

MEMORANDUM

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DATE: 10/20/2013

SUBJECT: User Testing Results

The enclosed report summarizes the results of the card sorting and label testing study our group conducted over the last three weeks. Our subjects consisted of several members of the website's target audience of established female physicians, new female physicians and rising female physicians. Most of our test subjects were established female physicians who had families and several were practicing at Allegheny Health Network. The results were essential in developing a site hierarchy that would be easy for users to navigate.

Card Sort

After analyzing the results from our card sorting study, we determined that:

- Users would be most comfortable with about five to eight different labels as the majority of our users created about this many categories to organize the cards in.
- Label names were too long and non-specific for our original "Opportunities" category. The users had a difficult time making a succinct name so we needed to relabel the "Opportunities" related topics to be more specific.
- Users found several topics difficult to place, such as "Medical Breakthroughs", "Journal Articles", and "Harassment in the Workplace" so we decided to remove these topics completely as they would not help the users accomplish their goals on the site.

Label Testing

After analyzing the results from our label testing study, we determined that:

- The majority of our topics tested well with the changes we made to the site hierarchy based on the results of our card sorting study.
- There were discrepancies with topics such as "Networking Lunch Series" and "Speaker Series", which were not always placed in the "Events" category as we expected. However, our card sorting study strongly supported the reason to place these topics under the "Events" category as our group feels would be clear in the context of the rest of the website.
- Many users found it difficult to properly categorize the "Directory" label so our group decided to rename this label to "Members Directory" instead.

User Testing Report

AHN Women in Medicine Web Site

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Executive Summary

In order to collect data about the information architecture of the Women in Medicine website, we conducted 2 user tests to figure out what hierarchy and organization scheme would be the most helpful to users of the site. The first user testing conducted was the card sort. Card sorting is a user testing activity that requires users to group randomized topics together and create a label for each grouping. The second user testing conducted was a label sort. Label sorting is a user testing activity where users are asked to pick the label they believe each topic falls under.

Our card sorting activity included 22 cards and 8 participants from our primary user group were tested. The information that we gathered from our eight subjects had a significant impact on how we determined our final heading structure. All of the users created about five to eight different categories to organize the given cards. We determined that most of the labels appeared to be organized by topic of information rather than task. Label names were created from the labels that the participants created for the topic groupings. Our group completely removed two topics from the organizational scheme because of the negative feedback and confusion from the participants. After analysis of the card sorting data, the organizational scheme was determined to be Home, About WiM, Events, Opportunities, Community Resources, Members, Blog, and Contact.

Our label testing activity used the labels mentioned above, except for Blog and Contact because those two labels had no topics underneath. The user test was conducted on 8 participants that fell into our tertiary user groups. Some participants incorrectly placing topics with unrelated labels. This resulted in more descriptive label names and topic reorganization. The resulting organizational scheme from label testing analysis was determined to be Home, About WiM, Events, Professional Development, Community Resources, Members, Blog/Forum, and Contact Us.

Explanation of Terms

For the purposes of this report, a “label” refers to a category or grouping of content on a web site. A “topic” refers to individual paragraphs or a page of content. So, the sitemap/navigation menu of a site would be composed of labels and topics in this hierarchical manner:

- Label
 - Topic
 - Topic
 - Topic
- Label
 - Topic...

Users Tests

Goals of User Testing

The overall goal of user testings is to obtain information about how the user would want the website to be organized. Card sorting is a user testing activity that assists designers in creating an organizational scheme based on user preference. This user testing activity gives designers user preferred topic groupings and label names. Label testing is a method that is used to help designers determine what kind of vocabulary they should be using when creating the navigational structure of a website. Label testing is a method that is used to help designers determine what kind of vocabulary they should be using when creating the navigational structure of a website. The goal of label testing is to help designers determine an appropriate navigational structure that conforms to the users' mental model when thinking of how these topics should be organized. Label testing evaluates the effectiveness of the organizational structure created from the previous card sorting user test. An user preferred navigational structure that is organized is the ultimate goal.

Testing Procedures

Card Sort

The complete procedure and script used for the card sorting sessions is attached in Appendix B. A summary of the process is as follows:

To begin the card sort test, users filled out a basic demographics survey to get background information on their age, education level, number of years living in the Pittsburgh area, etc (see Appendix B: Doc B). This demographic information was recorded to ensure all of the participants were in one of the demographic groups WiM is targeting. To conduct the card sort test, we gave participants 22 cards, each with a topic of content printed on it (see Appendix D). The users were instructed to sort the cards into related groups and then come up with a name (or “label”) for each grouping they made. They were also given blank cards to add any topics they felt should be on the web site. After the participants finished, they were given a closing survey (see Appendix B: Doc C) to record any difficulties they had with the card sorting activity.

Label Testing

To conduct the user testing, participants were selected by their major and interest in becoming a physician. We collected the demographic information of each participant before beginning the user testing exercise. We explained the general rules of the label testing exercise to the participant. They were given the background of the website and informed that the label testing was for a Women in Medicine website. They were also told to click the label that they felt each category should be part of. The participants were also told to pick their initial instinct and not worry about wrong answers. Each participant began the exercise once they were completely aware of the rules. The label testing facilitator proctored the exercise and made note of the comments that the participants made during the exercise. Once completed, the results were saved.

