which they joined. The interviewee indicated that collaborative information of that nature is vitally important to promote on the website so that researchers and faculty can find their niche and role of best fit if they are looking to join the Cancer Center.

A resolution to this problem would be to include a recruiting page on the Research + Education page of the website that clearly states the various ways in which the Cancer Center fosters a nurturing, collaborative, and academically rigorous workplace. Including this page will allow the Cancer Center to advertise the collaborative nature that its members appreciate.

During our interviews, we found that researchers and staff feel that the website needs to be updated frequently, but the current intake process for updates is informal and time consuming. Cancer Center staff who are responsible for updating the website find that the process for researchers requesting updates is "informal" and often via email. Faculty researchers suggest that their work related to the website needs to be "updated frequently" and believes that timely updates are "more effective." However, staff also noted frustration related to updating the site, saying that those responsible for completing updates are not told exactly what needs to be updated and where, which requires more effort to finalize the update request.

TICKETING SYSTEM FOR CONTENT UPDATE REQUESTS (Short-Term Solution)

In an effort to formalize the website update request process, we recommend implementing a ticketing system to intake and track requests. This recommendation would require the web development team to create a form that asks for specific information related to update requests. The form could include fields to share the requester's deadline, reason for the update and overall goals, explicit instructions for changes, and direct URL to the page that needs to be addressed. This process also provides an opportunity for the web development team to create set standards for turnaround times related to site updates, such as 5 business days for small updates or 10 business days for larger requests.

This recommendation could be implemented using Google Forms, a free resource available to U-M staff. When submitting content to a Google Form, the information is stored in a cloud-based spreadsheet and is accessible by collaborators, as well as easy to archive. Through this request intake method, researchers and web development staff could work more collaboratively on site updates. Requesters, whether staff or researchers, could share exactly where and what needs to be updated and web developers can be transparent about timelines for making changes, taking the guesswork out of updating the site on both sides.

The Strategic Partners in E-Communications and Solutions (SPECS) in U-M's Development Services implements a similar request ticket system, requiring users to include key information about their edits, such as deadlines driving the request and specific content changes, before a ticket is opened.

WEBSITE UPDATE PROCESSES

Above are screenshots of SPECS' Website Update Request form, which includes fields requiring contact information, goals and objectives for updates, "go live" date, and specific content information and placement for updates ("Strategic Partners"). The form also notes that the average turn around time for update requests is between 5 to 10 business days. This form opens a ticket that is then trackable by both the SPECS team and the requester.

PROVIDE USER EDITING ACCESS (Long-Term Solution)

Alternatively, the web development team could prevent the request backlog and alleviate pressure manage minutiae by providing individual users with access to edit their own pages or profiles. This can be achieved through Drupal's users, roles, and permissions settings ("Users, roles, and permissions"). We believe this to be a long-term recommendation for the Cancer Center web team, as it would require training new staff to manage the site.

Cancer Center staff believe that updating the look of the site will drive more traffic and better represent them as a leader in the field. Throughout our contextual interviews, we received consistent feedback that users felt the visual design of the website was a contributing factor to why they don't use the site frequently. While several interviewees expressed that the site didn't align with their personal design tastes, one interviewee felt that the site look "outdated" and another wanted the site to have "wow factor" that would help promote user engagement and better demonstrate the Cancer Center's leadership in the field of cancer research and education.

Interviewees also expressed that pages, primarily the Research Programs page and its subpages, are too text heavy for the average user. Specifically, researchers and staff believe that short videos, "video highlights," or varying visual content would be more engaging to them and a better resource for patients and their families. There is also consensus among interviewees that generic photos are less successful at conveying the work of the Cancer Center compared to images of "actual researchers doing research." The DNA image on the Research + Education main page was of particular concern to our interviewees.

To consider these findings at a high level, we have several recommendations related to the visual styling of the site.

LEVERAGE THE BRAND IDENTITY

Following branding guidelines can help the Cancer Center Research + Education website build on the parent institution's standing reputation of excellence in research and education. The parent institution's Office of the Vice President for Communications has a number of resources available to help departments create continuity in brand and visual identities across campus. The Brand & Visual Identity website includes documentation on brand colors and font recommendations to keep content cohesive and differentiate it from competitors.