Participant Profiles

Card Sort

Participant 1:

- 25 year old female medical student
- Has lived in the Pittsburgh area for ~2 years
- Single, no children

Participant 2:

- 27 year old female medical student

- Has lived in the Pittsburgh area for ~5 years
- Single, no children

Participant 3*:

- 44 year old female physician
- Lives in Washington D.C.
- Married, 2 children

Participant 4*:

- 52 year old female physician
- Lives in San Francisco
- Married, 2 children

Participant 5:

- 37 year old female physician
- Has lived in the Pittsburgh area for ~8 years
- Married, no children

Participant 6:

- 39 year old female physician
- Has lived in the Pittsburgh area for ~9 years
- Married, no children

Participant 7:

- 46 year old female physician
- Has lived in the Pittsburgh area for 20+ years
- Married, 1 child

* These tests were conducted via Skype.

Participant 8:

- 55 year old female physician
- Has lived in the Pittsburgh area for 10+ years
- Married, 2 children

Label Testing

Participant 1:

- 20 year old female pre-med student
- From New York, NY
- Biomedical/Chemical Engineering major at Carnegie Mellon University
- Single, no children

Participant 2:

- 22 year old female pre-med student
- From Pittsburgh, PA
- Biology major at Carnegie Mellon University
- Single, no children

Participant 3:

- 24 year old female medical student at University of Pittsburgh
- From D.C.
- Single, no children

Participant 4:

- 19 year old female pre-med student
- From Philadelphia, PA
- Biology major at University of Pittsburgh
- Single, no children

Participant 5:

- 20 year old female pre-med student
- From Baltimore, MD
- Psychology major at Carnegie Mellon University
- Single, no children

Participant 6:

- 21 year old female pre-med student
- From Houston, TX
- Biology major at Carnegie Mellon University
- Single, no children

Participant 7:

- 22 year old female pre-med student
- From New York, NY
- Chemistry major at Carnegie Mellon University
- Single, no children

Participant 8:

- 20 year old female pre-med student
- From Charlotte, NC
- Biology major at Carnegie Mellon University
- Single, no children

Card Sorting Analysis

Results Analysis

All of our users created between five and eight labels to group the 22 cards/topics they started with. This illustrates the “7, plus or minus 2” best practice in design. Users are typically able to process 5-9 items at a time. According to David and Jean Farkas’s “Guidelines for Designing Web Navigation”, a good website navigation has an appropriate ratio of breadth and depth navigation links. Based on the Farkas recommendation, and the findings of our card sort study, we limited our final organization structure to no more than 9 items at any one level of hierarchy, to ensure we do not overwhelm users with too many choices at the first level of the navigation menu.¹

Some of the labels participants came up with to categorize each stack of cards they made were very long, such as “Outside Opportunities to get Involved”. Others were too short and non-descript such as “Meetings”. While the label names participants produced were not ideal, we were able to determine that most of the participants organized the cards by topic rather than task, as what is discussed in Chapter 6 of Ginny Redish’s “Letting Go of the Words”. Redish argues that website content should answer the users’ questions by organizing content by either topic (with related content grouped together) or by task (with information needed to complete a particular task grouped together). From our study, it seems users prefer browsing topically, with rather than in a question-based order (e.g. “How can I get involved?”).²

We received a lot of helpful feedback from participants through the card sort. Participants 1 and 2 were both unsure of where to put the “Contact” card. They wanted to put it under either “Home” or “About Us”. Participants 4, 6 and 7 said they did not see the relevance of the “Harassment in the Workplace” card and were not sure it belonged on this particular site. Participant 4 said that it should go in a blog or forum. Participants 7 and 8 felt they would not seek “Medical Breakthroughs” or “Journal Articles” from the WiM site. They said that they would look for those topics through other sources and felt that they weren’t related to the Women in Medicine cause.

Organizational Scheme

For our site organizational scheme, we listed Home, Blog and Contact as menu items without any sub-topics. By convention, the Home page will be the landing page for the site with an overview of the site and organization as a whole, so there will not be any pages categorized underneath it. The Blog section of the site will be organized into its own categories which will be

¹ Farkas, David K., and Jean B. Farkas. “Guidelines For Designing Web Applications.” *CiteSeerX*. N.p., n.d. Web. <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.87.7306>>.

² Redish, Janice. *Letting Go of the Words*. Amsterdam: Morgan Kaufmann, 2012. Print.

listed on the Blog homepage. These categories will be determined by the WiM site administrators or guest authors as posts are written for the Blog. The contact page will have telephone and email contact details by convention, so no sub-topics will be underneath this label.

We placed Home at the beginning of the site map (as the first link) because the landing page will be the first thing users will see. The Blog was listed towards the end of the site map/links because our group felt that mainly regular users will be visiting the blog, to check for recent updates, and it would not be as important to new users. The Contact label was listed last because it serves as the next action for any site users who have questions that were not answered by any of the other content on the site.

We decided on our first category name to be “About WiM” because we felt that just “About” was too short and non-descript and by specifying that it is WiM, the category name successfully answers the user question of “Where can I find information about the organization?”. We listed our three subcategories under “About WiM” as “Mission & History”, “Program Administrators”, and “Contact Us”. We altered the names from our original cards to be more concise. Our Items by Items spreadsheet indicated that topics that consisted of contacting the organization, learning about WiM and learning about the program administrators were grouped together about 50% to 70% of the time. We listed this category first because new users would be likely to want to learn more about the organization before learning about what the organization offers.

Our second category listed is “Events” because based on our client meeting with Liz Cuevas and Kathleen Holleran, the clients demonstrated that networking and professional development were one of the most important services the group offers. The sub-topics we have consist of a link to the calendar of events and other provided events such as community service activities. According to our Overall tree diagram, topics that were related to events were grouped together more often. We decided to change the name of “Community Outreach” to “Community Service Events” because many of our test subjects felt that the word “Outreach” made the topic ambiguous.