Following the brand guidelines is not only important for keeping the Research + Education site inline with the university identity, but also in verifying that the site meets the accessibility needs of the users. This includes confirming that color typography meets the contrast ratios required by parent institution's ITS accessibility team. While many components of the site satisfy this criteria, there are a few areas where current color pairings are not accessible under these guidelines. The Brand & Visual Identity includes combinations of the institution's signature, supporting, and neutral colors, making it easy to ensure visual accessibility.

RESEARCH INTRANET:
requires U-M level 1 password
- Research Committee
- Cancer Center Trial Support (CCTS)
- Data Safety and Monitoring Committee
- Protocol Review Committee

Normal Text
WCAG AA: Fail
WCAG AAA: Fail

The five boxing wizards jump quickly.

Large Text
WCAG AA: Pass
WCAG AAA: Fail

The five boxing wizards jump quickly.

Accessibility example: A text box on the Research Programs page (left) does not pass the WebAIM Contrast Checker (right, "Contrast Checker") as required byU-M accessibility standards.

STRIKE A BALANCE BETWEEN TEXT AND VISUAL IMAGERY

Building on feedback from our contextual interviews, we recommend that text be pared down in favor of other types of content, with the aim to prioritize photos of researchers in lab spaces over generic images where possible. Kathryn Whitenton of the Nielsen Norman Group (NN/g), a leader in user experience research, encourages that images or videos be used "appropriately," meaning that they should be prioritized to bolster goals of the page and capture attention. While the current Research + Education site includes robust and in-depth writing on its research programs, it has been found that an average of 16% of web users only read web writing "word-for-word" (Nielsen). NN/g suggests that web writing should use half of the word count of traditional writing (Nielsen). Striking a balance between goal-oriented and engaging images and shorter, scannable text will improve the usability and appearance of the site.

For inspiration, we recommend reviewing the sites of two competitors identified during our research, the University of Michigan Office of Research and UChicago Medicine Comprehensive Cancer Center. Both demonstrate a good use of engaging photos of staff working in lab spaces. In addition, the Brand & Visual Identity site provides guidance on branded photography, including recommendations for highlighting safety practices in lab-based photos ("Photo Safety Tips").

In considering accessibility standards for these visual resources, we encourage the Cancer Center team to review documentation from Web Accessibility In Mind on "Captions, transcripts, and audio descriptions" for videos and "Alternative Text," or "textual alternative to non-text content," for images (WebAIM). Both of these methods support site visitors with visual or hearing impairments, or those using adaptive technologies like screen readers.

The UChicago Medicine Comprehensive Cancer Center Research & Clinical Trials page demonstrates an effective balance between engaging photos of researchers and scannable text to support the main navigation menu ("Cancer Research & Clinical Trials"). This layout creates a more dynamic experience for visitors, as well as highlighting diverse faculty researchers.
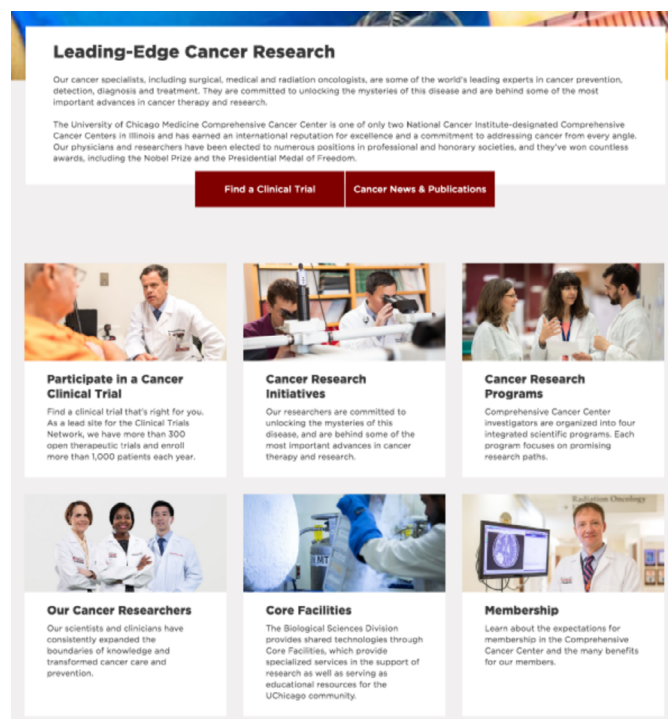
One issue we found from multiple interviewees was the existence of valuable content that is created by the Cancer Center, but is not included on the website. The in-house content our participants stressed as being most relevant were from different sources:

- Tweets from the Cancer Center Twitter account
- Posts from the institution's Health blog
- Weekly "Abstract" distributed via email
- Upcoming events listed on the Cancer Center All Events Calendar

FR1 stated that "all the data and pieces are here, they just need to be represented on [the] website." Our overall recommendation is to create a 'Blog & Highlights' page on the website that includes all of these components. Each component is described in more detail below.

'Blog & Highlights' page mock-up. The mock-up includes content that currently lives on other Cancer Center sites and accounts, including Twitter, the weekly emails, blog posts, and the calendar.

TWITTER WIDGET

Resounding feedback from our interviewees was focused on the Cancer Center Twitter. Our recommendation is to include a Twitter widget on the website near the header of the page which serves as a slide deck of tweets from the Cancer Center account. Participants reported that they felt linking to publications already posted on Twitter served as a great medium for gaining views and interactions from a potentially wider audience. By highlighting publications and connecting these two communities via the widget, there will be an influx of additional viewers. This recommendation also creates a pathway to highlight the works of researchers on the website. Participant FR3 reported that they find out if their research is being featured through friends or colleagues that see it through Twitter, even if they're across the world. Users that don't visit Twitter themselves would be unlikely to find this information otherwise.

BLOG POSTS

Similar issues are solved with the inclusion of blog posts on the main site. The recommendation is to list the blog posts in a column down the page of individual blocks, each representing its own blog post. Blog posts are currently housed on a separate website. Again, if users aren't actively visiting those sites, they wouldn't be able to see when their peers' work, or even their own, gets featured. If issues arise with the cross-compatibility of the blog posts directly onto the website, a short-term solution would be to copy and paste the content onto the Cancer Center website.

WEEKLY EMAIL

When discussing the methods for finding information pertaining to Research + Education with participants, we received responses of high praise attributed to the current weekly "Abstract" emails. Participants stressed they did not want to get rid of the weekly email, but would like to see it also included on the website. The recommendation is to integrate the emails (as they are written) into the main content along with the blog posts. Each weekly-update email would be in its own block just as the blog posts are formatted. FR1 reported that publication and grant announcements are currently notified in the email. Pushing these to the website as well creates another pathway for the Cancer Website users to be more likely to visit, and would increase the utility of the website.

UPCOMING EVENTS

Interviewees E01 and FR2 would like to see Research + Education specific events more prominently featured on the site. We recommend including upcoming events (one week in advance) on the right-hand side of the proposed Blog & Highlights page. The target is to make another spot for upcoming events to be visible to the user that is not via the calendar. A comprehensive feel to the page is achieved with the Twitter widget on top, the blog and email posts comprising the body, and now the upcoming events visible in its own block on the right. The inclusion of upcoming events fits the tone the page attempts to achieve as users will visit this page to see recent publications or achievements from the other components, and then can plan for upcoming seminars, projects, etc.

Another key finding that we discovered through the contextual interviews is that users find the website difficult to navigate. When asked how they find relevant information regarding the Cancer Center, multiple interviewees noted that they use Google to find the information because they feel it is easier that way than navigating the website. Another way they find information they need is by emailing their colleagues – one interviewee shared, "I can get information from my colleagues whom I trust, rather than look at the website." Overall, it seemed that the users typically opt for other ways of finding information instead of searching the website because of the difficulty in navigation.

To narrow down the scope of this navigation issue, we tried to find out what information users typically tend to look for. A sub key-finding we discovered is that researchers and faculty members primarily access the website to find information about their colleagues. Currently there is the Cancer Center Members page with a list of the members in alphabetical order with their name, research program(s) and department(s). However, some of our interviewees voiced that the list of researchers is "cumbersome" and would like to see some other options, such as a drop-down menu or ways to sort through the list. There was another suggestion that it would be helpful to be able to search for a research by keywords and get a list of everyone working on that research even if it is partial. Because a majority of the interviewees noted that they are looking for their colleagues' information, it would be helpful to consolidate information regarding Cancer Center members to a single page and adding additional navigation features.