The “Opportunities” label is the third category because based on the client’s emphasis on networking and professional development, it seems that WiM’s primary goal is to serve as a professional resource for its members. This category gave us the most problems in regards to deciding what kind of sub-topics to list under it. Our group felt that our original card names of “Career Opportunities”, “Internship Opportunities”, and “Residency Opportunities” were names that were too misleading for the users. The card sort resulted in all three of these topics being grouped together 100% of the time. One of our test subjects even listed “Career Opportunities” as the category name, which was the same as the card name. In order to fix this problem, we decided to consolidate the three card names into “Career Opportunities” because they are all related to advancing one’s career, and we listed the category name as just “Opportunities” in an attempt to answer the question “Where can I find information on different residency programs offered at AHN?”. “Scholarships” is also a related category because it has to do with physicians in training and we felt that mainly secondary and tertiary users will be accessing the site.

We felt that the “Community Resources” category would be mainly visited by our primary users of already established women physicians. All of these sub-topics are related to resources that will help these women improve their lives outside of work. We changed the name of “Babysitters and Daycares” to “Family Resources” because one of our test subjects pointed out that we did not have any cards related to helping physicians with older children in middle school or high school and not just infants. One of the biggest difficulties for these physicians is finding things to keep their kids occupied throughout the summer when they do not have school. Some of these activities would consist of summer camps, and other extracurricular events. We decided to consolidate all of these ideas into the “Family Resources” category and also have a “Recreation” topic to cover all these points. Many of the primary users may even use the “Recreation” to search for classes and groups to join for themselves. “Churches, Synagogues and Other Religious Organizations” was consolidated into “Religious Organizations” because the original name was redundant.

The final major category on our list is “Members” because this is where we decided we would list all topics that are related to member resources such as the directory and information about mentorship opportunities. In our meeting with Liz and Kathleen, they mentioned that there is no official mentorship program but they do offer the ability to have a casual mentor. By consolidating the cards “Find a Mentor” and “Find a Mentee” to just “Mentorship”, we can portray the link as to just mentorship opportunities rather than a complete program. We replaced “Physician Bios” and “Physician Directory” because the two topics were too similar. The two cards were paired 100% of the time and our group agreed that the two cards could be combined into just “Directory”.

Our group also decided to completely remove the “Medical Breakthroughs” and “Harassment in the Workplace” topics because across our entire card sort study, most of the participants were either confused by the cards or felt that they were out of place of the entire group. “Harassment in the Workplace” could fall into the “Personal Support Group” topic.

Label Testing Analysis

Results Analysis

For our final organizational scheme, we analyzed the data from our label testing and used the results to adjust it accordingly. We decided that any standard deviation above 1 in the number of participant attempts indicated that we should improve the location of that topic.

We removed “Contact Us” from the label, “About WiM” because the standard deviation for the number of attempts was 1.3. Over a third of our participants tried to place this topic under the “Home” label, so we decided to make it an independent link on the Home page.

We changed the order of the topics under the label “Events” so that the Calendar of Events was first, and we placed the remaining topics in alphabetical order. We did this because we felt that the calendar was the most important topic since it would include all the events for WiM.

We changed the label “Opportunities” to “Professional Development” because the former term is a little ambiguous. “Professional Development” is more all-encompassing. Because our users were unsure of where to place “Scholarships”, we felt that we needed to make the label for this category a little clearer. The standard deviation for that topic was 1.1 because one user tried to put it under “About WiM” and “Members” at first.

Under “Community Resources” we added “Living in Pittsburgh” because in our first draft we forgot to include a topic for housing resources and helpful information for people who are new to Pittsburgh. We also changed “Recreation” to “Recreation & Wellness” because this label implies that there is information about activities for personal recreation and wellness.

We changed “Directory” to “Member Directory” because many of our users seemed confused about what kind of directory it was. The standard deviation for this topic was 1.5 because a third of our participants tried to put it under “Home” and one fourth of them tried to put it under “Community Resources”.

Although “Networking Lunch Series” and “Speaker Series” earned standard deviations of 1.2 and 1.1 respectively, we decided to keep them under “Events” because the label testing results were not an accurate representation since they were taken out of context. In the card sorting activity, none of the participants were confused by the meaning of these two topics, so we believe that if we placed them together under “Events”, the meaning would be clear to the users.

Conclusion

For this project, we conducted two separate tests in order to facilitate usability for the users. We each met with 2 participants who fit into the primary and secondary demographic of the site. The participants sorted the 22 topics on the cards into about 5 to 8 different categories for the Women in Medicine website. There were no critical errors during the process, and we used WebSort.net to enter the data and generate the tree diagrams. Based on these tree diagrams, we developed an organizational scheme that we thought provided a good structure for the information.

Next, we conducted the label test and made some necessary adjustments to the organizational scheme based on the results. These tests helped us to gather data about which of our category labels worked well and which would be confusing to the users. Once we gathered the data from these tests and analyzed the results, we were able to revise our organizational scheme and create the final one. We believe that this final organizational scheme should enhance usability and maximize the accessibility of information on the Women in Medicine website.

Appendix A: Final Organizational Scheme

- Home
- About WiM
 - Mission & History
 - Program Administrators
- Events
 - Calendar of Events
 - Community Service Events
 - Meet & Greets
 - Networking Lunch Series
 - Speaker Series
- Professional Development
 - Career Opportunities
 - Scholarships
- Community Resources
 - Recreation & Wellness
 - Family Resources
 - Living in Pittsburgh
 - Personal Support Groups
 - Religious Organizations
- Members
 - Member Directory
 - Join WiM
 - Mentorship
- Blog/Forum
- Contact Us

Appendix B: Card Sort Talk Script

Part 1: Introduction

Introduce yourself and thank participant for their time.

As part of our web design class at Carnegie Mellon, we are creating a web site for the Allegheny Health Network's Women in Medicine group. At the present stage of the project, we are working on determining how the information on the site will be organized to be user friendly and easy to navigate. Today, you will be helping us with this by performing a card sorting task of the content.

Before we begin that, I need to explain how the results of our session today will be used.

Part 2: Verbal Consent

First, I would like you to know that your responses/input given today will remain anonymous. In a moment, I will ask you to complete a statement of participation and reimbursement form, which simply states you have participated in our test and have received the \$5 reward for doing so. This is just so we can be reimbursed by the department at CMU. Your name will not be tied to your responses.

When we analyze and report on our findings, we may include some background/demographic information about you, such as approximate # of years as a physician, age-group, and other sources of information on women in medicine that you have sought out in the past. This will just be to demonstrate that the users we tested are in the new web site's actual target demographic. Your name or personally-identifying details such as contact information will not be published to anyone.

Also, our report will only be published within our class and to our client contacts (the administrators of the AHN Women in Medicine group). It will not be submitted to any conferences, published on the internet, or shared with anyone else.

Confirm with the test subject that they are okay with all of the terms you have just mentioned?

Give test subject DOC A: Reimbursement Form

Part 3: Opening Survey

Now I will ask you to fill out this brief opening survey to capture some background/demographic information about you. From here on out, anything you say, fill out, or sort for us will only be tied to a non identifiable test subject profile. It will have some background info about you from this survey but your responses will not be linked back to your name.

Give test subject DOC B: Opening Survey

Part 4: Card Sort

We are now ready to begin the card sorting activity. Sort each of the cards into a related group. At the end, you will be asked to provide names for each of the groups you create. Ask yourself which items you would expect to find in the same "menu" on a web site? It might be helpful to think of how the sections and aisles are organized in a grocery store -- milk, cheese and butter are in the Dairy section and apples and oranges are in the Fresh Fruit section.

Name each group with a word or words that best describe the items in that group. If you change your mind, you can simply rename the group, and you can also move items from one group to another. There is no right number of groups, but make sure that you think about how the items relate to each other.

Administer Card Sort activity

Part 5: Closing Survey

Now that you have sorted the cards, I will give you the closing survey. This is the last step of our session today. Again, your responses will not be linked to your name.

Take notes on DOC C: Closing Survey

Doc A: Reimbursement Form

This form will be provided by instructor Cirolì

Doc B: Opening Survey

Participant #: _____ (to be filled in by your test administrator)

Q1: Age and Marital Status. (Optional)

Q2: How many years have you been working in the medical field (since your date of graduation from medical school)?

Q2: What type of physician are you (specialty)?

Q3: How many years have you worked at your current employer?

Q4: How many years have you lived in the metropolitan Pittsburgh area?

Q5: Have you attended any conferences or events for women in the medical field in the past 5 years?

Q5b: If so, how did you find out about the conferences/events?

Q6: Do you frequently visit any websites with resources/information specifically on women in the medical field? If so, please list the site name and relative frequency of use:

Site Name	Frequency of Use (check one)
	<input type="radio"/> Weekly <input type="radio"/> Monthly <input type="radio"/> A few times per year <input type="radio"/> Once per year or less
	<input type="radio"/> Weekly <input type="radio"/> Monthly <input type="radio"/> A few times per year <input type="radio"/> Once per year or less
	<input type="radio"/> Weekly <input type="radio"/> Monthly <input type="radio"/> A few times per year <input type="radio"/> Once per year or less

Doc C: Closing Survey

Participant #: _____ (to be filled in by your test administrator)

Q1: Were there any cards you found difficult to sort into one pile?

Q2: Were you confused about the meaning of any of the cards?

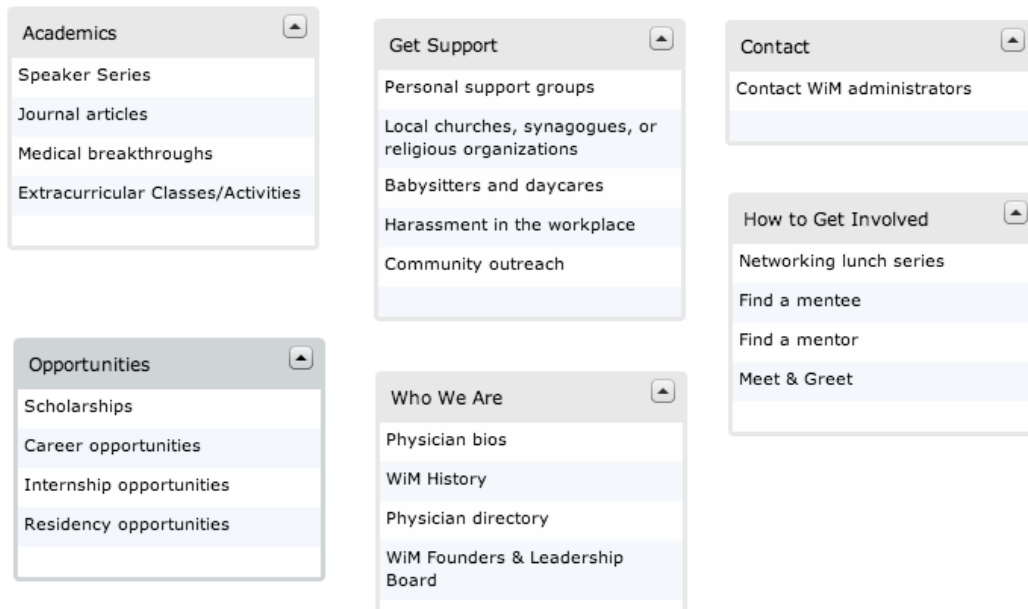
Q3: Would you have added any cards that you did not see to the pile? If so, what would they be?