CREATE CONSISTENT SIDEBAR MENUS FOR ALL PAGES (Short-Term Solution)

One solution that may help make the Research + Education section easier to navigate would be to apply consistent sidebar menus for all of the pages in this section. Currently, clicking on the following links in the main Research + Education page result in a uniform sidebar menu on the left:

- Research Programs
- View our Researchers
- Events for Cancer Center Members
- Shared Resources
- For Research Members
- Funding Opportunities

However, clicking on "Clinical Trials" and "Seminars and Lectures" from that same section results in two different sidebar menus as seen below. Users may be confused by inconsistencies in the menus and may have difficulty understanding where they are on the site. By creating a menu that is the same for all of the Research + Education section pages may help lessen that navigation confusion.

Sidebar menus from on the Cancer Center Research + Education pages, "Research" (left), "Seminars and Lectures" (center), and "Clinical Trials" (right). Options available on each of the pages differ significantly, making it difficult for users to quickly navigate between sections. Our recommendation would allow for users to access any page from any point on the site. Menus also inconsistenly indicate with page is currently active, with some active pages marked in yellow.

MARK EXTERNAL LINKS (Short-Term Solution)

Many pages, including some researcher profiles, link to pages not managed by the Cancer Center. We believe it will be beneficial to users to mark these links with an external link icon. This would help let the user know what they are about to click on will redirect them to a new page and that they're leaving the Cancer Center site.

Faculty profiles on the Molecular & Integrative Physiology site include links to faculty labs ("Primary Faculty"). Links are marked with a square and upward facing arrow, a typical icon to mark links directed to external sites.

MAKE ROBUST AND SEARCHABLE FACULTY PROFILES (Long-Term Solution)

One of our primary recommendations is to update the existing "Cancer Center Members" page with more robust, consistent, and searchable researcher profiles, as well as the options to sort the researcher list by name, research program, or cancer type. The profiles would include:

- A photo, contact information, research program(s), department(s)
- Links to lab pages or profiles that may live on other departmental websites
- A succinct biography (either written or in video format)
- A list of researcher areas of interests, credentials, honors and awards, and publications

We believe that the creation of these searchable profiles will help make it easier for current research faculty to search and find their colleagues information, trainees to identify research faculty in their fields of interest, and aid patients and families to learn more about the clinicians responsible for their care. A tagging system on these profiles can help show connections between different research faculty by cancer type and department. Additionally, it would make it easier for users to find hard-to-find pages by linking individual research program pages to the researcher, consolidating where users need to look for links and relevant information. Although the profiles may not have as much information as the researchers, adding the trainees to this profile list may be beneficial as well. Overall, the creation of these searchable researcher profiles will help the Cancer Center reflect its dynamic, diverse faculty and showcase the amazing work that's being done.

Christine Collins, M.D.

Research Program(s)
Translational and Clinical Research   Cancer Genetics

Department(s)
Internal Medicine

Contact Information
Email: sample@umich.edu
Phone: 888-888-8888

Other Sites
Collins Lab

Biography –

M HEALTH SYSTEM
VIDEO PROFILE

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Areas of Interests +

Honors and Awards +

Published Articles or Reviews +

Credentials +

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Other Sites
Collins Lab

Left: Faculty profile page mock-up, including collapsible sections for various information. Videos and other media content can also be included in these sections.

Above: Closer view of the researcher contact information and research program(s) and department(s). All text marked in light blue with underline is intended to link to those pages. External links not managed by the Rogel Cancer Center are marked with an external link icon.

FOR ADDITIONAL SUPPORT - BECOMING A CLIENT FOR SI 622

Because of the scope of the SI 501 course, this report is designed to provide recommendations based on what we've discovered during our time this semester. However, if you would like to continue working with MSI students for additional support to further improve the Cancer Center website, we recommend you to become a client for SI 622 - Needs Assessment and Usability Evaluation. This course connects the client with a team of graduate students and focuses on the target audience, analyzes the usability of the system, surveys the users for opinions and experiences, and incorporates new and emerging evaluation methods.