Q4: What kind of information would you find helpful on a website promoting the health and lifestyle of women physicians?

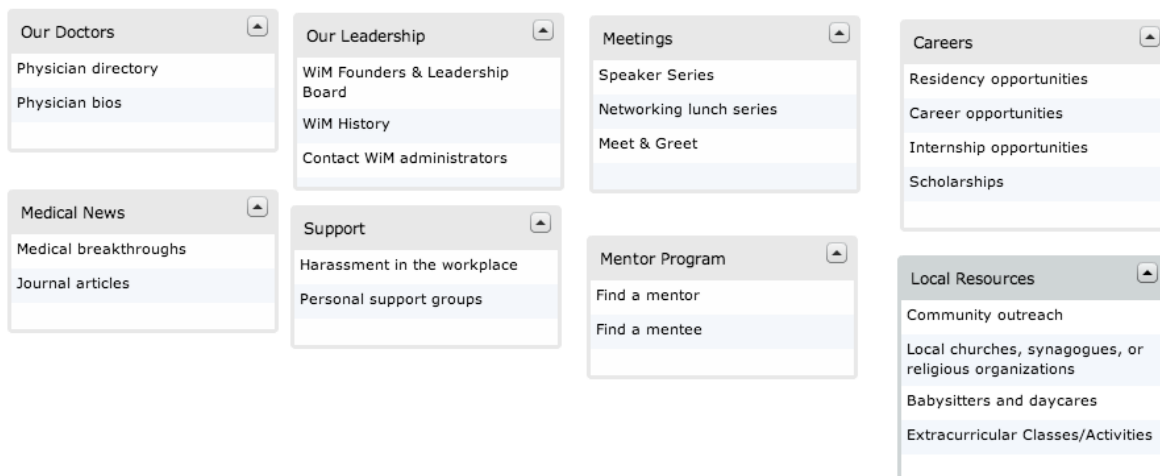
Q5: Do you have any general comments/feedback?

Appendix C: Card Sort Screenshots

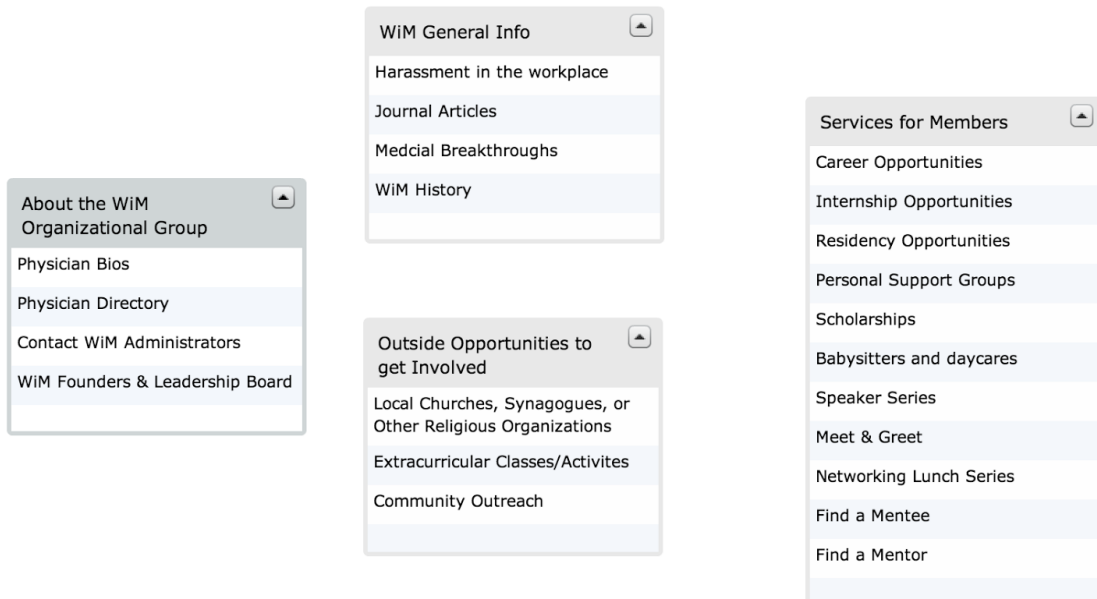
Participant 1:



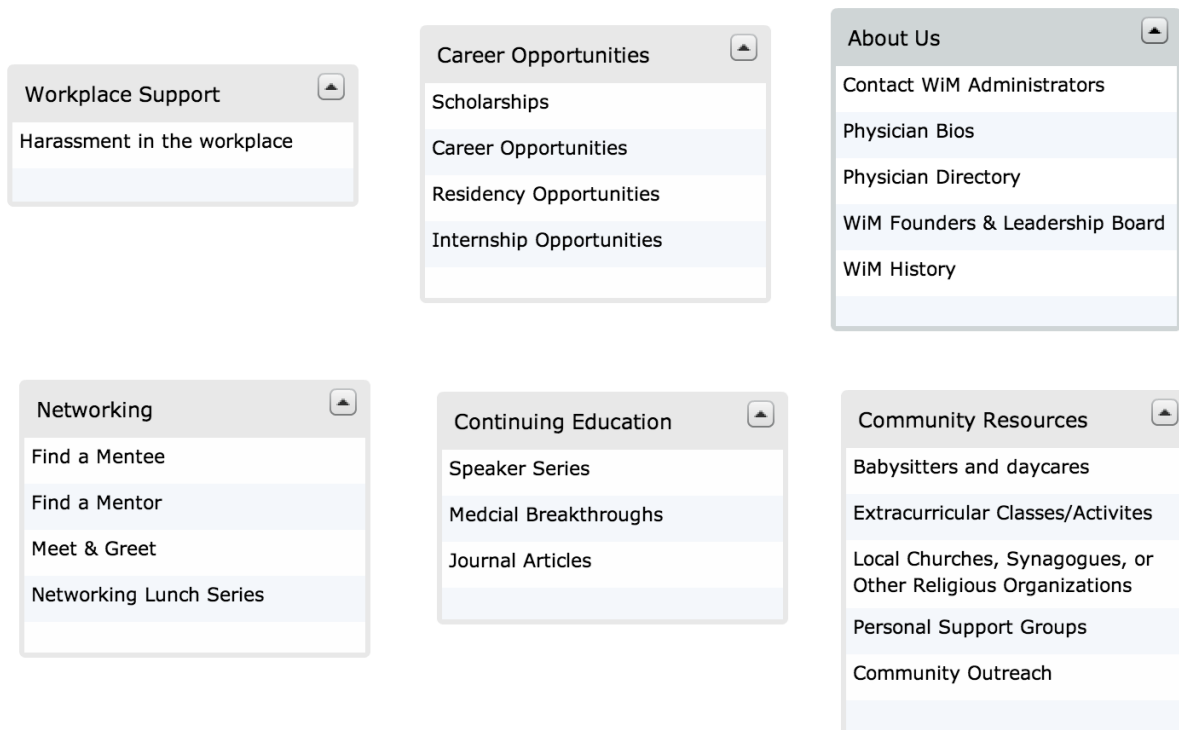
Participant 2:



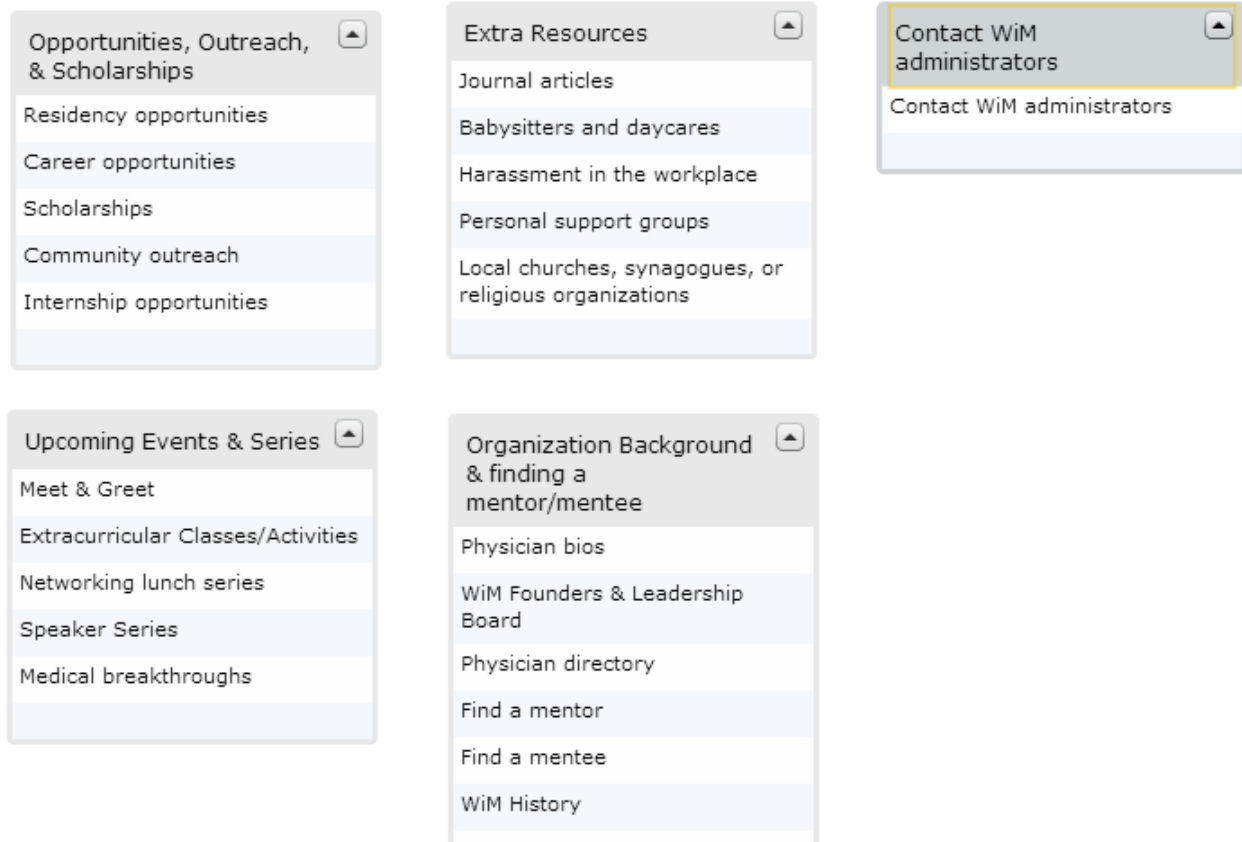
Participant 3:



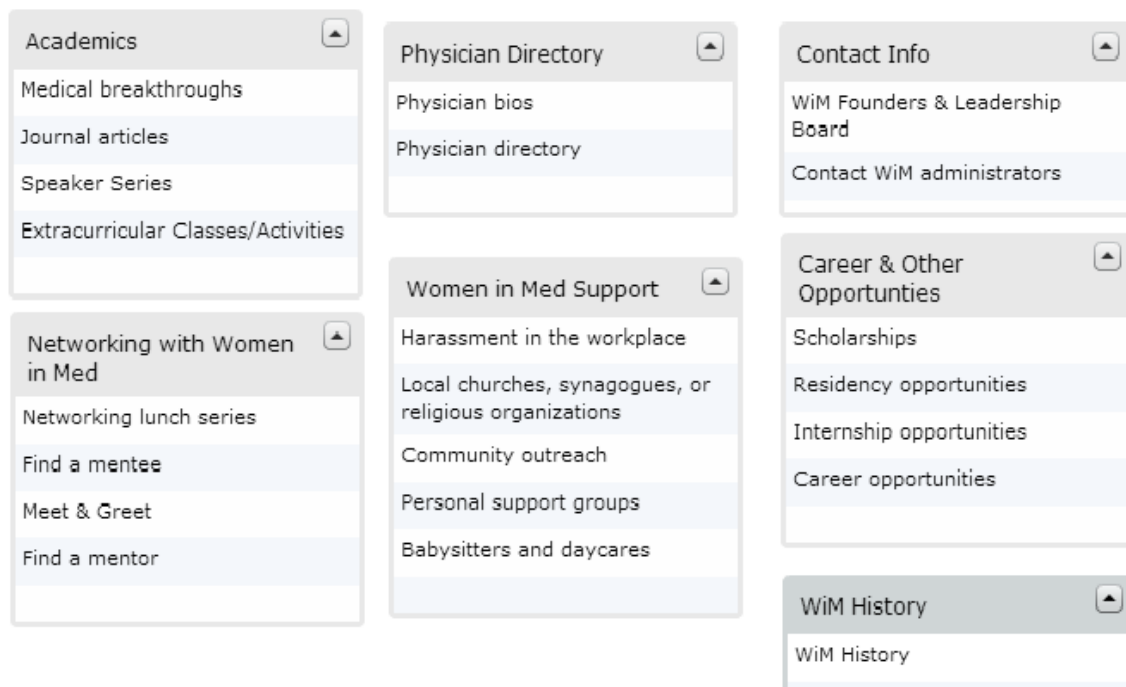
Participant 4:



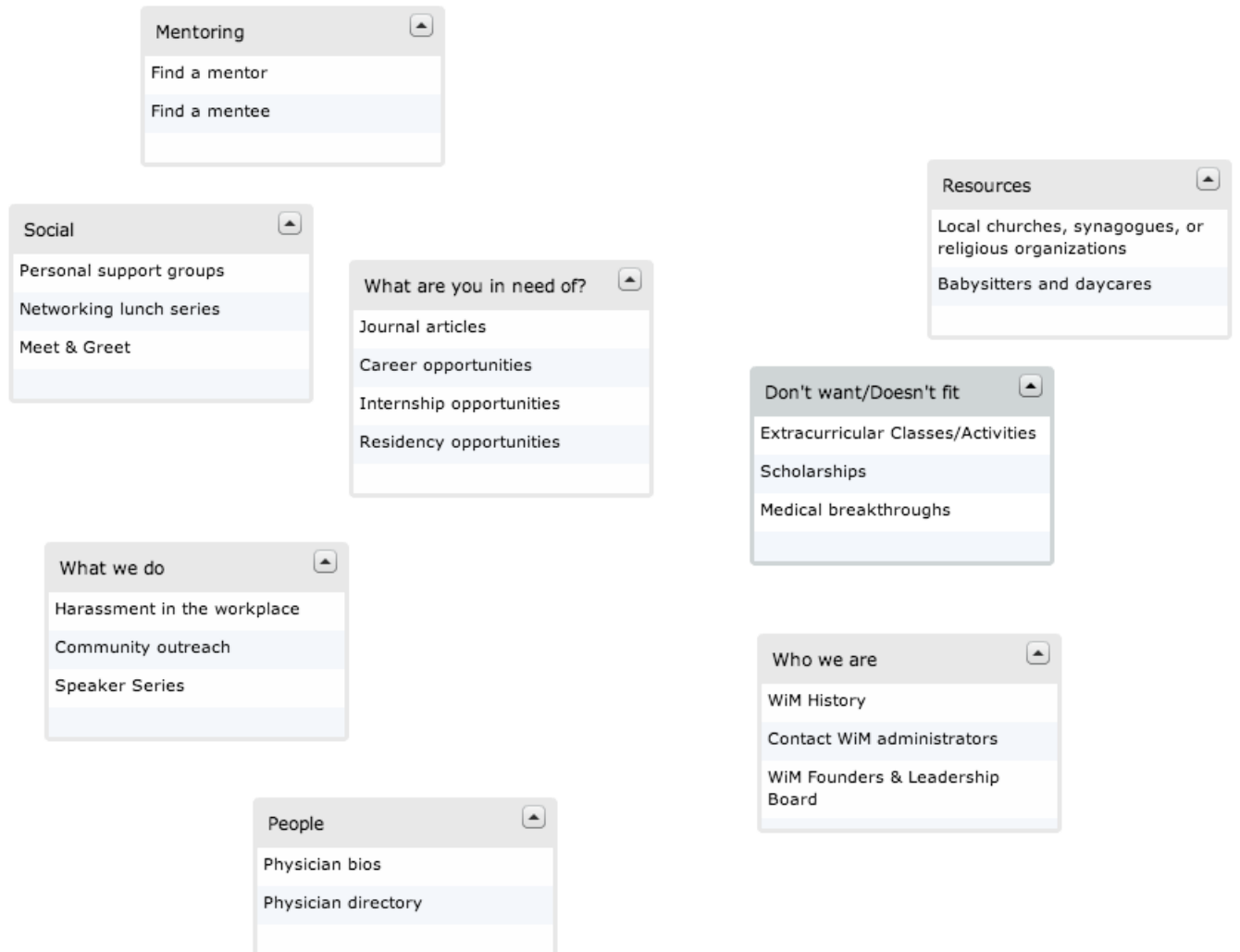
Participant 5:



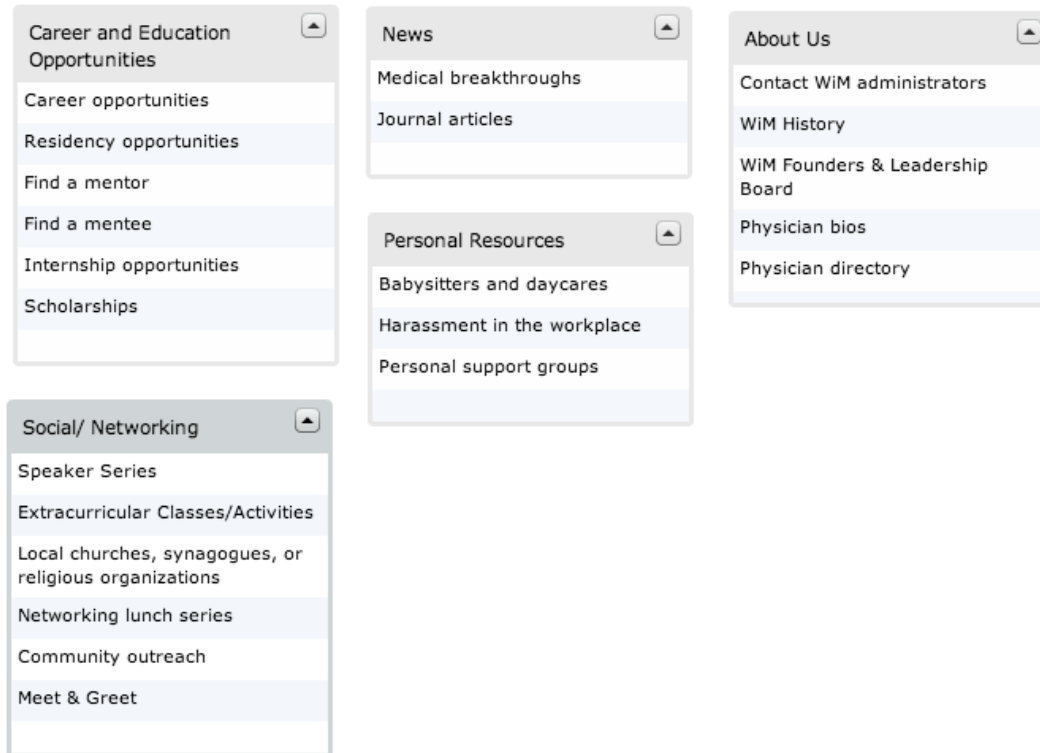
Participant 6:



Participant 7:



Participant 8:



Item by Item Association:

<i>This table shows the % of times each item was placed with every other item</i>	Physician bios	Physician directory	WiM History	WiM Founders & Leadership Board	Contact WiM administrators	Harassment in the workplace	Personal support groups	Babysitters and daycares	Local churches, synagogues, or religious organizations	Community outreach	Scholarships	Career opportunities	Internship opportunities	Residency opportunities	Journal articles	Medical breakthroughs	Speaker Series	Extracurricular Classes/Activities	Networking lunch series	Meet & Greet	Find a mentee	Find a mentor
Physician bios	-																					
Physician directory	100	-																				
WiM History	50	50	-																			
WiM Founders & Leadership Board	63	63	75	-																		
Contact WiM administrators	38	38	50	75	-																	
Harassment in the workplace			13			-																
Personal support groups						63	-															
Babysitters and daycares						50	75	-														
Local churches, synagogues, or religious organizations						38	50	75	-													
Community outreach						38	38	50	75	-												
Scholarships						13	13			13	-											
Career opportunities						13	13			13	88	-										
Internship opportunities						13	13			13	88	100	-									
Residency opportunities						13	13			13	88	100	100	-								
Journal articles																						
Medical breakthroughs																						
Speaker Series						13	13	13	13	25	13	13	13	13	38	50	-					
Extracurricular Classes/Activities						13	25	50	50	13					25	50	50	-				
Networking lunch series						25	13	13	13	13	13	13	13	13	13	13	50	25	-			
Meet & Greet						25	13	13	13	13	13	13	13	13	13	13	50	25	100	-		
Find a mentee	13	13	13	13						25	25	25	25	25			13	50	50	50	-	
Find a mentor	13	13	13	13						25	25	25	25	25			13	50	50	100	-	

Appendix D: Card Sort Topic List

Speaker Series
Physician bios
Scholarships
Personal support groups
Journal articles
Career opportunities
Medical breakthroughs
Local churches, synagogues, or religious organizations
Babysitters and daycares
Networking lunch series
WiM History
Physician directory
WiM Founders & Leadership Board
Internship opportunities
Residency opportunities
Harassment in the workplace
Find a mentee
Find a mentor
Meet & Greet
Community outreach
Extracurricular Classes/Activities
Contact WiM administrators

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