CONCLUSION

Based on the data from our interview participants, we grouped our findings into five main groupings. The findings fall under two types of problems, culture findings and website design & utility findings. By getting an understanding of the administrative issues (defining the audience and finding a method to update the website), it is much easier to then make the design and content updates as you have a better understanding of an effective use for the Research + Education page. By increasing the utility of the website for different user groups, not only will there be an increase in activity by current faculty and trainees, but a predicted increase in external traffic will follow as well.

Our proposed recommendations will yield a cohesive website with content tailored to all audience groups of Cancer Center faculty. In turn, with using the website to showcase the technology and resources available, the hopes are that researchers from other institutions and prospective trainees (external viewers) are drawn to the University of Michigan.

WORKS CITED

Beyer, Hugh, and Karen Holtzblatt. Contextual Design: Defining Customer-Centered Systems. San Francisco, Morgan Kaufmann. 1997.

Brand & Visual Identity Family of Sites. The University of Michigan, brand.umich.edu. Accessed 30 November 2020.

"Cancer Research & Clinical Trials." UChicago Medicine Comprehensive Cancer Center, www.uchicagomedicine.org/cancer/research. Accessed 5 December 2020.

"Contrast Checker." WebAIM, webaim.org/resources/contrastchecker. Accessed 1 December 2020.

"Education and Training." Penn Medicine Abramson Cancer Center, www.pennmedicine.org/cancer/cancer-research/for-researchers/education-and-training. Accessed 4 December 2020.

Nielsen, Jakob. "How Users Read on the Web." Nielsen Norman Group, 30 Sept. 1997, www.nngroup.com/articles/how-users-read-on-the-web. Accessed 30 November 2020.

"Photo Safety Tips." *Brand & Visual Identity Family of Sites*. The University of Michigan, brand.umich.edu/design-resources/photography/photo-safety-tips. Accessed 30 November 2020.

"Primary Faculty." U-M Medical School Molecular & Integrative Physiology, medicine.umich.edu/dept/molecular-integrative-physiology/faculty/faculty/primary. Accessed 6 December 2020.

Rogel Cancer Center Research + Education Family of Sites. The University of Michigan Rogel Cancer Center, www.rogelcancercenter.org/research-education. Accessed 30 November 2020.

"Strategic Partners in E-Communications and Solutions." University of Michigan Development Services, services.dev.umich.edu/index.php?base=team&page=specs. Accessed 2 December 2020.

"Users, roles, and permissions." Drupal, www.drupal.org/node/120614. Accessed 4 December 2020.

Whitenton, Kathryn. "Image-Focused Design: Is Bigger Better?" Nielsen Norman Group, 28 Sept. 2014. www.nngroup.com/articles/image-focused-design. Accessed 30 November 2020.

ADDITIONAL RESOURCES

INSPIRATION FOR DESIGN AND INFORMATION ARCHITECTURE

Below are a number of competitors, both U-M departments and external institutions, whose sites may provide inspiration as the Cancer Center makes updates to the Research + Education site. The sites below demonstrate interesting use the recommendations included in the report, including branding, navigation, and image use.

University of Michigan sites:

- U-M Biosciences Initiative

- Michigan Institute for Clinical & Health Research

- U-M Institute for Healthcare Policy & Innovation

- U-M Office of Research

- U-M Precision Health

External sites:

- Dana-Farber / Harvard Cancer Center
    - Includes searchable members list on "For Researchers" page
- Penn Medicine Abramson Cancer Center
- Stanford Medicine Cancer Institute
- UNC Lineberger Comprehensive Cancer Center
- University of Chicago Medicine Comprehensive Cancer Center

WEB ACCESSIBILITY SUPPORT

During our initial scoping, we discussed the importance of web accessibility. While we touched on this briefly in our report, the are many resources available to help ensure the site is accessible to all. Below are two valuable resources full of tips, tricks, and tutorials to help meet accessibility needs:

- University of Michigan IT Accessibility Resources & Guides

- WebAIM: Web Accessibility in Mind